

Evaluation Report and Forms  
**S C I E N C E**

**APPENDIX**  
**Fainal Report**  
January 2012

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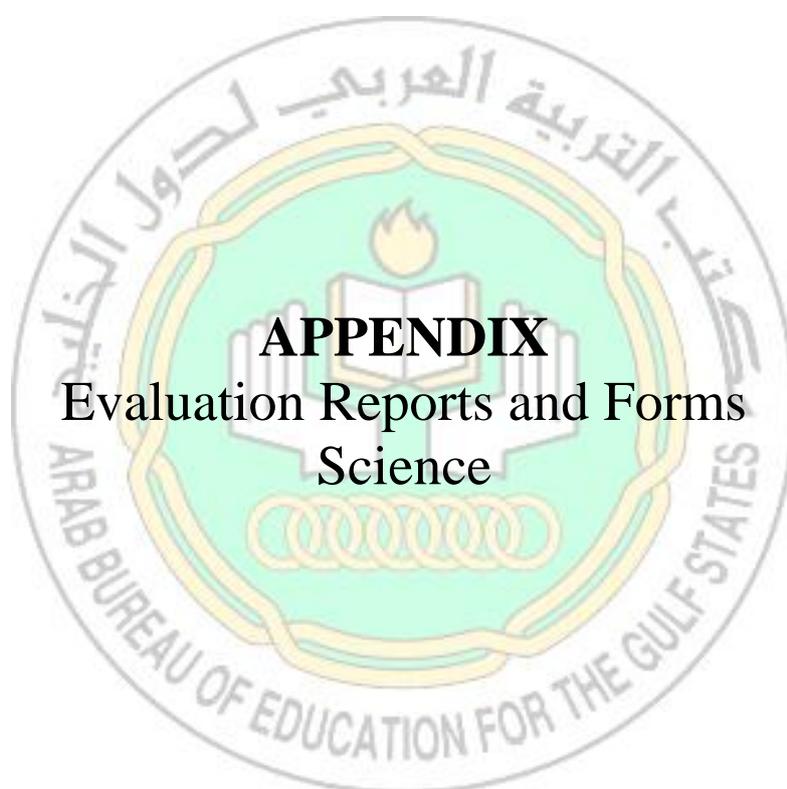


# **Evaluation of the Gulf States Math and Science**

## **Textbooks**

### **Final Report**

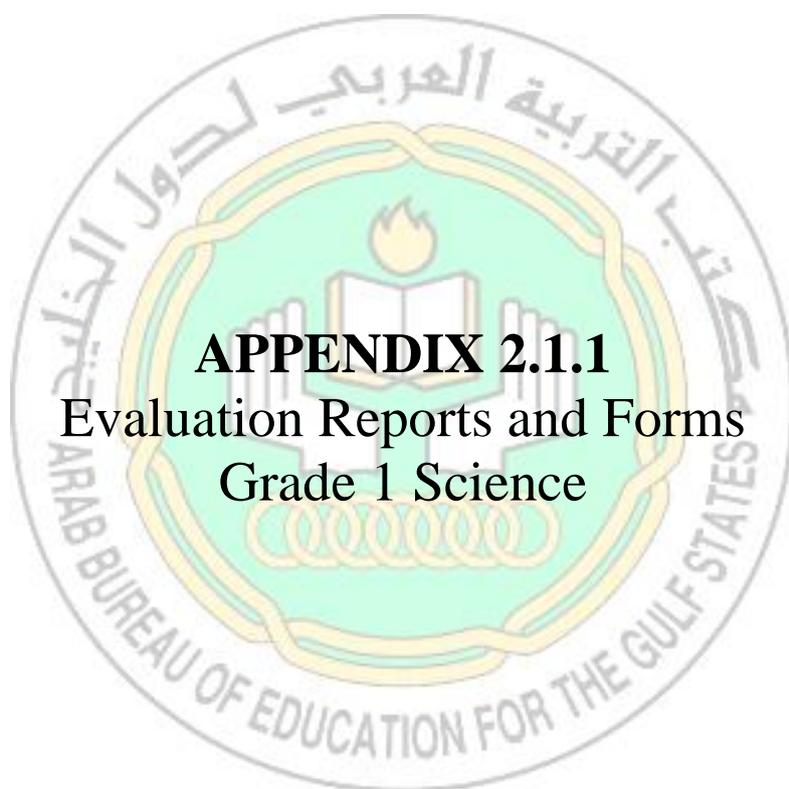
**January, 2012**



## **APPENDIX**

### **Evaluation Reports and Forms**

#### **Science**



**APPENDIX 2.1.1**  
Evaluation Reports and Forms  
Grade 1 Science



### **Table of Contents - Grade 1**

<b>Chapters</b>	<b>Original English Version</b>	<b>Translated Arabic Version</b>
1	Plants are Living Things	Plants are Living Things
2	Plants Grow and Change	Plants Grow and Change
3	<i>All About Animals</i>	<i>Animals Around Us</i>
4	Places to Live	Places to Live
5	<i>Looking at Earth</i>	<i>Features of the Land</i>
6	<i>Caring for Earth</i>	<i>Conserving Earth</i>
7	Weather and Seasons	Weather and Seasons
8	The Sky	The Sky
9	Matter Everywhere	Matter Around Us
10	Changes in Matter	Changes in Matter
11	On the Move	<i>Motion</i>
12	<i>Energy Everywhere</i>	<i>Energy</i>

The chapters in the table of contents in the Arabic translated version are mostly the same as the chapters found in the original English version. Even though the content of the chapters is mostly similar between both versions, some naming in the titles has been changed (as can be seen from the highlighted chapters above). For example, Chapter 3 is called “All about animals” in the English version while in the Arabic textbook it is called “Animals around us”. Similarly, Chapter 5 in the original textbook is called “Looking at Earth” while it is “Features of the Land” in the translated version.

It was evident that some of the lessons within a chapter are integrated. For example, the lesson 3 “Spring and Summer” and lesson 4 “Fall and Winter” in chapter 7 in the original textbook are integrated under a lesson called “The four Seasons” in the Arabic version. It was also found that some of the lessons found in the English textbook are completely omitted in the translated book. For example, lesson 4 “Magnets” in Chapter 11 and lesson 4 “Electricity” in chapter 12 (Original English textbook) are completely missing in the translated Arabic version.

Moreover, most of the inquiry activities, inquiry skill building activities, reading in science, math in science, and careers in science found in the English version are totally missing in the Arabic textbook. Some new reading in science and math in science were added in the Arabic version to meet the cultural backgrounds of the students. However, all the “I read to review” section was eliminated in the translated version. Finally, the English textbooks include two pages titled “Unit literature” before starting a new unit. Those “Unit literature” were entirely omitted in the Arabic version.

However, the Arabic textbook added the scientific method, scientific skills, and safety instructions at the beginning of the table of contents which were not found in the original textbook. Moreover, a student’s resources at the end of the second semester that includes vocabulary, scientific tools... was also added in the translated version.

Note: The philosophy of the book that is found in the translated Arabic version at the beginning of students’ textbook is not written in the original English science textbook.



<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 1 Semester: 1				
		Textbook Title: العلوم				
		Chapter Title: من حولنا الحيوانات				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<i>Criterion/Indicator</i>						
<b>1. Agreement of the translated Arabic book with that of the English book</b>						
1.1. Definitions and explanations in the chapter				✓		
1.2. Activities included in the chapter				✓		
1.3. Learning objectives						
1.4. Practice exercises						
1.5. Assessment exercises				✓		
1.6. Figures, pictures, and illustration					✓	
<b>2. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
2.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

### **General Overview:**

The chapter in the original English textbook is titled “All about Animals” while in the translated Arabic textbook it is called “All about Animals”. Moreover, the lessons in each of those chapters differ.

The 4 lessons in the “All about Animals” chapter found in the *original English textbook* are:

- Lesson 1: All Kinds of Animals
- Lesson 2: What Animals need to live
- Lesson 3: How Animals eat food
- Lesson 4: Animals Grow and Change

The 3 lessons in the “Animals around us” chapter found in the *translated Arabic version* are:

- Lesson 1: Kinds of Animals
- Lesson 2: Animals and their needs
- Lesson 3: Animals Grow and Change

Therefore, lesson 2 and lesson 3 in the original English textbook are integrated into lesson 2 in the translated Arabic version.

#### **1.1) Definitions and explanations in the chapter:**



Most of the definitions of the vocabulary words found in the translated Arabic version are accurately translated from the original English textbook. However, some of the words are omitted in the translated version. For example, the word “tadpole” that was found in Lesson 4 of the original version was not mentioned in the translated textbook since the translators did not include the paragraph about ‘how do frogs grow and change’.

The explanation found in the translated version was quite similar to that in the original book. However, some of the explanation was missing (please check the photocopied chapter). For example, the paragraph about “tadpoles” on page 114 and 115 was not found in the translated version. Finally, the Arabic textbook did not include the fox and the parrot as examples but instead gave the example of a rabbit and duck to explain “life cycle”. This change may be due to the cultural difference.

Note: A “Key Vocabulary” sheet is found at the beginning of each chapter in both the English and the Arabic textbooks that defines the new vocabulary words. However, the original English textbook provides the page number where each word appears unlike the Arabic translated version. In addition, other new words that are not defined in the “Key Vocabulary” sheet in the English textbook are written under a section called “More Vocabulary” and their page numbers are also provided. This is not observed in the Arabic version. Moreover, the original textbook has a section titled “Read together and learn” at the beginning of each lesson that includes the vocabulary words that are found in that lesson. The Arabic textbook has removed that section.

#### **1.2) Activities included in the chapter:**

In general, the original English textbook contains 8 activities (inquiry activity and quick lab) found on pages 87, 91, 95, 99, 103, 107, 109, and 113. Only 6 activities were noted in the translated version and one of the quick labs was added (page 60 Arabic version). Please check the photocopied chapter.

Most of those activities are translated accurately. However, the Arabic version of the inquiry activity called “What are some different kinds of animals?” (Page 87 in the English book and page 51 in the Arabic book) changed the last question ‘what other animals could you put in each group? Why?’ into a statement ‘mention other animals I can add to my group’. This shows that higher order thinking is eliminated in the translated version.

Note: The original English textbook includes “Writing in science”, “math in science”, “reading in science”, and “I read to review: my animal book” which are not included in the translated version. The Arabic version contains another “reading in science” activity on page 68 that was not found in the original book.

#### **1.5) Assessment Exercises:**

Different assessment exercises are found within the lessons that are questions to assess students’ knowledge. Other assessment exercises are located at the end of each lesson titled “Think, Talk, and Write” and “Chapter Review”.

Most assessment exercises were translated accurately into Arabic. However, the questions that tackled tadpoles were omitted and changed into questions about rabbits or pigeons.

#### **1.6) Figures, pictures, and illustrations:**

The pictures and illustrations are very similar to the original textbook. Some of the pictures were changed due to cultural consideration. For example, pictures of girls were changed into female Arab girls. Moreover, pictures of dogs were changed into pictures of cats.



<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 1 Semester: 2				
		Textbook Title: العلوم				
		Chapter Title: الطقس و الفصول				
		Completely different	Large difference	Little difference	Difference due only to cultural reasons	No difference
<i>Criterion/Indicator</i>						
<b>3. Agreement of the translated Arabic book with that of the English book</b>						
3.1. Definitions and explanations in the chapter				✓		
3.2. Activities included in the chapter				✓		
3.3. Learning objectives						
3.4. Practice exercises						
3.5. Assessment exercises				✓		
3.6. Figures, pictures, and illustration					✓	
<b>4. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
4.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

### General Overview:

The chapter in the original English textbook and in the translated version is called “Weather and Seasons”. However, the lessons in each of those chapters differ.

The 4 lessons in the “Weather and Seasons” chapter found in the *original English textbook* are:

- Lesson 1: Weather all around us
- Lesson 2: The Water Cycle
- Lesson 3: Spring and Summer
- Lesson 4: Fall and Winter

The 3 lessons in the “Weather and Seasons” chapter found in the *translated Arabic version* are:

- Lesson 1: Weather around us
- Lesson 2: The four seasons



Lesson 2: The Water Cycle is completely removed in the translated version. Moreover, lesson 3 and lesson 4 in the original English textbook are integrated into lesson 2 in the translated Arabic version.

**1.3) Definitions and explanations in the chapter:**

Most of the definitions of the vocabulary words found in the translated Arabic version are accurately translated from the original English textbook. However, some of the words are omitted in the translated version. For example, the words “wind vapor” and “wind vane” that were found in Lesson 2 of the original version were not mentioned in the translated textbook since the translators removed this lesson.

The explanation found in the translated version was quite similar to that in the original book. However, some of the explanation was missing (please check the photocopied chapter). Since lessons were integrated, some of the paragraphs were omitted.

Note: A “Key Vocabulary” sheet is found at the beginning of each chapter in both the English and the Arabic textbooks that defines the new vocabulary words. However, the original English textbook provides the page number where each word appears unlike the Arabic translated version. In addition, other new words that are not defined in the “Key Vocabulary” sheet in the English textbook are written under a section called “More Vocabulary” and their page numbers are also provided. This is not observed in the Arabic version. Moreover, the original textbook has a section titled “Read together and learn” at the beginning of each lesson that includes the vocabulary words that are found in that lesson. The Arabic textbook has removed that section.

**1.4) Activities included in the chapter:**

In general, the original English textbook contains 8 activities (inquiry activity and quick lab). Only 5 activities were accurately translated in the translated version. That is due to the fact that lesson 2 from the original textbook was removed and because lessons 3 and 4 in the English textbook were integrated.

Note: The original English textbook includes “math in science”, “reading in science”, and “I read to review: my animal book” which are not included in the translated version. However, the ‘writing in science – seasons change’ was translated and placed in the Arabic textbook.

**1.7) Assessment Exercises:**

Different assessment exercises are found within the lessons that are questions to assess students’ knowledge. Other assessment exercises are located at the end of each lesson titled “Think, Talk, and Write” and “Chapter Review”.

Most assessment exercises were translated accurately into Arabic. Some questions were changed since the lessons were integrated. That is why there weren’t any questions about spring, summer, or fall in the “Think, Talk, and Write” section.

**1.8) Figures, pictures, and illustrations:**

The pictures and illustrations are very similar to the original textbook. Some of the pictures were changed due to cultural consideration. For example, pictures of girls were changed into pictures of either Arab boys or girls. (Please check the photocopied chapter).



## Science Report Grade 1 Term 1

The following report is an evaluation of science books in grade 1 (first semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of the books is divided into six chapters. Three chapters out of six chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 1: Plants around us; (2) chapter 4: Habitats; and (3) chapter 6: Preserving the Earth. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

- **Philosophy of the book:**

- ***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Interpret pictures
  - Scientific reading
  - Scientific writing
  - Drawing
  - Model construction
- Integrating science with various branches of knowledge, with real world and everyday life situations, and with health, art, and societal issues.



### **Activity Book: emphasis on:**

- Performing activities that deepens students' scientific knowledge
- Increase students' research skills and survey
- Improving students' attitudes towards and interests in science and scientists

### **Evaluation:**

The content of the chapters, activities, practice exercises, assessment exercises, and skills are **mostly** aligned with the philosophy that was presented at the beginning of the book. However, it was clear that the content of the chapters, activities, practice exercises, assessment exercises, and skills also do not tackle worldwide advancements. As for the learning objectives in all the chapters examined, it was evident that the scientific method, mental and practical skills, and the worldwide advancements are not part of the objectives as has been claimed in the philosophy. Furthermore, all the learning objectives in the three chapters were at level 1 and 2 of Blooms taxonomy since most of them focus on memory and recall. However, two lessons that are titled "scientific skills" and "scientific method" are found at the beginning of students' textbook term 1. The objective of those lessons is to explain the scientific skills and scientific method to the students for example تطبيق الطريقة التي يستخدمها العلماء لدراسة العالم من حولهم. Finally, the Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.

As for the Students' workbook, it is not divided into chapters which are aligned with the science textbook and no titles are found at the beginning of each lesson. Moreover, redundancy in the activities between the workbook and the textbook was evident in all the chapters that were examined (please check the book evaluation forms).

- **Suitability of the Arabic language:** In general, the Arabic language is suitable for first graders. The technical terms are well defined at the beginning of each chapter using simple Arabic language. However, not all the new vocabulary words are defined at the beginning of the chapter. Some of the vocabulary words that are needed to define other new terminology are not mentioned on the Vocabulary page that is found at the beginning of each chapter. Moreover, the technical words learned in a lesson are not reused in the following lessons of the same chapter, but they are fairly used in other consequent chapters.
- **Suitability of the Arabization to serve the science concept:** The illustrations, activities, contents practice exercises, assessment exercises, and skills used in the textbooks serve the science concept of the chapters.
- **Cultural context:** The illustrations found in the textbook are suitable for the cultural context. The names used in the practice exercises are only male names however, male and female pictures were found in the textbook and workbook.



## Science Report Grade 1, term 2

The following report is an evaluation of science books in grade 1 (second term) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Three chapters out of six chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 8: The Sky; (2) chapter 9: Matter around us; and (3) chapter 6: Energy. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

- **Philosophy of the book:**

- ***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Interpret pictures
  - Scientific reading
  - Scientific writing
  - Drawing
  - Model construction
- Integrating science with various branches of knowledge, with real world and everyday life situations, and with health, art, and societal issues.



**Activity Book: emphasis on:**

- Performing activities that deepens students' scientific knowledge
- Increase students' research skills and survey
- Improving students' attitudes towards and interests in science and scientists

**Evaluation:**

There is almost satisfactory evidence that the content of the chapters, activities, practice exercises, assessment exercises, and skills are aligned with the philosophy of the book. Specifically, activities and practice exercises that involve the scientific method are clear. However, worldwide advancements are not tackled in any of the criteria under study. Moreover, all of the learning objectives belong to the first and second Blooms Taxonomy level where by the focus is mostly on memory and comprehension. Moreover, the scientific method is not a learning objective for students as has been mentioned in the philosophy of the book. Finally, the Learning Objectives are only found in the Teachers' Guide and not mentioned in Students' Textbooks.

As for the Students' workbook, it is not divided into chapters which are aligned with the science textbook and no titles are found at the beginning of each lesson. Moreover, redundancy in the activities between the workbook and the textbook were evident in all the chapters that were examined (please check the book evaluation forms).

- **Suitability of the Arabic language:** In general, the Arabic language is suitable for the first graders. The technical terms are well defined at the beginning of each chapter using simple Arabic language. However, not all the new vocabulary words are defined at the beginning of the chapter. Some of the vocabulary words that are needed to define other new terminology are not mentioned on the Vocabulary page that is found at the beginning of each chapter (please check the book evaluation forms). It is worth noting that the reuse of new terminology is evident in subsequent lessons in the same chapter and not in different chapters.
- **Suitability of the Arabization to serve the science concept:** The illustrations, activities, contents practice exercises, assessment exercises, and skills used in the textbooks serve the science concept of the chapters.
- **Cultural context:** The illustrations, content, activities, and the practice and assessment exercises found in the textbook are suitable for the cultural context.



<b>Book Evaluation Form</b>	Subject: Science			
	Grade: Grade 1			
	Textbook Title: العلوم			
	Chapter Title: اماكن العيش			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>5. Alignment of the translated texts to the philosophy of the original textbook</b>				
5.1. Content of the Chapter			✓	
5.2. Activities included in the chapter			✓	
5.3. Learning objectives	✓			
5.4. Practice exercises			✓	
5.5. Assessment exercises			✓	
5.6. Skills				✓
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3 1.3) The learning objectives are not aligned with the philosophy of the book especially since there is no mention of the scientific method and worldwide advancements in any of the learning objectives as has been mentioned in the philosophy. (please check Teachers' Guide page 90 and page 96) The learning objectives belong to level 1 and 2 Blooms Taxonomy for example يصف مواطن اليابسة				
	e nc de cvt	e nc de cvt	e nc de cvt	e nc de cvt
<b>2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
2.1. Length of sentences			✓	
2.2. Complexity of sentences			✓	
2.3. Diversity of language structures			✓	
2.4. Number of concepts per chapter				✓
2.5. Reuse of technical terms in subsequent lessons and chapters			✓	
2.6. Clarity of definitions of technical terms		✓		
2.7. Using concrete examples to illustrate concepts			✓	
2.8. Redundancy of terms and sentences with no educational benefit.				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3 2.6) Not all the new technical words are defined on the vocabulary sheet (page 71 in the				

students' textbook) at the beginning of the chapter. Other new words that students haven't been exposed to are defined within the chapter (page 74, page 80, and page 81 in the students' textbook).

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>3.1. Illustrations</i>				✓
<i>3.2. Content</i>			✓	
<i>3.3. Activities</i>			✓	
<i>3.4. Practice Exercises</i>			✓	
<i>3.5. Assessment exercises</i>			✓	
<i>3.6. Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>4. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>4.1. Illustrations</i>			✓	
<i>4.2. Content</i>			✓	
<i>4.3. Activities</i>				✓
<i>4.4. Practice Exercises</i>			✓	
<i>4.5. Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

- This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
- The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
- The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
- Redundancy in the activities between the workbook and the textbook (please check page 73 of the textbook and page 23 of the workbook, similarly check page 79 of the textbook and page 25 of the workbook).



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 1			
		Textbook Title: العلوم			
		Chapter Title: المحافظة على الارض			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>6. Alignment of the translated texts to the philosophy of the original textbook</b>					
6.1. Content of the Chapter					
6.2. Activities included in the chapter					
6.3. Learning objectives					
6.4. Practice exercises					
6.5. Assessment exercises					
6.6. Skills					
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3					
1.3) The learning objectives are not aligned with the philosophy of the book especially since there is no mention of the scientific method and worldwide advancements in any of the learning objectives as has been stated in the philosophy. (please check Teachers' Guide page 130 and page 136) The learning objectives belong to level 1 and 2 Blooms Taxonomy.					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>3. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
3.1. Length of sentences					
3.2. Complexity of sentences					
3.3. Diversity of language structures					
3.4. Number of concepts per chapter					
3.5. Reuse of technical terms in subsequent lessons and chapters					
3.6. Clarity of definitions of technical terms					
3.7. Using concrete examples to illustrate concepts					



3.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				
2.1) There is evidence of run-on sentences in page 114 of the Science textbook. (First 3 sentences).				
2.6) Not all the new technical words are defined on the vocabulary sheet (page 105 in the students' textbook) at the beginning of the chapter. One new word (موارد طبيعية) that students haven't been exposed to is defined within the chapter (page 108 in the students' textbook).				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>5. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
5.1. <i>Illustrations</i>				✓
5.2. <i>Content</i>				✓
5.3. <i>Activities</i>				✓
5.4. <i>Practice Exercises</i>				✓
5.5. <i>Assessment exercises</i>				✓
5.6. <i>Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>6. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
6.1. <i>Illustrations</i>				✓
6.2. <i>Content</i>			✓	
6.3. <i>Activities</i>			✓	
6.4. <i>Practice Exercises</i>			✓	
6.5. <i>Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

- This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).



- The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
- The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
- Redundancy in the activities between the workbook and the textbook (please check page 107 of the textbook and page 30 of the workbook, similarly check page 113 of the textbook and page 31 of the workbook).





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 1			
		Textbook Title: العلوم			
		Chapter Title: السماء من فوقنا			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>7. Alignment of the translated texts to the philosophy of the original textbook</b>					
7.1. Content of the Chapter					
7.2. Activities included in the chapter					
7.3. Learning objectives					
7.4. Practice exercises					
7.5. Assessment exercises					
7.6. Skills					
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) All of the learning objectives belong to level 1 and level 2 Blooms Taxonomy for example يشرح اهمية الشمس للحياة على الارض except for one learning objective that is at the fourth level of Blooms Taxonomy يستنتج حركة الارض بملاحظة الهلال (Please check the second objective that is found in the Teachers' Guide page 40). The Learning objectives do not mention the scientific method as it has been stated in the philosophy of the book.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>4. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
4.1. Length of sentences					
4.2. Complexity of sentences					
4.3. Diversity of language structures					
4.4. Number of concepts per chapter					
4.5. Reuse of technical terms in subsequent lessons and chapters					
4.6. Clarity of definitions of technical terms					
4.7. Using concrete examples to illustrate					



<i>concepts</i>				
4.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>7. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
7.1. <i>Illustrations</i>				✓
7.2. <i>Content</i>				✓
7.3. <i>Activities</i>				✓
7.4. <i>Practice Exercises</i>				✓
7.5. <i>Assessment exercises</i>				✓
7.6. <i>Skills</i>				✓
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>8. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
8.1. <i>Illustrations</i>				✓
8.2. <i>Content</i>				✓
8.3. <i>Activities</i>			✓	
8.4. <i>Practice Exercises</i>			✓	
8.5. <i>Assessment exercises</i>			✓	
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

- This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
- The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.



- The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
- Redundancy in the activities between the workbook and the textbook (please check page 25 of the textbook and page 12 of the workbook, similarly check page 31 of the textbook and page 13 of the workbook).





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 1			
		Textbook Title: العلوم			
		Chapter Title: من حولنا المادة			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>8. Alignment of the translated texts to the philosophy of the original textbook</b>					
8.1. Content of the Chapter					
8.2. Activities included in the chapter					
8.3. Learning objectives					
8.4. Practice exercises					
8.5. Assessment exercises					
8.6. Skills					
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) All of the Learning objectives belong to level 1 and level 2 Blooms Taxonomy for example يحدد صفات المواد الصلبة و الوسائل والغازات (please check the second learning objective in the Teachers' Guide page 62). The Learning objectives do not mention the scientific method as has been stated in the philosophy of the book.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>5. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
5.1. Length of sentences					
5.2. Complexity of sentences					
5.3. Diversity of language structures					
5.4. Number of concepts per chapter					
5.5. Reuse of technical terms in subsequent lessons and chapters					
5.6. Clarity of definitions of technical terms					
5.7. Using concrete examples to illustrate					



<i>concepts</i>				
5.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				
2.6) Not all the new vocabulary words are defined at the beginning of the chapter (please check the Vocabulary Sheet in the students' textbook page 41). There are two additional words (page 45 and page 46) that are defined in the content of the chapter and not mentioned in the Vocabulary sheet. The words <i>المادة</i> and <i>الكتلة</i> are both needed to define the other new vocabulary words.				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>9. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
9.1. <i>Illustrations</i>			✓	
9.2. <i>Content</i>				✓
9.3. <i>Activities</i>			✓	
9.4. <i>Practice Exercises</i>				✓
9.5. <i>Assessment exercises</i>				✓
9.6. <i>Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>10. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
10.1. <i>Illustrations</i>				✓
10.2. <i>Content</i>				✓
10.3. <i>Activities</i>				✓
10.4. <i>Practice Exercises</i>			✓	
10.5. <i>Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

- This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).



- The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
- The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
- Redundancy in the activities between the workbook and the textbook (please check page 43 of the textbook and page 15 of the workbook, similarly check page 49 of the textbook and page 17 of the workbook).







6.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				
2.6) Not all the new vocabulary words are defined at the beginning of the chapter (please check the Vocabulary Sheet in the students' textbook page 101). There is one additional word (page 104) that is defined in the content of the chapter and not mentioned in the Vocabulary sheet. The word is الطاقة that is needed to define the other new vocabulary words.				
Note: Reuse of new terminology is evident in subsequent lessons in the same chapter and not in different chapters.				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>11. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
11.1. <i>Illustrations</i>				✓
11.2. <i>Content</i>				✓
11.3. <i>Activities</i>				✓
11.4. <i>Practice Exercises</i>				✓
11.5. <i>Assessment exercises</i>				✓
11.6. <i>Skills</i>				✓
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>12. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
12.1. <i>Illustrations</i>				✓
12.2. <i>Content</i>			✓	
12.3. <i>Activities</i>			✓	
12.4. <i>Practice Exercises</i>			✓	
12.5. <i>Assessment exercises</i>			✓	
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

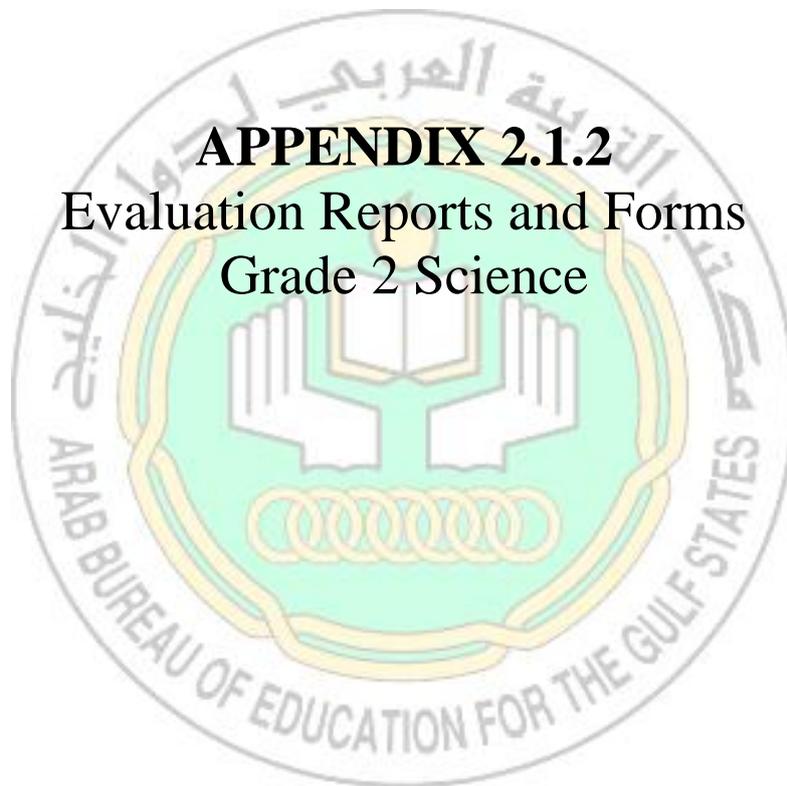
Comments and explanation on implementing the indicator.

Additional indicators and other comments.



- This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
- The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
- The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
- Redundancy in the activities between the workbook and the textbook (please check page 103 of the textbook and page 30 of the workbook, similarly check page 109 of the textbook and page 32 of the workbook).





**APPENDIX 2.1.2**  
Evaluation Reports and Forms  
Grade 2 Science



## Table of Contents - Grade 2

Chapters	Original English Version	Translated Arabic Version
1	Plants	Plants
2	Animals	Animals
3	Looking at Habitats	Looking at Habitats
4	Kinds of Habitats	Kinds of Habitat
5	Land and Water	Land and Water
6	Earth's Resources	Earth's Resources
7	Observing Weather	Observing Weather
8	Earth and Space	Earth and Space
9	Looking at Matter	Looking at Matter
10	Changes in Matter	Changes in Matter
11	<i>How Things Move</i>	<i>Force</i>
12	Using Energy	Using Energy

The chapters in the table of contents in the Arabic translated version are the same as the chapters found in the original English version. The only difference was noted was in the naming of chapter 11 in both versions even though they both tackle the concept 'forces'. In the English textbook chapter 11 is titled "How Things Move" while in the Arabic version it is called "Forces".

It was found that some of the lessons found in the English textbook are completely omitted in the translated book. For example, lesson 3 "the moon and stars" and lesson 4 "the solar system" in Chapter 8 "Earth and Space" in the original textbook were totally removed in the translated version. Similarly, two lessons in each chapter (11 and 12) were skipped in the Arabic textbook. (Please check the photocopied chapter).

Moreover, most of the reading in science, math in science, and writing in science found in the English version are totally missing in the Arabic textbook. However, some of the readings in science activities were changed in the translated textbook taking into consideration the cultural differences among the English students and the Arab students. It was also evident that all the "I read to review" section and "careers in science" section were eliminated in the translated version. Finally, the English textbooks include two pages titled "Unit literature" before starting a new unit. Those "Unit literature" were entirely omitted in the Arabic version.

However, the Arabic textbook added the scientific method, scientific skills, and safety instructions at the beginning of the table of contents which were not found in the original textbook. Moreover, a 'student's resources' section at the end of the second semester that includes vocabulary, scientific tools, health, safety... was also added in the translated version.

Note: The philosophy of the book that is found in the translated Arabic version at the beginning of students' textbook is not written in the original English science textbook.



<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 2 Semester: 1				
		Textbook Title: العلوم				
		Chapter Title: الحيوانات				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>Criterion/Indicator</b>						
<b>10. Agreement of the translated Arabic book with that of the English book</b>						
10.1. Definitions and explanations in the chapter				✓		
10.2. Activities included in the chapter				✓		
10.3. Learning objectives						
10.4. Practice exercises						
10.5. Assessment exercises				✓		
10.6. Figures, pictures, and illustrations					✓	
<b>11. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
11.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

### **General Overview:**

The chapter in the original English textbook and the same chapter in the translated Arabic textbook are both titled “Animals”. However, the lessons in each of those chapters differ. The 3 lessons in the “Animals” chapter found in the *original English textbook* are:

- Lesson 1: Animal Groups
- Lesson 2: Animals Grow and Change
- Lesson 3: Staying Alive

The 2 lessons in the “Animals” chapter found in the *translated Arabic version* are:

- Lesson 1: Animal Groups
- Lesson 2: Animals Grow and Change

Therefore, lesson 3 “Staying Alive” in the original English textbook is completely omitted in the translated Arabic version.



### 1.5) Definitions and explanations in the chapter:

Most of the definitions of the vocabulary words found in the translated Arabic version are accurately translated from the original English textbook. However, some of the words are omitted in the translated version. For example, the words “adaptation” and “camouflage” that were found in Lesson 3 of the original version were not mentioned in the translated textbook since the translators did not include lesson 3 in the Arabic version. The word “Bird” was considered a new vocabulary word in the Arabic textbook and was included in the “Key Vocabulary” at the beginning of the book even though it was not found to be a new vocabulary word in the original English version.

The explanation found in the translated version was quite similar to that in the original book except for the fact that Lesson 3 was completely omitted in the Arabic textbook. The original textbook explained “life cycle” by giving examples of giant panda’s life cycle and chicken life cycle. The Arabic textbook did not include the panda and chicken as examples but instead gave the example of a goat to explain “life cycle”. This change may be due to the cultural difference.

Note: A “Key Vocabulary” sheet is found at the beginning of each chapter in both the English and the Arabic textbooks that defines the new vocabulary words. However, the original English textbook provides the page number where each word appears unlike the Arabic translated version. In addition, other new words that are not defined in the “Key Vocabulary” sheet in the English textbook are written under a section called “More Vocabulary” and their page numbers are also provided. This is not observed in the Arabic version.

### 1.6) Activities included in the chapter:

In general, the original English textbook contains 4 activities (inquiry activity and quick lab) in the first *two* lessons (not taking into account the 2 activities found in the third lesson since lesson 3 from the original book is completely missing in the translated version) found on pages 55, 59, 61, and 63. Only 3 activities were noted in the translated version. Please check the photocopied chapter.

Note: The original English textbook includes “Reading in Science: Meet the Scientist” on page 66 and 67. That was replaced by “Reading in Science: Snakes” on page 47 in the translated version to meet the cultural background of Arab students. However, “Writing in Science” on page 74, “Math in Science” on page 75, and “I Read to Review” on page 76 – 79 in the original textbook are not included in the translated version. Finally, “Careers in Science” section was completely omitted in the Arabic version.

### 1.9) Assessment Exercises:

Different assessment exercises are found within the lessons that are questions to assess students’ knowledge. Other assessment exercises are located at the end of each lesson titled “Think, Talk, and Write” and “Chapter Review”.

Four questions were found within the original lessons (not taking into account the questions in the third lesson since lesson 3 from the original book is completely missing in the translated version). Only 3 of those questions were translated into Arabic (please check the photocopied chapter). The “Think, Talk, and Write” of the first two lessons in the original textbook are evident in the translated Arabic version (not taking into account the “Think, Talk, and Write” in lesson 3 since it was not included in the Arabic textbook). Finally, the “Chapter Review” is similar in both the English version and in the Arabic version. However, all questions that tackle Lesson 3 were not included in the translated textbook (please check the photocopied chapter).



**1.10) Figures, pictures, and illustrations:**

Most of the pictures and illustrations were present in the translated version. There were a couple of pictures that were changed to fit the cultural context of the Arabic textbooks readers. It is noted that a picture of a mother was changed to a picture of a father in the traditional costume in the translated version. Another incident was that the life cycle of a goat was used in the Arabic textbook instead of the life cycle of a panda or of the chicken.





<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 2 Semester: 2				
		Textbook Title: العلوم				
		Chapter Title: نظرة الى المادة				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>Criterion/Indicator</b>						
<b>12. Agreement of the translated Arabic book with that of the English book</b>						
12.1. Definitions and explanations in the chapter				✓		
12.2. Activities included in the chapter				✓		
12.3. Learning objectives						
12.4. Practice exercises						
12.5. Assessment exercises						✓
12.6. Figures, pictures, and illustrations					✓	
<b>13. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
13.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

### General Overview:

The chapter in the original English textbook and the same chapter in the translated Arabic textbook are both titled “Looking at Matter”. However, the lessons in each of those chapters differ.

The 3 lessons in the “Looking at Matter” chapter found in the *original English textbook* are:

- Lesson 1: Describing Matter
- Lesson 2: Solids
- Lesson 3: Liquids and Gases

The 2 lessons in the “Looking at Matter” chapter found in the *translated Arabic version* are:

- Lesson 1: Describing Matter
- Lesson 2: Solids
- Lesson 3: Liquids and Gases

Therefore, the lessons are found in both versions.



**1.7) Definitions and explanations in the chapter:**

All of the definitions of the vocabulary words found in the translated Arabic version are accurately translated from the original English textbook. The “Read together and learn” section at the beginning of each lesson was omitted in the Arabic version.

The explanation found in the translated version was quite similar to that in the original book. However, some of the explanation and examples that were offered in the English textbook were omitted in the Arabic version. Some of those examples were not translated since they address a different cultural background. For example, when explaining about rulers the translated textbook did not include that some rulers measure a unit in inch.

Note: A “Key Vocabulary” sheet is found at the beginning of each chapter in both the English and the Arabic textbooks that defines the new vocabulary words. However, the original English textbook provides the page number where each word appears unlike the Arabic translated version. In addition, other new words that are not defined in the “Key Vocabulary” sheet in the English textbook are written under a section called “More Vocabulary” and their page numbers are also provided. This is not observed in the Arabic version.

**1.8) Activities included in the chapter:**

In general, the original English textbook contains 6 activities which have been found to be accurately translated and evident in the Arabic textbook. Please check the photocopied chapter.

Note: The original English textbook includes “Reading in Science: Natural or made by people?” on page 306 and 307, “Writing in Science: Fun in water” on page 314, and “I read to review: Matter All Around” on pages 316-319. All of those activities were not found in the Arabic translated textbook. However, “Math in Science: Which has more volume?” on page 315 was accurately translated in to Arabic but with a minor change. The Arabic textbook changed the name “Matt” in to “Said” and they took out the part where students were asked to write a number sentence that shows how they found the answer.

**1.11) Assessment Exercises:**

Different assessment exercises are found within the lessons that are questions to assess students’ knowledge. Other assessment exercises are located at the end of each lesson titled “Think, Talk, and Write” and “Chapter Review”.

The assessment questions have been accurately translated and were evident in the Arabic textbook.

**1.12) Figures, pictures, and illustrations:**

Most of the pictures and illustrations were present in the translated version. There were a couple of pictures that were changed to fit the cultural context of the Arabic textbooks readers. It was found that a picture of a dog in the English textbook was changed into a picture of a rabbit in the translated version. Another example of changing the picture in the Arabic version to meet the cultural background of Gulf students was replacing a picture of a shoe with a book. Finally, pictures of girls in the original textbook were changed to male pictures but they were both doing the same activity.



## Science Report Grade 2 Term 1

The following report is an evaluation of science books in grade 1 (first term) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Three chapters out of six chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 1: Plants; (2) chapter 3: A look at the habitats; and (3) chapter 5: Land and water. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

- **Philosophy of the book:**

***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Interpret pictures
  - Scientific reading
  - Scientific writing
  - Drawing
  - Model construction
- Integrating science with various branches of knowledge, with real world and everyday life situations, and with health, art, and societal issues.



**Activity Book: emphasis on:**

- Performing activities that deepens students' scientific knowledge
- Increase students' research skills and survey
- Improving students' attitudes towards and interests in science and scientists

**Evaluation:**

The content of the chapters, activities, practice exercises, assessment exercises, and skills are mostly aligned with the philosophy that was presented at the beginning of the book. However, it was clear that the content of the chapters, activities, practice exercises, assessment exercises, and skills also do not tackle worldwide advancements. As for the learning objectives in all the chapters examined, it was evident that the scientific method, mental and practical skills, and the worldwide advancements are not part of the objectives as has been claimed in the philosophy. Furthermore, all the learning objectives in the three chapters belonged to level 1 and 2 of Blooms since most of them focus on memory and recall. However, two lessons that are titled "scientific skills" and "scientific method" are found at the beginning of students' textbook term 1. The objective of those lessons is to explain the scientific skills and scientific method to the students for example توضيح الخطوات التي يستخدمها العلماء لاستقصاء الاسئلة. Finally, the Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.

As for the Students' workbook, it is not divided into chapters which are aligned with the science textbook and no titles are found at the beginning of each lesson. Moreover, redundancy in the activities between the workbook and the textbook were evident in all the chapters that were examined (please check the book evaluation forms).

- **Suitability of the Arabic language:** In general, the Arabic language is suitable for the second graders. The technical terms are well defined at the beginning of each chapter using simple Arabic language. Most of the new vocabulary words are defined on a Vocabulary sheet that is found at the beginning of each chapter. Moreover, the technical words learned in a lesson are reused in the following lessons of the same chapter.
- **Suitability of the Arabization to serve the science concept:** The illustrations, activities, contents practice exercises, assessment exercises, and skills used in the textbooks serve the science concept of the chapters.
- **Cultural context:** The illustrations found in the textbook are suitable for the cultural context. Only male pictures are used in the students' textbook.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 2			
		Textbook Title: العلوم			
		Chapter Title: النباتات			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>14. Alignment of the translated texts to the philosophy of the original textbook</b>					
14.1.	<i>Content of the Chapter</i>			✓	
14.2.	<i>Activities included in the chapter</i>			✓	
14.3.	<i>Learning objectives</i>		✓		
14.4.	<i>Practice exercises</i>				
14.5.	<i>Assessment exercises</i>				✓
14.6.	<i>Skills</i>				✓
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3					
1.3) The learning objectives are not aligned with the philosophy of the book that states the importance of the scientific method. All the learning objectives are at Level 1 and 2 of bloom's Taxonomy that mainly focus on recall and none of them focuses on the importance of the scientific method for example يتعرف مراحل دورة حياة النبات					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>7. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
7.1.	<i>Length of sentences</i>				✓
7.2.	<i>Complexity of sentences</i>			✓	
7.3.	<i>Diversity of language structures</i>			✓	
7.4.	<i>Number of concepts per chapter</i>			✓	
7.5.	<i>Reuse of technical terms in subsequent chapters</i>			✓	
7.6.	<i>Clarity of definitions of technical terms</i>		✓		
7.7.	<i>Using concrete examples to illustrate concepts</i>				✓
7.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3					

2.6) Not all the technical terms are defined on the Vocabulary Sheet that is found at the beginning of each chapter (Students' Textbook page 17). For example, the word "oxygen" was introduced in the first lesson (Students' Textbook page 23).

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>13. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>13.1. Illustrations</i>			✓	
<i>13.2. Content</i>			✓	
<i>13.3. Activities</i>				✓
<i>13.4. Practice Exercises</i>				
<i>13.5. Assessment exercises</i>				✓
<i>13.6. Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

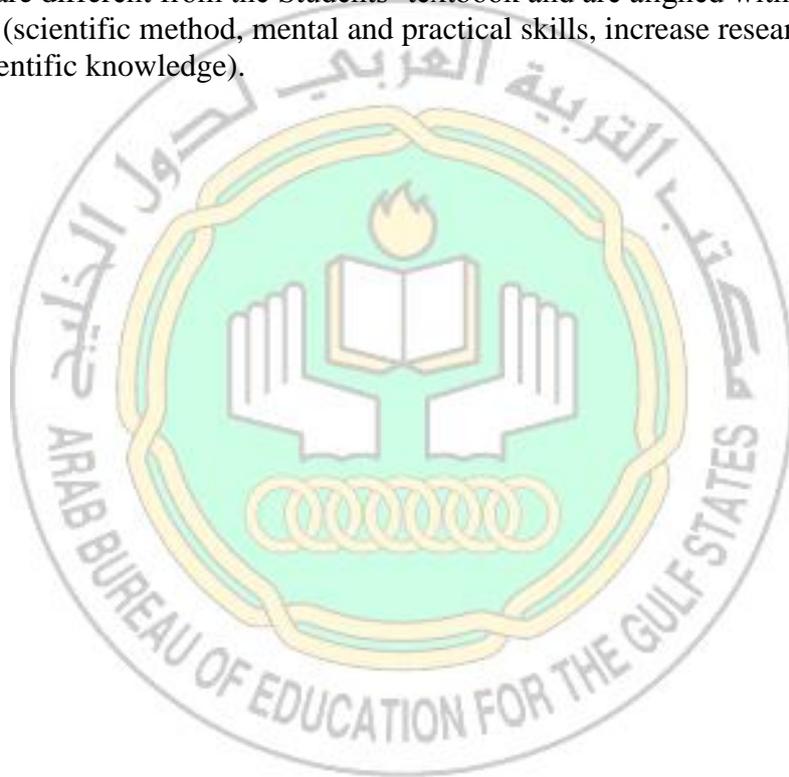
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>4. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>4.1. Illustrations</i>			✓	
<i>4.2. Content</i>			✓	
<i>4.3. Activities</i>				✓
<i>4.4. Practice Exercises</i>				
<i>4.5. Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				



Comments and explanation on implementing the indicator.

Additional indicators and other comments.

2. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
3. The Learning Objectives are not found in the Students' Textbooks as they are only found in the Teachers' Guide.
4. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
5. Redundancy in the activities between the workbook and the textbook (please check page 19 of the textbook and page 4 of the workbook, similarly check page 25 of the textbook and page 7 of the workbook). However, the other four practice exercises in the Students' Workbook are different from the Students' textbook and are aligned with the philosophy of the book (scientific method, mental and practical skills, increase research skills, and deepens scientific knowledge).





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 2			
		Textbook Title: العلوم			
		Chapter Title: نظرة الى المواطن			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>15. Alignment of the translated texts to the philosophy of the original textbook</b>					
15.1.	<i>Content of the Chapter</i>			✓	
15.2.	<i>Activities included in the chapter</i>				✓
15.3.	<i>Learning objectives</i>	✓			
15.4.	<i>Practice exercises</i>				
15.5.	<i>Assessment exercises</i>			✓	
15.6.	<i>Skills</i>			✓	
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives are not aligned with the philosophy of the book that states the importance of the scientific method. All the learning objectives are at Level 1 and 2 of bloom's Taxonomy that mainly focus on recall and none of them focuses on the importance of the scientific method for example يصف السلسلة الغذائية</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>8. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
8.1.	<i>Length of sentences</i>			✓	
8.2.	<i>Complexity of sentences</i>			✓	
8.3.	<i>Diversity of language structures</i>			✓	
8.4.	<i>Number of concepts per chapter</i>				✓
8.5.	<i>Reuse of technical terms in subsequent chapters</i>			✓	
8.6.	<i>Clarity of definitions of technical terms</i>				✓
8.7.	<i>Using concrete examples to illustrate concepts</i>				✓



8.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>14. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
14.1. <i>Illustrations</i>			✓	
14.2. <i>Content</i>			✓	
14.3. <i>Activities</i>			✓	
14.4. <i>Practice Exercises</i>				
14.5. <i>Assessment exercises</i>			✓	
14.6. <i>Skills</i>			✓	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>5. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
5.1. <i>Illustrations</i>			✓	
5.2. <i>Content</i>			✓	
5.3. <i>Activities</i>			✓	
5.4. <i>Practice Exercises</i>				
5.5. <i>Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

6. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
7. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
8. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.



9. Redundancy in the activities between the workbook and the textbook (please check page 55 of the textbook and page 19 of the workbook, similarly check page 61 of the textbook and page 22 of the workbook). Only one new activity was found in the workbook page 21.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 2			
		Textbook Title: العلوم			
		Chapter Title: اليابسة و الماء			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>16. Alignment of the translated texts to the philosophy of the original textbook</b>					
16.1.	<i>Content of the Chapter</i>			✓	
16.2.	<i>Activities included in the chapter</i>			✓	
16.3.	<i>Learning objectives</i>		✓		
16.4.	<i>Practice exercises</i>				
16.5.	<i>Assessment exercises</i>			✓	
16.6.	<i>Skills</i>			✓	
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives are not aligned with the philosophy of the book that states the importance of the scientific method. All the learning objectives are at Level 1 and 2 of bloom's Taxonomy that mainly focus on recall and none of them focuses on the importance of the scientific method for example <i>يصف ماذا توضحه الخرائط</i></p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>9. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
9.1.	<i>Length of sentences</i>			✓	
9.2.	<i>Complexity of sentences</i>			✓	
9.3.	<i>Diversity of language structures</i>			✓	
9.4.	<i>Number of concepts per chapter</i>			✓	
9.5.	<i>Reuse of technical terms in subsequent chapters</i>				✓
9.6.	<i>Clarity of definitions of technical terms</i>				✓
9.7.	<i>Using concrete examples to illustrate concepts</i>				✓
9.8.	<i>Absence of terms and sentences with no</i>				✓



<i>educational benefit (redundancy)</i>				
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>15. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
15.1. Illustrations				✓
15.2. Content			✓	
15.3. Activities			✓	
15.4. Practice Exercises				
15.5. Assessment exercises			✓	
15.6. Skills			✓	

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>6. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
6.1. Illustrations			✓	
6.2. Content			✓	
6.3. Activities			✓	
6.4. Practice Exercises				
6.5. Assessment exercises			✓	

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

10. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
11. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
12. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
13. Redundancy in the activities between the workbook and the textbook (please check page 87 of the textbook and page 32 of the workbook, similarly check page 91 of the textbook and page 34 of the workbook). Only one new activity was found in the workbook page 36.



## Science Report Term 2

The following report is an evaluation of science books in grade 1(secondterm) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Three chapters out of six chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 8: Earth and Space; (2) chapter 10: Changes of Matter; and (3) chapter 5: Using Energy. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

- **Philosophy of the book:**

***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Interpret pictures
  - Scientific reading
  - Scientific writing
  - Drawing
  - Model construction
- Integrating science with various branches of knowledge, with real world and everyday life situations, and with health, art, and societal issues.

***Activity Book: emphasis on:***

- Performing activities that deepens students' scientific knowledge
- Increase students' research skills and survey



- Improving students' attitudes towards and interests in science and scientists

### **Evaluation:**

The content of the chapters, activities, practice exercises, assessment exercises, and skills are mostly aligned with the philosophy that was presented at the beginning of the book. However, it was clear that the content of the chapters, activities, practice exercises, assessment exercises, and skills also do not tackle worldwide advancements. As for the learning objectives in all the chapters examined, it was evident that the scientific method, mental and practical skills, and the worldwide advancements are not part of the objectives as has been claimed in the philosophy. Furthermore, all the learning objectives in the three chapters belonged to level 1 and 2 of Blooms since most of them focus on memory and recall. Finally, the Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.

As for the Students' workbook, it is not divided into chapters which are aligned with the science textbook and no titles are found at the beginning of each lesson. Moreover, redundancy in the activities between the workbook and the textbook were evident in all the chapters that were examined (please check the book evaluation forms).

- **Suitability of the Arabic language:** In general, the Arabic language is suitable for the second graders. The technical terms are well defined at the beginning of each chapter using simple Arabic language. However, not all of the new vocabulary words are defined on a Vocabulary sheet that is found at the beginning of each chapter. For example, the word "evaporation", which the students haven't been exposed to in a scientific context before, is introduced in the middle of the chapter 10. Moreover, the technical words learned in a lesson are reused in the following lessons of the same chapter.
- **Suitability of the Arabization to serve the science concept:** The illustrations, activities, contents practice exercises, assessment exercises, and skills used in the textbooks serve the science concept of the chapters.
- **Cultural context:** The illustrations found in the textbook are suitable for the cultural context. Both male and female pictures are used in the students' textbooks. Finally, male and female names were neither used in the students' textbook nor in their workbook.



<b>Book Evaluation Form</b>	Subject: Science			
	Grade: Grade 2			
	Textbook Title: العلوم			
	Chapter Title: الارض و الفضاء			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>17. Alignment of the translated texts to the philosophy of the original textbook</b>				
17.1.	Content of the Chapter		✓	
17.2.	Activities included in the chapter		✓	
17.3.	Learning objectives	✓		
17.4.	Practice exercises			
17.5.	Assessment exercises		✓	
17.6.	Skills		✓	
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3				
1.3) Even though the philosophy of the book emphasizes on teaching the students the scientific method, the learning objectives are not aligned with this statement. The learning objectives that are found in the teachers' guide only focus on recall and comprehension level (level 1 and 2 of Bloom's Taxonomy) for example يوضح كيف يتغير الظل عندما تتحرك الارض.				
<b>10. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
10.1.	Length of sentences		✓	
10.2.	Complexity of sentences		✓	
10.3.	Diversity of language structures		✓	
10.4.	Number of concepts per chapter			✓
10.5.	Reuse of technical terms in subsequent chapters		✓	
10.6.	Clarity of definitions of technical terms			✓
10.7.	Using concrete examples to illustrate concepts			✓
10.8.	Absence of terms and sentences with no educational benefit (redundancy)			✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>16. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
16.1. <i>Illustrations</i>				✓
16.2. <i>Content</i>			✓	
16.3. <i>Activities</i>			✓	
16.4. <i>Practice Exercises</i>				
16.5. <i>Assessment exercises</i>			✓	
16.6. <i>Skills</i>			✓	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>7. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
7.1. <i>Illustrations</i>				✓
7.2. <i>Content</i>				✓
7.3. <i>Activities</i>			✓	
7.4. <i>Practice Exercises</i>				
7.5. <i>Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

14. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
15. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
16. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
17. Redundancy in the activities between the workbook and the textbook (please check page 29 of the textbook and page 15 of the workbook, similarly check page 35 of the textbook and page 19 of the workbook). Two new activities were added in the workbook pages 17 and 20.



<b>Book Evaluation Form</b>	Subject: Science			
	Grade: Grade 2			
	Textbook Title: العلوم			
	Chapter Title: تغيرات المادة			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>18. Alignment of the translated texts to the philosophy of the original textbook</b>				
18.1.	Content of the Chapter		✓	
18.2.	Activities included in the chapter		✓	
18.3.	Learning objectives	✓		
18.4.	Practice exercises			
18.5.	Assessment exercises		✓	
18.6.	Skills		✓	
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3				
1.3) The learning objectives are not aligned with the philosophy of the book that states the importance of teaching the students about the scientific method. Moreover, the learning objectives are at level 1 and 2 of Bloom's Taxonomy for example يلاحظ كيف تغير الحرارة المادة.				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>11. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
11.1.	Length of sentences		✓	
11.2.	Complexity of sentences		✓	
11.3.	Diversity of language structures		✓	
11.4.	Number of concepts per chapter		✓	
11.5.	Reuse of technical terms in subsequent chapters		✓	
11.6.	Clarity of definitions of technical terms		✓	
11.7.	Using concrete examples to illustrate concepts			✓
11.8.	Absence of terms and sentences			✓



<i>with no educational benefit (redundancy)</i>				
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				
2.6) Not all the new vocabulary words are defined on the vocabulary sheet at the beginning of the chapter. The word “evaporation”, which the students haven’t been exposed to in a scientific context before, is introduced in the middle of the chapter.				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>17. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>17.1. Illustrations</i>				✓
<i>17.2. Content</i>			✓	
<i>17.3. Activities</i>			✓	
<i>17.4. Practice Exercises</i>				
<i>17.5. Assessment exercises</i>			✓	
<i>17.6. Skills</i>			✓	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>8. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>8.1. Illustrations</i>			✓	
<i>8.2. Content</i>			✓	
<i>8.3. Activities</i>			✓	
<i>8.4. Practice Exercises</i>				
<i>8.5. Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

18. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
19. The Learning Objectives are not found in Students’ Textbooks as they are only found in the Teachers’ Guide.



20. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
21. Redundancy in the activities between the workbook and the textbook (please check page 69 of the textbook and page 30 of the workbook, similarly check page 73 of the textbook and page 33 of the workbook). Two new activities were added in the workbook pages 32 and 35.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 2			
		Textbook Title: العلوم			
		Chapter Title: استعمال الطاقة			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>19. Alignment of the translated texts to the philosophy of the original textbook</b>					
19.1.	<i>Content of the Chapter</i>			✓	
19.2.	<i>Activities included in the chapter</i>			✓	
19.3.	<i>Learning objectives</i>	✓			
19.4.	<i>Practice exercises</i>				
19.5.	<i>Assessment exercises</i>			✓	
19.6.	<i>Skills</i>			✓	
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives are not aligned with the philosophy of the book since they do not tackle the scientific method and the mental and practical skills. There are only two learning objectives for this chapter that belong to level 1 and 2 of Bloom's Taxonomy for example the learning objective of the first lesson is يتعرف ان الشمس تزود الارض بالحرارة و الطاقة even though students are going to learn the definition of energy, heat, temperature, and gas and about the different ways people use heat and gas in the content of the chapter.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>12. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
12.1.	<i>Length of sentences</i>			✓	
12.2.	<i>Complexity of sentences</i>			✓	
12.3.	<i>Diversity of language structures</i>			✓	
12.4.	<i>Number of concepts per chapter</i>		✓		
12.5.	<i>Reuse of technical terms in subsequent chapters</i>			✓	
12.6.	<i>Clarity of definitions of technical terms</i>		✓		



12.7. <i>Using concrete examples to illustrate concepts</i>			✓	
12.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>				✓

Illustrate by at last one example any indicator of criterion 2 given a score of less than 3

2.4) In the first lesson of this chapter that is titled “Heat”, students learn about energy, heat, gas, and temperature in three pages. “Discovering Electricity”, which is a two page second lesson of this chapter, exposes students to static electricity, current, and open and closed circuits for the first time.

2.6) The vocabulary words that are defined on the Vocabulary sheet that is found at the beginning of each chapter include gas, circuit, and current. However, the content of the chapter introduces new vocabulary words that students haven’t been exposed to that include energy, heat, temperature, and static electricity. Finally, the textbook doesn’t define temperature and how it is different from heat. An activity on page 104 in the Students’ Textbook introduces the word temperature.

Note: The word “heat” has been used in Chapter 10 but without a definition even though evaporation, condensation, and melting were explained using this word. The definition of this new vocabulary word was defined later in Chapter 12.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>18. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
18.1. <i>Illustrations</i>			✓	
18.2. <i>Content</i>			✓	
18.3. <i>Activities</i>			✓	
18.4. <i>Practice Exercises</i>				
18.5. <i>Assessment exercises</i>			✓	
18.6. <i>Skills</i>			✓	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>9. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
9.1. <i>Illustrations</i>				✓
9.2. <i>Content</i>			✓	

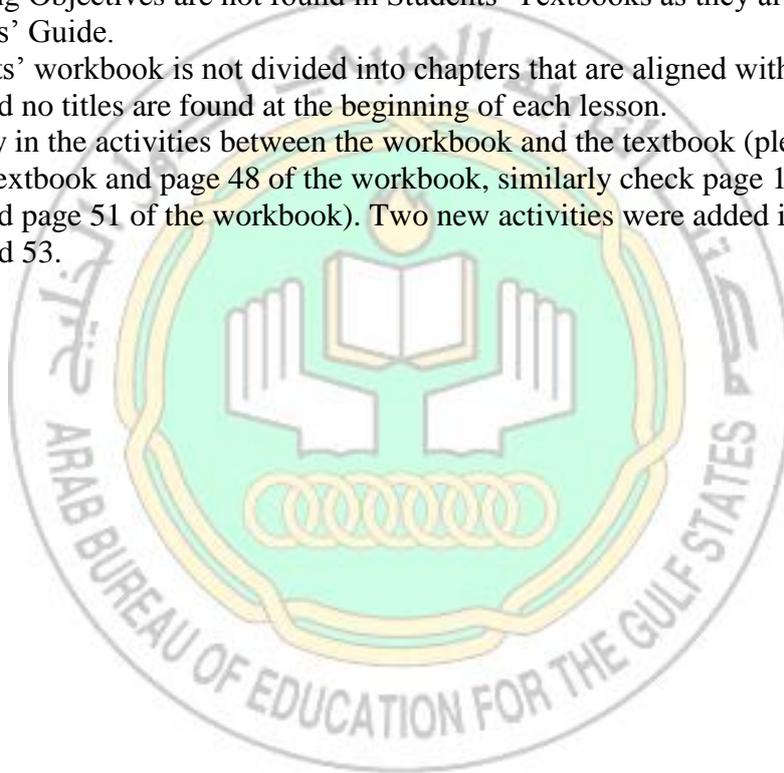


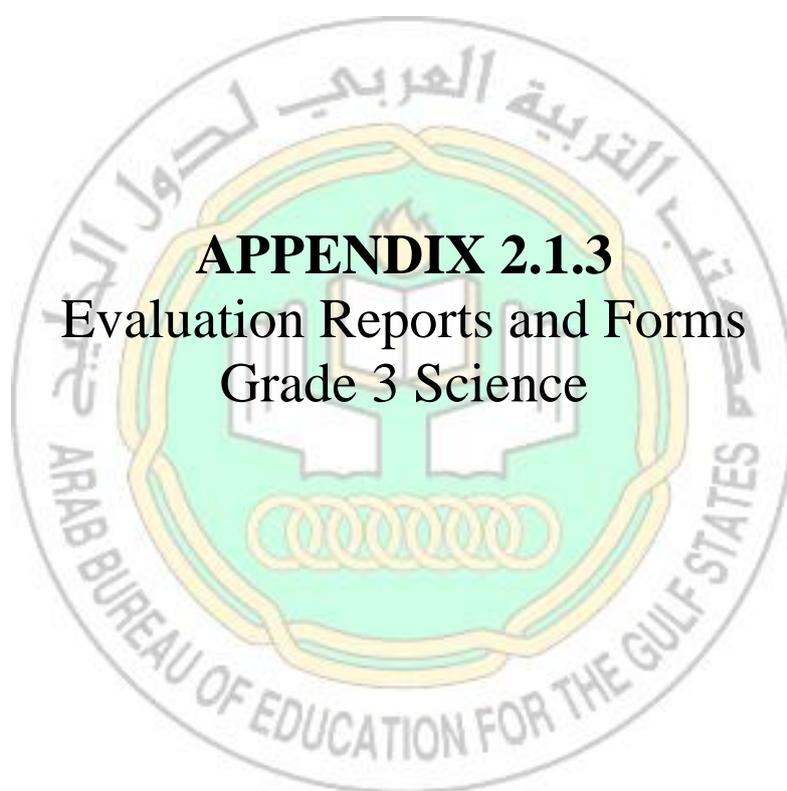
9.3. <i>Activities</i>			✓	
9.4. <i>Practice Exercises</i>				
9.5. <i>Assessment exercises</i>			✓	
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

22. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
23. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
24. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
25. Redundancy in the activities between the workbook and the textbook (please check page 101 of the textbook and page 48 of the workbook, similarly check page 107 of the textbook and page 51 of the workbook). Two new activities were added in the workbook pages 50 and 53.





**APPENDIX 2.1.3**  
Evaluation Reports and Forms  
Grade 3 Science



### Table of Contents - Grade 3

Chapters	Original English Version	Translated Arabic Version
1	A Look at Living Things	A Look at Living Things
2	Living Things Grow and Change	Living Things Grow and Change
3	Living Things in Ecosystems	Living Things in the Ecosystem
4	Changes in Ecosystems	Changes in Ecosystem
5	Earth Changes	Earth Changes
6	<i>Using Earth's Resources</i>	Earth's Resources
7	Changes in Weather	Changes in Weather
8	<i>Planets, Moons, and Stars</i>	<i>Water Cycle and Weather</i>
9	Observing Matter	Observing Matter
10	Changes in Matter	Changes in Matter
11	Forces and Motion	Forces and Motion
12	Forms of Energy	Forms of Energy

The table of contents of the translated Arabic science textbook is not completely aligned with the original English science textbook. As can be seen from the above table, Chapter 6 in the translated version is called “Earth’s Resources” instead of “Using Earth’s Resources” as it was found in the original textbook. Moreover, Chapter 8 “Planets, Moons, and Stars” found in the original English textbook was entirely omitted in the Arabic version and replaced by a chapter called “Water Cycle and Weather”. From the table of contents, it can be noted that the Chapter which was added to the translated version was originally Lesson 2 and Lesson 3 in Chapter 7 “Changes in Weather” from the original textbook.

There is a trend to integrate lessons of a chapter in the Arabic version and to entirely omit a lesson found in a chapter. Moreover, most of the inquiry activities, inquiry skill building activities, reading in science, math in science, and careers in science found in the English version are totally missing in the Arabic textbook. Finally, the English textbooks include two pages titled “Unit literature” before starting a new unit. Those “Unit literature” were entirely omitted in the Arabic version.

However, the Arabic textbook added the scientific method, scientific skills, and safety instructions at the beginning of the table of contents which were not found in the original textbook. Moreover, a student’s resources at the end of the second semester that includes vocabulary, scientific tools... was also added in the translated version.

Note: The philosophy of the book that is found in the translated Arabic version at the beginning of students’ textbook is not written in the original English science textbook.



<b>Book Evaluation Form</b>	Subject: Science				
	Grade: 3 Semester: 1				
	Textbook Title: العلوم				
	Chapter Title: التغيرات في النظام البيئي				
	Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>Criterion/Indicator</b>					
<b>20. Agreement of the translated Arabic book with that of the English book</b>					
20.1.	Definitions and explanations in the chapter		✓		
20.2.	Activities included in the chapter			✓	
20.3.	Learning objectives				
20.4.	Practice exercises				
20.5.	Assessment exercises		✓		
20.6.	Figures, pictures, and illustrations			✓	
<b>21. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>					
21.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.					

### General Overview:

The chapter in the original English textbook and the same chapter in the translated Arabic textbook are both titled “Changes in Ecosystems”. However, the lessons in each of those chapters differ.

The 3 lessons in the “Changes in Ecosystems” chapter found in the *original English textbook* are:

- Lesson 1: Living Things Change Their Environment
- Lesson 2: Changes Affect Living Things
- Lesson 3: Living Things of the Past

The 2 lessons in the “Changes in Ecosystems” chapter found in the *translated Arabic version* are:

- Lesson 1: Living Things Change Their Environment
- Lesson 2: Changes Affect Living Things



Therefore, lesson 3 “Living Things of the Past” in the original English textbook is completely omitted in the translated Arabic version.

### **1.9) Definitions and explanations in the chapter:**

Most of the definitions of the vocabulary words found in the translated Arabic version are accurately translated from the original English textbook. However, some of the words are omitted in the translated version. For example, the words “population” and “community” that were found in the Lesson 2 of the original version were not mentioned in the translated textbook since the translators skipped the whole paragraph that explains the ways environmental changes affects an entire community (please check page 166 and 167 in the original textbook). Other vocabulary words that were not mentioned in the Arabic version are the words “fossil” and “extinct”. This is due to the fact that the translated version didn’t include the Lesson 3 “Living Things of the Past” found in the original English textbook. This may be due to cultural differences between the two textbooks.

Moreover, some of the explanation that is found in the original English textbook is missing in the translated Arabic version (students’ textbook and workbook). Please check the photocopied chapter.

Note: A “Key Vocabulary” sheet is found at the beginning of each chapter in both the English and the Arabic textbooks that defines the new vocabulary words. However, the original English textbook provides the page number where each word appears unlike the Arabic translated version. In addition, other new words that are not defined in the “Key Vocabulary” sheet in the English textbook are written under a section called “More Vocabulary” and their page numbers are also provided. The undefined new words are observed in the translated version of the textbook but without any page number.

### **1.10) Activities included in the chapter:**

In general, the original English textbook contains 4 activities in the first *two* lessons (not taking into account the 2 activities found in the third lesson since lesson 3 from the original book is completely missing in the translated version) found on pages 151, 155, 161, and 167. All those activities are found in the translated version. However, the activity “How can a flood affect plants?” on page 161 in the original textbook was not accurately translated. The materials in the Arabic version is missing ‘water’.

Note: The original English textbook includes “Focus on Skills” pages 158 and 159, “Math in Science” page 171, “Reading in Science: Looking at Dinosaurs” page 180 and 181, and “Careers in Science” page 184.

The activity “Writing in Science”, on page 170 in the original textbook, is titled “Save the Koala Bear”. In the Arabic version on page 94, a similar activity was found but the content was changed to fit the cultural context.

Note 2: On page 153 of the original textbook, students are given a link to a website so that they will be able to watch how environments change. That website was not found in the translated version.

### **1.13) Assessment Exercises:**

Different assessment exercises are found within the lesson under the title “Quick Check” which consists of two subheading the “Main idea and details” and the “Critical Thinking”. Other assessment exercises are located at the end of each lesson titled “Lesson Review” and at the end of the whole chapter titled “Chapter Review”.

Three “Quick Check” exercises (not taking into account the “Quick Checks” found in the third lesson since lesson 3 from the original book is completely missing in the translated version) are not found in the translated textbook (please check the photocopied chapter). The



“Lesson Review” of the Lesson 1 and Lesson 2 are the same in both the English and Arabic versions (students’ textbook) with a minor change in the social studies link page 169 in the original textbook. Finally, the “Chapter Review” is similar in both the English version and in the Arabic version. However, all questions that tackles Lesson 3 were not included in the translated textbook (please check the photocopied chapter).

**1.14) Figures, pictures, and illustrations:**

Most of the pictures and illustrations are very similar to the original textbook. However, it was evident that some female pictures were changed into male pictures. Other findings have indicated that some pictures of drought were changed from a dry lake in the English textbook to a dry tree in the desert in the translated version. That change may be due to fit the cultural context.





<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 3 Semester: 2				
		Textbook Title: العلوم				
		Chapter Title: ملاحظة المواد				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>Criterion/Indicator</b>						
<b>22. Agreement of the translated Arabic book with that of the English book</b>						
22.1.	<i>Definitions and explanations in the chapter</i>			✓		
22.2.	<i>Activities included in the chapter</i>			✓		
22.3.	<i>Learning objectives</i>					
22.4.	<i>Practice exercises</i>					
22.5.	<i>Assessment exercises</i>			✓		
22.6.	<i>Figures, pictures and illustrations</i>				✓	
<b>23. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
23.1.	For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.					

### **General Overview:**

The chapter in the original English textbook and the same chapter in the translated Arabic textbook are both titled “Observing Matter”. However, the lessons in each of those chapters differ.

The 3 lessons in the “Observing Matter” chapter found in the *original English textbook* are:

- Lesson 1: Properties of Matter
- Lesson 2: Measuring Matter
- Lesson 3: Solids, Liquids and Gases

The 2 lessons in the “Observing Matter” chapter found in the *translated Arabic version* are:

- Lesson 1: Matter and its Measurement
- Lesson 2: Solids, Liquids, and Gases

**1.11)** Lesson 1 and 2 in the original textbook are integrated under lesson 1 in the Arabic version. Definitions and explanations in the chapter:



Most of the definitions of the vocabulary words found in the translated Arabic version are accurately translated from the original English textbook. However, some of the words are omitted in the translated version. For example, the words “gravity” and “weight” that were found in the Lesson 2 of the original version were not mentioned in the translated textbook since the translators skipped the whole paragraph that explains how mass and weight differ (please check page 378 and 379 in the original textbook). Similarly, the word “property” was also omitted in the translated version because the paragraph on property on page 365 is not found in the Arabic textbook. Moreover, some words, like “pan balance” are found within the lesson found in the translated textbooks, but it wasn’t mentioned in the “Key Vocabulary” sheet at the beginning of each chapter.

Additionally, some of the explanation that is found in the original English textbook is missing in the translated Arabic version. A general finding was that the translated version omitted the examples and further explanation that was offered by the original textbook. Moreover, some paragraphs were completely missing in the Arabic textbook. For example, the paragraph about the difference between mass and weight was not found in the translated version. Please check the photocopied chapter.

Note: A “Key Vocabulary” sheet is found at the beginning of each chapter in both the English and the Arabic textbooks that defines the new vocabulary words. However, the original English textbook provides the page number where each word appears unlike the Arabic translated version. In addition, other new words that are not defined in the “Key Vocabulary” sheet in the English textbook are written under a section called “More Vocabulary” and their page numbers are also provided. The undefined new words are observed in the translated version of the textbook but without any page number.

#### **1.12) Activities included in the chapter:**

In general, the original English textbook contains 7 activities found on pages 363, 367, 373, 377, 380, 383, and 387. Only 5 activities were found in the Arabic version while the other 2 are omitted (please check the photocopied chapter). The omitted activities are “Classify matter” page 367 and “How can you measure length?” page 373 in the original textbook.

Note: The original English textbook includes “Reading in Science” page 370 and 371, “Writing in Science” page 390, and “Math in Science” page 391 that are all not included in the translated version. However, the “Focus on Skills” activity on page 380 and 381 in the English textbook was evident and accurately translated in the Arabic version.

#### **1.15) Assessment Exercises:**

Different assessment exercises are found within the lesson under the title “Quick Check” which consists of two subheading the “Main idea and details” and the “Critical Thinking”. Other assessment exercises are located at the end of each lesson titled “Lesson Review” and at the end of the whole chapter titled “Chapter Review”.

Four “Quick Check” exercises are not found in the translated textbook (please check the photocopied chapter). The “Lesson Review” of the Lesson 1 and Lesson 2 in the English version are integrated under one “Lesson Review” in the Arabic version. The integration leads to the omission of a couple of questions that include critical thinking question and test-prep questions. Finally, the “Chapter Review” is similar in both the English version and in



the Arabic version. However, some questions were missing since their explanation in the content of the chapter were not found (please check the photocopied chapter).

**1.16) Figures, pictures, and illustrations:**

In general, the pictures and illustrations that were found in the translated textbooks were similar to the original English book. However, some female pictures were changed into male pictures in the Arabic version while maintaining the similar message of the picture. In other instances, the female pictures in the original textbook were replaced by Arab looking female pictures. Another evident finding was shown when a picture of a chair was placed to explain that solids can be hard or soft in the Arabic version. The original textbook had a picture of a boy playing wearing a helmet and a leg pads. In conclusion, the changes in the pictures were mostly related to cultural differences.





### **Science Report-Grade 3 – semester 1**

The following report is an evaluation of science books in grade 3 (first semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Three chapters out of six chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 1: Knowing living things; (2) chapter 3: Living things in the ecosystem; and (3) chapter 5: Earth changes. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

- **Philosophy of the book:**

***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Interpret pictures
  - Scientific reading
  - Scientific writing
  - Drawing
  - Model construction
- Integrating science with various branches of knowledge, with real world and everyday life situations, and with health, art, and societal issues.

***Activity Book: emphasis on:***

- Performing activities that deepens students' scientific knowledge
- Increase students' research skills and survey
- Improving students' attitudes towards and interests in science and scientists



### **Evaluation:**

The content of the chapters, activities, practice exercises, assessment exercises, and skills are mostly aligned with the philosophy that was presented at the beginning of the book. However, it was clear that the content of the chapters, activities, practice exercises, assessment exercises, and skills also do not tackle worldwide advancements. As for the learning objectives in all the chapters examined, it was evident that the scientific method, mental and practical skills, and the worldwide advancements are not part of the objectives as has been claimed in the philosophy. Furthermore, most the learning objectives in the three chapters belonged to level 1 and 2 of Blooms Taxonomy since most of the objectives focus on recall, knowledge, and comprehension. There isn't any learning objective that tackles neither the scientific method nor the mental and practical skills. However, one lesson titled "the scientific method" is found at the beginning of students' textbook term 1. The objective of this lesson is to explain the scientific method and specify the steps of the scientific method to the students (one of the objectives of this lesson is the following (يحدد خطوات الطريقة العلمية)). Finally, the Learning Objectives are not found in the Students' Textbooks as they are only found in the Teachers' Guide.

As for the Students' workbook, it is not divided into chapters which are aligned with the science textbook and no titles are found at the beginning of each lesson. Moreover, redundancy in the activities between the workbook and the textbook were evident in all the chapters that were examined (please check the book evaluation forms). However, more than one "open inquiry" activity was included in the students' workbooks.

- **Suitability of the Arabic language:** In general, the Arabic language is suitable for the third graders. Most of the new vocabulary words are defined on a Vocabulary sheet that is found at the beginning of each chapter. Moreover, the technical words learned in a lesson are reused in the following lessons of the same chapter. Finally, it is crucial to mention that at the beginning of each lesson in a chapter a new section called "read and learn" is added. This section states the main idea of the lesson, the new vocabulary words that will be learned, and reading skills that can be used (for example: summary, cause-effect...).
- **Suitability of the Arabization to serve the science concept:** The illustrations, activities, contents practice exercises, assessment exercises, and skills used in the textbooks serve the science concept of the chapters.
- **Cultural context:** The illustrations found in the textbook are suitable for the cultural context. Moreover, male and female pictures are used in the students' textbook.



<b>Book Evaluation Form</b>	Subject: Science			
	Grade: Grade 3			
	Textbook Title: العلوم			
	Chapter Title: تعرف المخلوقات الحية			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>24. Alignment of the translated texts to the philosophy of the original textbook</b>				
24.1.	Content of the Chapter		✓	
24.2.	Activities included in the chapter			✓
24.3.	Learning objectives	✓		
24.4.	Practice exercises			
24.5.	Assessment exercises		✓	
24.6.	Skills			✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives are not aligned with the philosophy of the book that states the importance of teaching the students the scientific method and the mental and practical skills. For those objectives mainly target knowledge and recall which are at the first level of Bloom's Taxonomy (for example يصف ما تحتاج اليه المخلوقات الحية لتتمكن من البقاء من البقاء). However, only one learning objective out of three is at the fourth level of Bloom's Taxonomy يقارن بين المخلوقات الحية و الاشياء غير الحية.</p>				
<b>13. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
13.1.	Length of sentences		✓	
13.2.	Complexity of sentences		✓	
13.3.	Diversity of language structures		✓	
13.4.	Number of concepts per chapter		✓	
13.5.	Reuse of technical terms in subsequent chapters		✓	
13.6.	Clarity of definitions of technical terms			✓
13.7.	Using concrete examples to illustrate concepts			✓
13.8.	Absence of terms and sentences with no educational benefit (redundancy)			✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>19. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
19.1. <i>Illustrations</i>			✓	
19.2. <i>Content</i>				✓
19.3. <i>Activities</i>				✓
19.4. <i>Practice Exercises</i>				
19.5. <i>Assessment exercises</i>			✓	
19.6. <i>Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>10. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
10.1. <i>Illustrations</i>				✓
10.2. <i>Content</i>			✓	
10.3. <i>Activities</i>			✓	
10.4. <i>Practice Exercises</i>				
10.5. <i>Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

26. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
27. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
28. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
29. Redundancy in the activities between the workbook and the textbook (please check page 23, 28, 31, 33, 36, and 37 of the textbook and page 7, 9, 10, 12, 13, and 15 of the workbook, consecutively). Three new activities were found in the students' workbook that were titled "open inquiry" (please check pages 8, 11, and 16).



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 3			
		Textbook Title: العلوم			
		Chapter Title: المخلوقات الحية في النظام البيئي			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>25. Alignment of the translated texts to the philosophy of the original textbook</b>					
25.1.	<i>Content of the Chapter</i>			✓	
25.2.	<i>Activities included in the chapter</i>				✓
25.3.	<i>Learning objectives</i>		✓		
25.4.	<i>Practice exercises</i>				
25.5.	<i>Assessment exercises</i>			✓	
25.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives are not aligned with the philosophy of the book that emphasizes the importance of teaching the scientific method and mental and practical skills. Most of the learning objectives are at the first and second level of Bloom's Taxonomy for example يعرف النظام البيئي.</p> <p>Only one learning objective (out of the 5 objectives found in this chapter) is at the fourth level of Bloom's Taxonomy يتعرف عملية انتقال الطاقة عبر السلسلة الغذائية.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>14. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
14.1.	<i>Length of sentences</i>			✓	
14.2.	<i>Complexity of sentences</i>			✓	
14.3.	<i>Diversity of language structures</i>			✓	
14.4.	<i>Number of concepts per chapter</i>			✓	
14.5.	<i>Reuse of technical terms in subsequent chapters</i>				✓
14.6.	<i>Clarity of definitions of technical terms</i>				✓
14.7.	<i>Using concrete examples to</i>				✓



<i>illustrate concepts</i>				
14.8. Absence of terms and sentences with no educational benefit (redundancy)				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>20. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
20.1. Illustrations				✓
20.2. Content			✓	
20.3. Activities			✓	
20.4. Practice Exercises				
20.5. Assessment exercises			✓	
20.6. Skills			✓	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>11. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
11.1. Illustrations				✓
11.2. Content			✓	
11.3. Activities			✓	
11.4. Practice Exercises				
11.5. Assessment exercises			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

30. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
31. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
32. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.



33. Redundancy in the activities between the workbook and the textbook (please check page 61, 65, 71, 73, 76, and 77 of the textbook and page 23, 25, 26, 28, 29, and 31 of the workbook, consecutively). Two new activities were found in the students' workbook that were titled "open inquiry" (please check pages 24 and 27).





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 3			
		Textbook Title: العلوم			
		Chapter Title: الارض تتغير			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>26. Alignment of the translated texts to the philosophy of the original textbook</b>					
26.1.	<i>Content of the Chapter</i>			✓	
26.2.	<i>Activities included in the chapter</i>				✓
26.3.	<i>Learning objectives</i>		✓		
26.4.	<i>Practice exercises</i>				
26.5.	<i>Assessment exercises</i>			✓	
26.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) the learning objectives are not aligned with the philosophy of the book that states the importance of teaching the scientific method and the practical and mental skills. The learning objectives only focus on knowledge, comprehension, and recall which belong to the first two levels in Bloom's Taxonomy. (example: يصف الزلازل و البراكين و يحدد اثارها)</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>15. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
15.1.	<i>Length of sentences</i>			✓	
15.2.	<i>Complexity of sentences</i>			✓	
15.3.	<i>Diversity of language structures</i>			✓	
15.4.	<i>Number of concepts per chapter</i>			✓	
15.5.	<i>Reuse of technical terms in subsequent chapters</i>				✓
15.6.	<i>Clarity of definitions of technical terms</i>				✓
15.7.	<i>Using concrete examples to illustrate concepts</i>				✓



15.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>				✓
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>21. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
21.1. <i>Illustrations</i>				✓
21.2. <i>Content</i>			✓	
21.3. <i>Activities</i>				✓
21.4. <i>Practice Exercises</i>				
21.5. <i>Assessment exercises</i>			✓	
21.6. <i>Skills</i>			✓	
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>12. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
12.1. <i>Illustrations</i>			✓	
12.2. <i>Content</i>			✓	
12.3. <i>Activities</i>			✓	
12.4. <i>Practice Exercises</i>				
12.5. <i>Assessment exercises</i>			✓	
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

34. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
35. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
36. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.



37. Redundancy in the activities between the workbook and the textbook (please check page 101, 103, 107, and 110 of the textbook and page 38, 40, 41, and 43 of the workbook, consecutively). Two new activities were found in the students' workbook that were titled "open inquiry" (please check pages 39 and 42).





## **Science Report Grade 3 semester 2**

The following report is an evaluation of science books in grade 3(second semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Three chapters out of six chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 8: The water cycle and climate; (2) chapter 10: Changes in matter; and (3) chapter 12: Different types of energy. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **• Philosophy of the book:**

#### ***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Interpret pictures
  - Scientific reading
  - Scientific writing
  - Drawing
  - Model construction
- Integrating science with various branches of knowledge, with real world and everyday life situations, and with health, art, and societal issues.

#### ***Activity Book: emphasis on:***

- Performing activities that deepens students' scientific knowledge
- Increase students' research skills and survey
- Improving students' attitudes towards and interests in science and scientists



### ***Evaluation:***

The content of the chapters, activities, practice exercises, assessment exercises, and skills are mostly aligned with the philosophy that was presented at the beginning of the book. However, it was clear that the content of the chapters, activities, practice exercises, assessment exercises, and skills also do not tackle worldwide advancements. As for the learning objectives in all the chapters examined, it was evident that the scientific method, mental and practical skills, and the worldwide advancements are not part of the objectives as has been claimed in the philosophy. Furthermore, most the learning objectives in the three chapters belonged to level 1 and 2 of Blooms Taxonomy indicating that it is not aligned with the philosophy of the book. However, each chapter had one learning objective that was either at the fourth or sixth level of Bloom's Taxonomy. Finally, there isn't any learning objective in the examined chapters that tackles neither the scientific method nor the mental and practical skills. Most of the objectives focus on recall, knowledge, and comprehension. Finally, the Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.

As for the Students' workbook, it is not divided into chapters which are aligned with the science textbook and no titles are found at the beginning of each lesson. Moreover, redundancy in the activities between the workbook and the textbook were evident in all the chapters that were examined (please check the book evaluation forms). However, more than one "open inquiry" activity was included in the students' workbooks.

- **Suitability of the Arabic language:** In general, the Arabic language is suitable for the third graders. Most of the new vocabulary words are defined on a Vocabulary sheet that is found at the beginning of each chapter. Moreover, the technical words learned in a lesson are reused in the following lessons of the same chapter. Finally, it is crucial to mention that at the beginning of each lesson in a chapter a new section called "read and learn" is added. This section states the main idea of the lesson, the new vocabulary words that will be learned, and reading skills that can be used (for example: summary, cause-effect...).
- **Suitability of the Arabization to serve the science concept:** The illustrations, activities, contents practice exercises, assessment exercises, and skills used in the textbooks serve the science concept of the chapters.
- **Cultural context:** The illustrations found in the textbook are suitable for the cultural context. Moreover, male and female pictures are used in the students' textbook.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 3			
		Textbook Title: العلوم			
		Chapter Title: دورة الماء و المناخ			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>27. Alignment of the translated texts to the philosophy of the original textbook</b>					
27.1.	<i>Content of the Chapter</i>			✓	
27.2.	<i>Activities included in the chapter</i>			✓	
27.3.	<i>Learning objectives</i>		✓		
27.4.	<i>Practice exercises</i>				
27.5.	<i>Assessment exercises</i>			✓	
27.6.	<i>Skills</i>			✓	
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives are not aligned with the philosophy of the book that states the importance of teaching the scientific method and the practical and mental skills. The learning objectives only focus on knowledge, comprehension, and recall which belong to the first two levels in Bloom's Taxonomy for example يرتباطها بالطقس و يصف دورة المياه و ارتباطها بالطقس. However, there is one learning objective that is at the sixth level of blooms taxonomy that is: يستنتج كيف يحدث التكثف و كيف يتشكل المطر في الغلاف الجوي.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>16. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
16.1.	<i>Length of sentences</i>			✓	
16.2.	<i>Complexity of sentences</i>			✓	
16.3.	<i>Diversity of language structures</i>			✓	
16.4.	<i>Number of concepts per chapter</i>			✓	
16.5.	<i>Reuse of technical terms in subsequent chapters</i>				✓
16.6.	<i>Clarity of definitions of technical terms</i>				✓
16.7.	<i>Using concrete examples to</i>				✓



<i>illustrate concepts</i>				
16.8. Absence of terms and sentences with no educational benefit (redundancy)				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>22. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
22.1. Illustrations			✓	
22.2. Content			✓	
22.3. Activities			✓	
22.4. Practice Exercises				
22.5. Assessment exercises			✓	
22.6. Skills			✓	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>13. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
13.1. Illustrations			✓	
13.2. Content			✓	
13.3. Activities				✓
13.4. Practice Exercises				
13.5. Assessment exercises			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

38. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
39. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
40. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.



41. Redundancy in the activities between the workbook and the textbook (please check page 31, 33, 39, and 43 of the textbook and page 12, 14, 15, and 17 of the workbook, consecutively). Two new activities were found in the students' workbook that were titled "open inquiry" (please check pages 13 and 16).







<i>terms</i>				
17.7. <i>Using concrete examples to illustrate concepts</i>				✓
17.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>		✓		
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				
2.8) The same sentence, that was explaining how evaporation is a method used to separate components from each other for example water and salt solution, was repeated two different times under two different subheadings (please check students' textbook pages 81 and 82).				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>23. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
23.1. <i>Illustrations</i>			✓	
23.2. <i>Content</i>			✓	
23.3. <i>Activities</i>			✓	
23.4. <i>Practice Exercises</i>				
23.5. <i>Assessment exercises</i>			✓	
23.6. <i>Skills</i>			✓	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>14. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
14.1. <i>Illustrations</i>				✓
14.2. <i>Content</i>			✓	
14.3. <i>Activities</i>			✓	
14.4. <i>Practice Exercises</i>				
14.5. <i>Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



42. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
43. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
44. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
45. Redundancy in the activities between the workbook and the textbook (please check page 77, 82, 85, 87, and 90 of the textbook and page 26, 28, 29, 31, and 32 of the workbook, consecutively). Two new activities were found in the students' workbook that were titled "open inquiry" (please check pages 27 and 30).





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 3			
		Textbook Title: العلوم			
		Chapter Title: اشكال من الطاقة			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>29. Alignment of the translated texts to the philosophy of the original textbook</b>					
29.1.	<i>Content of the Chapter</i>			✓	
29.2.	<i>Activities included in the chapter</i>				✓
29.3.	<i>Learning objectives</i>		✓		
29.4.	<i>Practice exercises</i>				
29.5.	<i>Assessment exercises</i>				✓
29.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives are not aligned with the philosophy of the book that states the importance of teaching the scientific method and the practical and mental skills. The learning objectives only focus on knowledge, comprehension, and recall which belong to the first two levels in Bloom's Taxonomy for example يوضح كيف ينشأ الصوت            However, there is one learning objective that is at the fourth level of blooms taxonomy that is: يميز بين شدة الصوت و درجته</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>18. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
18.1.	<i>Length of sentences</i>			✓	
18.2.	<i>Complexity of sentences</i>			✓	
18.3.	<i>Diversity of language structures</i>			✓	
18.4.	<i>Number of concepts per chapter</i>			✓	
18.5.	<i>Reuse of technical terms in subsequent chapters</i>				✓
18.6.	<i>Clarity of definitions of technical terms</i>				✓



18.7. <i>Using concrete examples to illustrate concepts</i>				✓
18.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>				✓
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>24. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
24.1. <i>Illustrations</i>				✓
24.2. <i>Content</i>			✓	
24.3. <i>Activities</i>				✓
24.4. <i>Practice Exercises</i>				
24.5. <i>Assessment exercises</i>				✓
24.6. <i>Skills</i>				✓
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>15. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
15.1. <i>Illustrations</i>			✓	
15.2. <i>Content</i>			✓	
15.3. <i>Activities</i>			✓	
15.4. <i>Practice Exercises</i>				
15.5. <i>Assessment exercises</i>			✓	
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

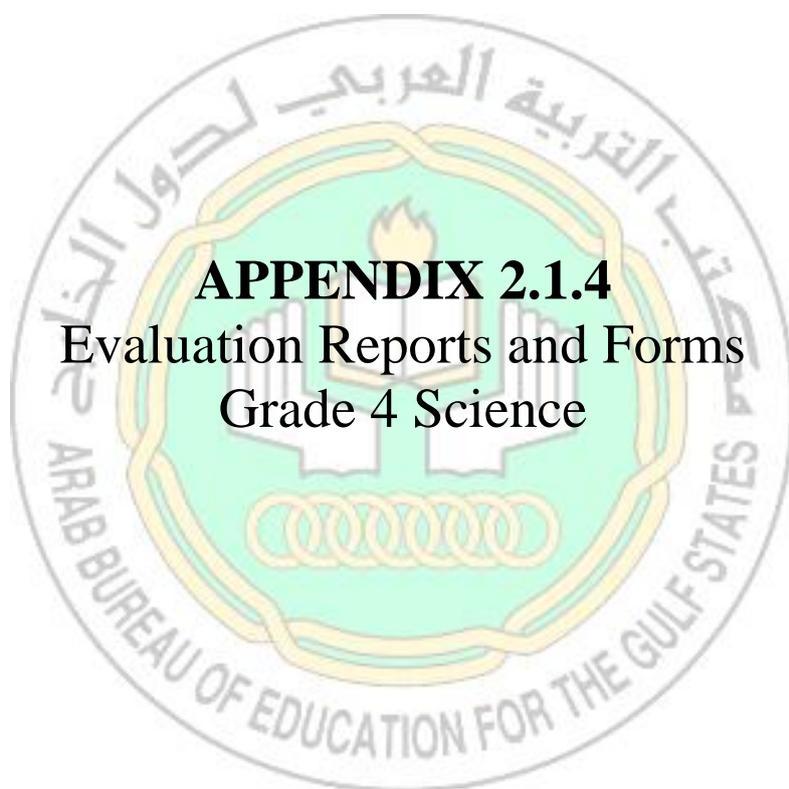
Additional indicators and other comments.

46. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
47. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
48. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.



49. Redundancy in the activities between the workbook and the textbook (please check page 119, 121, 125, and 130 of the textbook and page 44, 46, 47, and 49 of the workbook, consecutively). Two new activities were found in the students' workbook that were titled "open inquiry" (please check pages 45 and 48).





## **APPENDIX 2.1.4**

### **Evaluation Reports and Forms Grade 4 Science**



### Table of Contents – Grade 4

Chapters	Original English Version	Translated Arabic Version
1	Kingdoms of Life	Kingdoms of Living Things
2	The Animal Kingdom	The Animal Kingdom
3	Exploring Ecosystems	Exploring Ecosystems
4	Surviving in Ecosystems	Surviving in Ecosystems
5	<i>Shaping Earth</i>	N/A
6	Saving Earth's Resources	Earth's Resources
7	<i>Weather and Climate</i>	N/A
8	The solar system and beyond	The solar system and space
9	<i>Properties of matter</i>	N/A
10	Matter and its Changes	Matter and its Changes
11	Forces	Forces
12	Energy	Energy

The table of contents of the translated Arabic science textbook is not aligned with the original English science textbook. As can be seen from the above table, three chapters (Shaping Earth, Weather and Climate, and Properties of Matter) which are found in the original textbook are completely missing in the translated version. Moreover, the chapter named “Saving Earth’s Resources” in the original textbook is called “Earth’s Resources” in the translated version and another chapter called “Solar System and Beyond” was found as “Solar System and Space” in the Arabic textbook. Other titles of the chapters that are translated into Arabic are found to be identical to the original titles in English.

Moreover, there is a trend to integrate lessons of a chapter in the Arabic version and to entirely omit a lesson found in a chapter. Moreover, most of the inquiry activities, inquiry skill building activities, reading in science, math in science found in the English version are totally missing in the Arabic textbook. The “Careers in Science” section found in the original book is not evident in the translated version. Finally, the English textbooks include two pages titled “Unit literature” before starting a new unit. Those “Unit literature” were entirely omitted in the Arabic version.

However, the Arabic textbook added the scientific method, scientific skills, and safety instructions at the beginning of the table of contents which were not found in the original textbook. Moreover, a student’s resources at the end of the second semester that includes vocabulary, scientific tools... was also added in the translated version. In addition, one “Reading in Science: Islam and Astronomy” activity found in the chapter titled “Solar System and Space” was added to fit students’ cultural background.

Note: The philosophy of the book that is found in the translated Arabic version at the beginning of students’ textbook is not written in the original English science textbook.



<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 4 Semester: 1				
		Textbook Title: العلوم				
		Chapter Title: المملكة الحيوانية				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>Criterion/Indicator</b>						
<b>30. Agreement of the translated Arabic book with that of the English book</b>						
30.1.	Definitions and explanations in the chapter		✓			
30.2.	Activities included in the chapter		✓			
30.3.	Learning objectives					
30.4.	Practice exercises					
30.5.	Assessment exercises			✓		
30.6.	Figures, pictures, and illustrations				✓	
<b>31. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
31.1.	For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.					

### General Overview:

The chapter in the original English textbook and the same chapter in the translated Arabic textbook are both titled “The Animal Kingdom”. However, the lessons in each of those chapters differ.

The 4 lessons in the “The Animal Kingdom” chapter found in the *original English textbook* are:

- Lesson 1: Animals without backbones
- Lesson 2: Animals with backbones
- Lesson 3: Systems in Animals
- Lesson 4: Animal Life Cycles

The 2 lessons in the “The Animal Kingdom” chapter found in the *translated Arabic version* are:

- Lesson 1: Animals without backbones
- Lesson 2: Animals with backbones

Therefore, lesson 3 “Systems in Animals” in the original English textbook is integrated in lesson 2 in the translated Arabic version. However, lesson 4 “Animal Life Cycles” found in the original English textbook is completely missing in the translated Arabic textbook.



### 1.13) Definitions and explanations in the chapter:

Most of the definitions of the vocabulary words found in the translated Arabic version are accurately translated from the original English textbook (with the exception of the vocabulary words that are used in Lesson 4 that was omitted in the Arabic version). However, some of the explanation that is found in the original English textbook is missing in the translated Arabic version. For example, the original English textbook talks about two different ways by which animals we can differentiate animals that is symmetry and backbone (please check page 78 and 79 in the original English textbook). The symmetry paragraph is completely skipped in the translated Arabic textbooks (please check page 52 in the Arabic version). Similar findings were also evident in explaining the different body systems found in animals. The original English textbook (page 100-104) talks about the body systems in both vertebrates and invertebrates while the translated Arabic version (page 65-68) completely skips the paragraph about invertebrates.

Note: A “Key Vocabulary” sheet is found at the beginning of each chapter in both the English and the Arabic textbooks that defines the new vocabulary words. However, the original English textbook provides the page number where each word appears unlike the Arabic translated version. In addition, other new words that are not defined in the “Key Vocabulary” sheet in the English textbook are written under a section called “More Vocabulary” and their page numbers are also provided.

### 1.14) Activities included in the chapter:

In general, the original English textbook contains 8 activities in the first *three* lessons (not taking into account the activities found in the fourth lesson since lesson four from the original book is completely missing in the translated version) found on pages 77, 80, 89, 93, 99, 102, 106, and 107. However, the translated Arabic version (students’ textbook, workbook, and teachers’ guide) the *two* lessons only contains 4 activities on pages 51, 53, 59, and 63. The first four activities in both books (English and Arabic) are the same. But, the other four activities that tackle the body systems are not mentioned in the translated Arabic version. Those activities are “How does an earthworm sense light?” on page 99 in the original English textbook, “Make a Model Lung” page 102 in the original English textbook, “How do feet help birds move in water?” page 106 in the original English textbook, and “How do teeth help animals eat?” page 107 in the original English textbook.

Note: The original English textbook includes “Focus on Skills” pages 86 and 87, “Writing in Science” page 96, “Math in Science: Protecting Animals” page 97, “Reading in Science” page 118 and 119, and “Careers in Science” page 122. The translated Arabic version (students’ textbook, workbook, and teachers’ guide) only included the “Math in Science: Protecting Animals” on page 70.

### 1.17) Assessment Exercises:

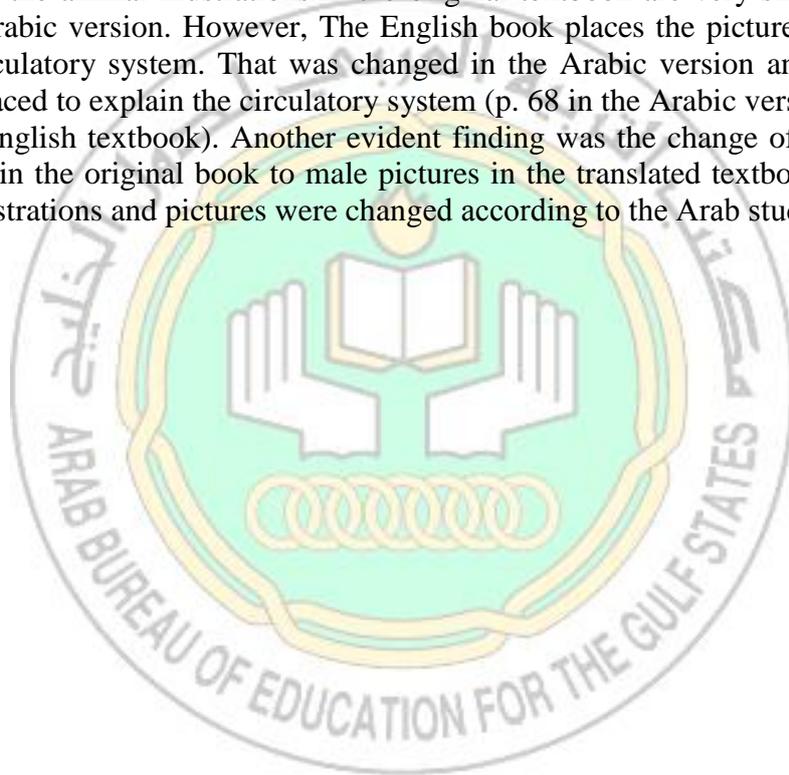
Different assessment exercises are found within the lesson under the title “Quick Check” which consists of two subheading the “Main idea and details” and the “Critical Thinking”. Other assessment exercises are located at the end of each lesson titled “Lesson Review” and at the end of the whole chapter titled “Chapter Review”. Only one “Quick Check” (not taking into account the “Quick Checks” found in the fourth lesson since lesson



four from the original book is completely missing in the translated version) that tackles ‘symmetry’ which is written in the original textbook is missing in the translated version because the translators skipped the paragraph about symmetry. The “Lesson Review” of the Lesson 1 is the same in both the English and Arabic versions (students’ textbook, workbook, and teachers’ guide). Since the translated Arabic textbooks (students’ textbook, workbook, and teachers’ guide) have integrated lesson 2 and 3 of the original English textbook into the same lesson 2, the “Lesson Review” (pages 95 and 105) of the original textbook are integrated under the same “Lesson Review” in the translated version (page 69 in the Arabic version). That is why some of the questions are not mentioned in the translated textbooks. For example, the “Critical Thinking”, “Writing Link”, and “Math Link” are totally missing in the Arabic version.

*1.18) Figures, pictures, and illustrations:*

Most of the animal illustrations in the original textbook are very similar to the ones found in the Arabic version. However, The English book places the picture of a hamster to explain the circulatory system. That was changed in the Arabic version and a picture of a rabbit was replaced to explain the circulatory system (p. 68 in the Arabic version compared to p. 103 in the English textbook). Another evident finding was the change of female pictures that were used in the original book to male pictures in the translated textbook. That is why, most of the illustrations and pictures were changed according to the Arab students’ culture.





<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 4		Semester: 2		
		Textbook Title: العلوم				
		Chapter Title: النظام الشمسي و الفضاء				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>Criterion/Indicator</b>						
<b>32. Agreement of the translated Arabic book with that of the English book</b>						
32.1. Definitions and explanations in the chapter			✓			
32.2. Activities included in the chapter			✓			
32.3. Learning objectives						
32.4. Practice exercises						
32.5. Assessment exercises				✓		
32.6. Figures, pictures, and illustrations					✓	
<b>33. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
33.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

### **General Overview:**

The chapter in the original English textbook is titled “The Solar System and Beyond” while the chapter in the translated Arabic textbook is called “The Solar System and Space”.

Moreover, the lessons in each of those chapters slightly differ.

The 4 lessons in the “The Solar System and Beyond” chapter found in the *original English textbook* are:

- Lesson 1: Earth and Sun
- Lesson 2: Earth and Moon
- Lesson 3: The Solar System
- Lesson 4: Stars and Constellations

The 3 lessons in the “The Solar System and Space” chapter found in the *translated Arabic version* are:

- Lesson 1: The Earth and the Sun and the Moon
- Lesson 2: The Solar System
- Lesson 3: Stars and Groups of Stars (النجوم و الابراج السماوية)



Therefore, lessons 1 and 2 in the original English textbook are integrated in lesson 1 in the translated Arabic version.

### **1.15) Definitions and explanations in the chapter:**

Most of the definitions of the vocabulary words found in the translated Arabic version are accurately translated from the original English textbook. However, some of the vocabulary words that are found in the English textbook are missing in the translated version (“gravity” found on page 381 and “orbit” on page 362 in the original English book). Moreover, the word “revolution” was defined in the original book (page 357) as “one complete trip around an object in a circular or nearly circular path”. While the “revolution” was defined in the translated Arabic version (page 9) as “the path taken by an object around another object”. This shows inaccuracy of the definition of the word “revolution” since the translated version didn’t mention that the path was circular.

Some of the explanation that is found in the original English textbook is missing in the translated Arabic version (students’ textbook, workbook, and teachers’ guide). For example, the original English textbook talks about “Shadows” on page 361. This paragraph is completely skipped in the translated version. Similarly, a whole page discussing “How does the Sun’s apparent path change over the seasons?” is removed in the translated Arabic textbook. Moreover, other paragraphs that discuss “gravity”, “astronauts”, “shuttles and space stations”, “probes”, “Mercury”, “Venus”, “Earth”, “Mars”, “Jupiter”, “Saturn”, “Uranus”, “Neptune”, “Dwarf planets”, “Light years”, and “Power for the water cycle” were also omitted in the Arabic textbooks.

Finally, some verses of the Islam holy book were included in the explanation of certain concepts to fit students’ cultural backgrounds. Please check pages 18, 20, 32 ... in the translated version.

Note: A “Key Vocabulary” sheet is found at the beginning of each chapter in both the English and the Arabic textbooks that defines the new vocabulary words. However, the original English textbook provides the page number where each word appears unlike the Arabic translated version. In addition, other new words that are not defined in the “Key Vocabulary” sheet in the English textbook are written under a section called “More Vocabulary” and their page numbers are also provided.

### **1.16) Activities included in the chapter:**

In general, the chapter “The Solar System and Beyond” in the original English textbook contains 10 activities found on pages 359, 363, 369, 373, 379, 384, 393, 397, 400, and 401. However, the chapter “The Solar System and Space” in the translated Arabic version (students’ textbook, workbook, and teachers’ guide) contains 6 activities on pages 11, 15, 23, 27, 31, and 35. The activities “What affects the size of the craters on the Moon?” page 369, “Moon and Earth” page 373, “Why do some distance stars appear together?” page 400, and “How does distance from Earth affect a star’s apparent brightness?” page 401 in the original book are missing in the translated books.

Note: The original English textbook includes “Writing in Science” page 366, “Math in Science” page 367, “Focus on Skills” page 376 and 377, “Reading in Science” page 390 and 391, and “Careers in Science” page 404.



### **1.19) Assessment Exercises:**

Different assessment exercises are found within the lesson under the title “Quick Check” which consists of two subheadings the “Main idea and details” and the “Critical Thinking”. Other assessment exercises are located at the end of each lesson titled “Lesson Review” and at the end of the whole chapter titled “Chapter Review”. Only 4 out of 14 “Quick Checks” from the original textbook are not found in the translated version. The missing “Quick Checks” are found in the original book on pages 364, 383, 385, and 395. As for the “Lesson Review”, the “Critical Thinking”, “Test Prep”, and “Compare and Contrast” parts were skipped in different lessons (please check pages 365, and 375 in the original English textbook compared to page 21 in the translated Arabic version). It is also evident that the translated version failed to integrate questions 3 and 4 on page 365 in the original textbook. Question 4 on page 21 in the Arabic version is titled “Critical Thinking” and asks the question assigned to that part however, the Cause-Effect chart under this question belongs to question 3 in the original text and is not related to the “Critical Thinking” part. Moreover, all the questions under “Social Studies Link” were omitted since they tackle the United States of America history (please check pages 365, 375, and 389 in the original text) and hence were replaced by “Science and Society” related to the Arab world (pages 21 and 29 in the translated version). Finally, the “Chapter Review” found on page 402 and 403 in the original textbook is not aligned with the “Chapter Review” in the translated version pages 39 and 40. The translated version omitted the two exercises titled “Interpret Data” and “Critical Thinking”.

### **1.20) Figures, pictures, and illustrations:**

Most of the illustrations in the original textbook are very similar to the ones found in the Arabic version. However, it was evident that cultural effects influenced the choice of pictures used. For example, female pictures that were used in the original book were replaced with male pictures in the translated textbook. Moreover, some of the male pictures in the Arabic version are wearing the traditional costume. That is why, most of the illustrations and pictures were changed according to the Arab students’ culture.



### Science Report Grade 4 science

The following report is an evaluation of science books in grade 4 (first semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Three chapters out of five chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 1: Kingdoms of Living Things; (2) chapter 3: Exploring the eco-systems; and (3) chapter 5: Earth's Resources. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

- **Philosophy of the book:**

- **Student book: emphasis on:**

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Interpret pictures
  - Scientific reading
  - Scientific writing
  - Drawing
  - Model construction
- Integrating science with various branches of knowledge, with real world and everyday life situations, and with health, art, and societal issues.



### **Activity Book: emphasis on:**

- Performing activities that deepens students' scientific knowledge
- Increase students' research skills and survey
- Improving students' attitudes towards and interests in science and scientists

### **Evaluation:**

The content of the chapters, activities, practice exercises, assessment exercises, and skills are mostly aligned with the philosophy that was presented at the beginning of the book. However, it was clear that the content of the chapters, activities, practice exercises, assessment exercises, and skills also do not tackle worldwide advancements. As for the learning objectives in all the chapters examined, it was evident that the scientific method, mental and practical skills, and the worldwide advancements are not part of the objectives as has been claimed in the philosophy. Furthermore, most the learning objectives in the three chapters belonged to level 1 and 2 of Blooms Taxonomy since most of the objectives focus on recall, knowledge, and comprehension. There isn't any learning objective that tackles neither the scientific method nor the mental and practical skills. Only two objectives out of all the learning objectives that were evaluated were at the sixth level of Bloom's Taxonomy while only one objective was at the analysis level (fourth level in Bloom's Taxonomy). However, one lesson titled "the scientific method" is found at the beginning of students' textbook term 1. The objective of this lesson is to explain the scientific method and specify the steps of the scientific method to the students (one of the objectives of this lesson is the following *يحدد خطوات الطريقة العلمية*). Finally, the Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.

As for the Students' workbook, it is not divided into chapters which are aligned with the science textbook and no titles are found at the beginning of each lesson. Moreover, redundancy in the activities between the workbook and the textbook were evident in all the chapters that were examined (please check the book evaluation forms). However, more than one "open inquiry" activity was included in the students' workbooks.

- **Suitability of the Arabic language:** In general, the Arabic language is suitable for the third graders. Most of the new vocabulary words are defined on a Vocabulary sheet that is found at the beginning of each chapter. Moreover, most of the technical words learned in a lesson are reused in the following lessons of the same chapter. Finally, it is crucial to mention that at the beginning of each lesson in a chapter a new section called "read and learn" is added. This section states the main idea of the lesson, the new vocabulary words that will be learned, and reading skills that can be used (for example: summary, cause-effect...).
- **Suitability of the Arabization to serve the science concept:** The illustrations, activities, contents practice exercises, assessment exercises, and skills used in the textbooks serve the science concept of the chapters.
- **Cultural context:** The illustrations found in the textbook are suitable for the cultural context. Moreover, male and female pictures are used in the students' textbook.



Book Evaluation Form	Subject: Science			
	Grade: Grade 4			
	Textbook Title: العلوم			
	Chapter Title: ممالك المخلوقات الحية			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>34. Alignment of the translated texts to the philosophy of the original textbook</b>				
34.1. <i>Content of the Chapter</i>			✓	
34.2. <i>Activities included in the chapter</i>				✓
34.3. <i>Learning objectives</i>		✓		
34.4. <i>Practice exercises</i>				
34.5. <i>Assessment exercises</i>			✓	
34.6. <i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives in this chapter are not aligned with the philosophy of the chapter that states the importance of the scientific method and the mental and practical skills. Most of those learning objectives belong to the first and second level in Bloom's Taxonomy especially since they focus on comprehension and recall (for example: يلخص الوظائف الخمس للمخلوقات الحية). However, only two out of the six learning objectives of this chapter are at the analysis level in Bloom's Taxonomy (for example: يقارن بين الخلايا النباتية و الخلايا الحيوانية).</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>19. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
19.1. <i>Length of sentences</i>			✓	
19.2. <i>Complexity of sentences</i>			✓	
19.3. <i>Diversity of language structures</i>			✓	
19.4. <i>Number of concepts per chapter</i>			✓	
19.5. <i>Reuse of technical terms in subsequent chapters</i>				✓



19.6.	<i>Clarity of definitions of technical terms</i>				✓
19.7.	<i>Using concrete examples to illustrate concepts</i>				✓
19.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>25. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
25.1. <i>Illustrations</i>			✓	
25.2. <i>Content</i>			✓	
25.3. <i>Activities</i>			✓	
25.4. <i>Practice Exercises</i>				
25.5. <i>Assessment exercises</i>			✓	
25.6. <i>Skills</i>			✓	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

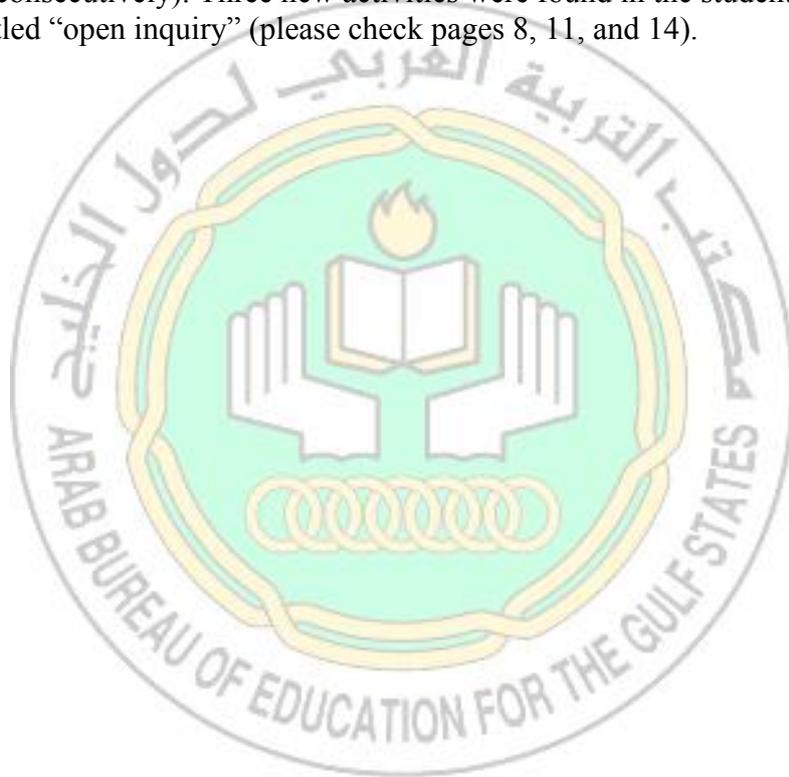
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>16. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
16.1. <i>Illustrations</i>			✓	
16.2. <i>Content</i>			✓	
16.3. <i>Activities</i>			✓	
16.4. <i>Practice Exercises</i>				
16.5. <i>Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				



Comments and explanation on implementing the indicator.

Additional indicators and other comments.

50. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
51. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
52. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
53. Redundancy in the activities between the workbook and the textbook (please check page 21, 26, 29, 34, 37, and 43 of the textbook and page 7, 9, 10, 12, 13, and 15 of the workbook, consecutively). Three new activities were found in the students' workbooks that were titled "open inquiry" (please check pages 8, 11, and 14).





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 4			
		Textbook Title: العلوم			
		Chapter Title: استكشاف الانظمة البيئية			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>35. Alignment of the translated texts to the philosophy of the original textbook</b>					
35.1. <i>Content of the Chapter</i>				✓	
35.2. <i>Activities included in the chapter</i>					✓
35.3. <i>Learning objectives</i>			✓		
35.4. <i>Practice exercises</i>					
35.5. <i>Assessment exercises</i>					✓
35.6. <i>Skills</i>					✓
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3					
1.3) The learning objectives of this chapter are not aligned with the philosophy of the book that states the importance of teaching students the scientific method and the mental and practical skills. Moreover, all the objectives in this chapter are targeting students' recall and comprehension which belong to the first and second level in Bloom's Taxonomy (يصف بعض المناطق البيئية في العالم).					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>20. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
20.1. <i>Length of sentences</i>				✓	
20.2. <i>Complexity of sentences</i>				✓	
20.3. <i>Diversity of language structures</i>				✓	
20.4. <i>Number of concepts per chapter</i>				✓	
20.5. <i>Reuse of technical terms in subsequent chapters</i>				✓	
20.6. <i>Clarity of definitions of technical terms</i>					✓
20.7. <i>Using concrete examples to illustrate concepts</i>					✓



20.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>26. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
26.1. <i>Illustrations</i>			✓	
26.2. <i>Content</i>				✓
26.3. <i>Activities</i>				✓
26.4. <i>Practice Exercises</i>				
26.5. <i>Assessment exercises</i>			✓	
26.6. <i>Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>17. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
17.1. <i>Illustrations</i>				✓
17.2. <i>Content</i>				✓
17.3. <i>Activities</i>			✓	
17.4. <i>Practice Exercises</i>				
17.5. <i>Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

54. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
55. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
56. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
57. Redundancy in the activities between the workbook and the textbook (please check page 77, 82, 85, and 87 of the textbook and page 22, 24, 25, and 27 of the workbook, consecutively). Three new activities were found in the students' workbooks which were titled "open inquiry" and "laboratory experiment" (please check pages 23, 26, and 28-30).



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 4			
		Textbook Title: العلوم			
		Chapter Title: موارد الارض			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>36. Alignment of the translated texts to the philosophy of the original textbook</b>					
36.1.	<i>Content of the Chapter</i>				✓
36.2.	<i>Activities included in the chapter</i>				✓
36.3.	<i>Learning objectives</i>		✓		
36.4.	<i>Practice exercises</i>				
36.5.	<i>Assessment exercises</i>				✓
36.6.	<i>Skills</i>			✓	
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives in this chapter are not aligned with the philosophy of the chapter that states the importance of the scientific method and the mental and practical skills. Most of those learning objectives belong to the first and second level in Bloom's Taxonomy especially since they focus on comprehension and recall (for example: يصف طبقات التربة و كيف تتكون). However, only one out of the six learning objectives of this chapter is at the analysis level (fourth level) in Bloom's Taxonomy (for example: يقارن بين انواع الصخور الثلاثة).</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>21. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
21.1.	<i>Length of sentences</i>			✓	
21.2.	<i>Complexity of sentences</i>			✓	
21.3.	<i>Diversity of language structures</i>			✓	
21.4.	<i>Number of concepts per chapter</i>			✓	
21.5.	<i>Reuse of technical terms in subsequent chapters</i>		✓		
21.6.	<i>Clarity of definitions of technical terms</i>		✓		
21.7.	<i>Using concrete examples to</i>			✓	



<i>illustrate concepts</i>				
21.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>				✓
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p>2.5) The chapter called <i>الارض موارد</i> contains two lessons. The technical terms that were introduced in the first lesson page 120 were not reused in the following lesson page 130.</p> <p>2.6) Not all the new technical words that students will be exposed to are defined on the “Vocabulary Sheet” found at the beginning of the chapter (p.119 in students’ textbook). Only 6 vocabulary words are mentioned on that “Vocabulary Sheet” but students will be learning 3 new words in the first lesson and 7 new words in the second lesson. Moreover, the words “magma” and “lava” (students’ textbook p. 124) are mentioned in the content of the chapter without being found neither in the “Vocabulary sheet” nor in the “read and learn” section that is found at the beginning of each lesson.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>27. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
27.1. <i>Illustrations</i>				✓
27.2. <i>Content</i>			✓	
27.3. <i>Activities</i>				✓
27.4. <i>Practice Exercises</i>				
27.5. <i>Assessment exercises</i>				✓
27.6. <i>Skills</i>				✓
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>18. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
18.1. <i>Illustrations</i>			✓	
18.2. <i>Content</i>			✓	
18.3. <i>Activities</i>			✓	
18.4. <i>Practice Exercises</i>				
18.5. <i>Assessment exercises</i>			✓	
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				



Comments and explanation on implementing the indicator.  
Additional indicators and other comments.

58. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
59. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
60. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
61. Redundancy in the activities between the workbook and the textbook (please check page 121, 124, 131, and 133 of the textbook and page 40, 42, 43, and 45 of the workbook, consecutively). Two new activities were found in the students' workbooks which were titled "open inquiry" (please check pages 41 and 44).





### **Science Report Grade 4 science**

The following report is an evaluation of science books in grade 4(second semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Three chapters out of four chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 7: Matter and its changes and (2) chapter 9:Energy. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

- **Philosophy of the book:**

- ***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Interpret pictures
  - Scientific reading
  - Scientific writing
  - Drawing
  - Model construction
- Integrating science with various branches of knowledge, with real world and everyday life situations, and with health, art, and societal issues.

- ***Activity Book: emphasis on:***

- Performing activities that deepens students' scientific knowledge
- Increase students' research skills and survey
- Improving students' attitudes towards and interests in science and scientists



### ***Evaluation:***

The content of the chapters, activities, practice exercises, assessment exercises, and skills are mostly aligned with the philosophy that was presented at the beginning of the book. However, it was clear that the content of the chapters, activities, practice exercises, assessment exercises, and skills also do not tackle worldwide advancements. As for the learning objectives in all the chapters examined, it was evident that the scientific method, mental and practical skills, and the worldwide advancements are not part of the objectives as has been claimed in the philosophy. Furthermore, most the learning objectives in the three chapters belonged to level 1 and 2 of Blooms Taxonomy indicating that it is not aligned with the philosophy of the book. However, each chapter had one learning objective that belonged to the fourth level of Bloom's Taxonomy. Finally, there isn't any learning objective in the examined chapters that tackles neither the scientific method nor the mental and practical skills. Most of the objectives focus on recall, knowledge, and comprehension. Finally, the Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.

As for the Students' workbook, it is not divided into chapters which are aligned with the science textbook and no titles are found at the beginning of each lesson. Moreover, redundancy in the activities between the workbook and the textbook were evident in all the chapters that were examined (please check the book evaluation forms). However, more than one "open inquiry" activity was included in the students' workbooks.

- **Suitability of the Arabic language:** In general, the Arabic language is suitable for the third graders. Most of the new vocabulary words are defined on a Vocabulary sheet that is found at the beginning of each chapter. However, some new words are either not defined or not found on the vocabulary list (please check the evaluation forms). Moreover, most the technical words learned in a lesson are reused in the following lessons of the same chapter and in other subsequent chapters. Finally, it is crucial to mention that at the beginning of each lesson in a chapter a new section called "read and learn" is added. This section states the main idea of the lesson, the new vocabulary words that will be learned, and reading skills that can be used (for example: summary, cause-effect...).
- **Suitability of the Arabization to serve the science concept:** In general, the illustrations, activities, contents practice exercises, assessment exercises, and skills used in the textbooks serve the science concept of the chapters.
- **Cultural context:** The illustrations found in the textbook are suitable for the cultural context. Moreover, male and female pictures are used in the students' textbook.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Grade 4			
		Textbook Title: العلوم			
		Chapter Title: المادة و تغيراتها			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>37. Alignment of the translated texts to the philosophy of the original textbook</b>					
37.1.	<i>Content of the Chapter</i>			✓	
37.2.	<i>Activities included in the chapter</i>				✓
37.3.	<i>Learning objectives</i>		✓		
37.4.	<i>Practice exercises</i>				
37.5.	<i>Assessment exercises</i>				✓
37.6.	<i>Skills</i>			✓	
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives in this chapter are not aligned with the philosophy of the chapter that states the importance of the scientific method and the mental and practical skills. Most of those learning objectives belong to the first and second level in Bloom's Taxonomy especially since they focus on comprehension and recall (for example: <i>يصف طرق فصل المخاليط</i>). Only two out of 6 learning objectives in this chapter belong to the analysis level in Bloom's Taxonomy (for example: <i>يقارن بين الحموض و القواعد</i>).</p>					
<b>22. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
22.1.	<i>Length of sentences</i>			✓	
22.2.	<i>Complexity of sentences</i>			✓	
22.3.	<i>Diversity of language structures</i>			✓	
22.4.	<i>Number of concepts per chapter</i>			✓	
22.5.	<i>Reuse of technical terms in subsequent lessons and chapters</i>			✓	
22.6.	<i>Clarity of definitions of technical terms</i>		✓		
22.7.	<i>Using concrete examples to illustrate concepts</i>				✓
22.8.	<i>Redundancy of terms and sentences with no educational benefit.</i>		✓		
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 3</p>					

2.6) Not all the new technical words that students will be exposed to are defined on the “Vocabulary Sheet” found at the beginning of the chapter (p.43 in students’ textbook). Only 6 vocabulary words are mentioned on that “Vocabulary Sheet” but students will be learning 3 new words in the first lesson and 3 new words in the second lesson.

2.8) There exists a redundancy in the explanation of chemical changes. When explaining about chemical changes in the first lesson, the authors mention that “rusting” is caused by a chemical reaction between iron and the oxygen found in the air (check student’s textbook page 50). Then on page 60 in the student’s textbook, the same example about “rusting” was used to explain what chemical properties are. The rusting example was used in two subsequent lessons to explain chemical changes and chemical properties.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>28. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
28.1. <i>Illustrations</i>				✓
28.2. <i>Content</i>			✓	
28.3. <i>Activities</i>			✓	
28.4. <i>Practice Exercises</i>				
28.5. <i>Assessment exercises</i>			✓	
28.6. <i>Skills</i>			✓	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

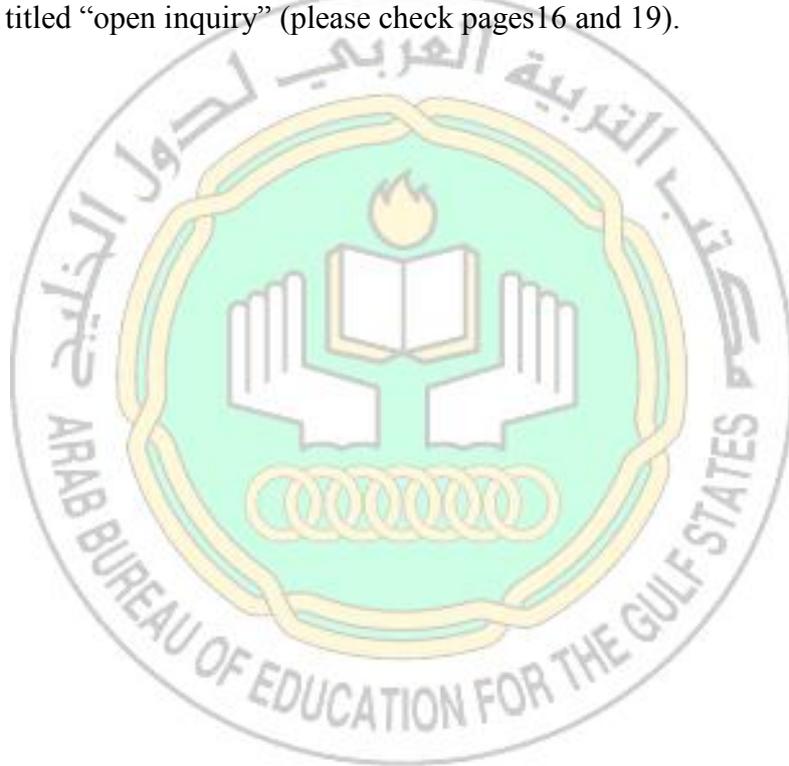
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>29. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
29.1. <i>Illustrations</i>			✓	
29.2. <i>Content</i>			✓	
29.3. <i>Activities</i>				✓
29.4. <i>Practice Exercises</i>				
29.5. <i>Assessment exercises</i>			✓	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				



Comments and explanation on implementing the indicator.

Additional indicators and other comments.

62. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).
63. The Learning Objectives are not found in Students' Textbooks as they are only found in the Teachers' Guide.
64. The Students' workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.
65. Redundancy in the activities between the workbook and the textbook (please check page 45, 49, 55, 58, 63, and 64 of the textbook and page 15, 17, 18, 20, 21, and 23 of the workbook, consecutively). Two new activities were found in the students' workbooks which were titled "open inquiry" (please check pages 16 and 19).





<b>Book Evaluation Form</b>	Subject: Science			
	Grade: Grade 4			
	Textbook Title: العلوم			
	Chapter Title: الطاقة			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>38. Alignment of the translated texts to the philosophy of the original textbook</b>				
38.1.	Content of the Chapter		✓	
38.2.	Activities included in the chapter		✓	
38.3.	Learning objectives	✓		
38.4.	Practice exercises			
38.5.	Assessment exercises			✓
38.6.	Skills		✓	
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3) The learning objectives in this chapter are not aligned with the philosophy of the chapter that states the importance of the scientific method and the mental and practical skills. Most of those learning objectives belong to the first and second level in Bloom's Taxonomy especially since they focus on comprehension and recall (يصف التوصيل و الحمل و الاشعاع و يعرفهما).</p> <p>Only one out of 9 learning objectives in this chapter belong to the analysis level in Bloom's Taxonomy (يتوصل ان الضوء يسير في خطوط مستقيمة).</p>				
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>23. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
23.1.	Length of sentences			✓
23.2.	Complexity of sentences			✓
23.3.	Diversity of language structures		✓	
23.4.	Number of concepts per chapter	✓		
23.5.	Reuse of technical terms in subsequent lessons and chapters		✓	
23.6.	Clarity of definitions of technical terms	✓		

23.7. Using concrete examples to illustrate concepts			✓	
23.8. Redundancy of terms and sentences with no educational benefit.				✓
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p>2.4) This chapter called “Energy” consists of three lessons called “Heat”, “Sound and Light”, and “Electricity and Magnetism”. However, the number of concepts that students are expected to learn in the second and third lesson are condense.</p> <p>The concepts that students will learn in the “Heat” lesson are:</p> <ol style="list-style-type: none"> <li>1- Heat</li> <li>2- Conduction</li> <li>3- Convection</li> <li>4- Radiation</li> <li>5- Insulator</li> <li>6- Conductor</li> </ol> <p>The concepts that students will learn in the “Sound and Light” lesson are:</p> <ol style="list-style-type: none"> <li>1- Vibration</li> <li>2- Sound wave</li> <li>3- Echo</li> <li>4- Prism</li> <li>5- Electromagnetic spectrum</li> <li>6- Refraction</li> <li>7- Reflection</li> <li>8- Transparent</li> <li>9- Translucent</li> </ol> <p>The concepts that students will learn in the “Electricity and Magnetism” lesson are:</p> <ol style="list-style-type: none"> <li>1- Static electricity</li> <li>2- Discharge</li> <li>3- Circuit</li> <li>4- Current electricity</li> <li>5- Series circuit</li> <li>6- Parallel circuit</li> <li>7- Attract</li> <li>8- Repel</li> <li>9- Pole</li> <li>10- Magnetic field</li> <li>11- Electromagnet</li> </ol> <p>2.6) 2.6) Not all the new technical words that students will be exposed to are defined on the “Vocabulary Sheet” found at the beginning of the chapter (p.105 in students’ textbook). Only 5 vocabulary words are mentioned on that “Vocabulary Sheet” but students will be learning 5 new words in the first lesson, 7 new words in the second lesson, and 10 new words in the third lesson. Furthermore, the word “sound wave” was not defined nor highlighted in the content of the chapter even though it is found in the vocabulary list (please check student’s textbook page 116). Similarly, the word “prism” was also not defined even though it was mentioned on the vocabulary list and highlighted in the content of the chapter (please check student’s textbook page 120). Moreover, the words “cornea”, “pupil”, “retina”, and “lens” were tackled within the chapter and shortly defined but not highlighted as new vocabulary words nor were they found in the vocabulary list that is found at the beginning of each lesson under the “read and learn” section.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>30. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
30.1. <i>Illustrations</i>		✓		
30.2. <i>Content</i>			✓	
30.3. <i>Activities</i>			✓	
30.4. <i>Practice Exercises</i>				
30.5. <i>Assessment exercises</i>			✓	
30.6. <i>Skills</i>			✓	
<p>Illustrate by at last one example any indicator of criterion 3 given a score of less than 3</p> <p>3.1) The translation of the waves found in the “Electromagnetic Spectrum” figure (please check student’s textbook page 120 and 121) are wrong. The names of the waves are misplaced over the wave drawn under it.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>31. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
31.1. <i>Illustrations</i>			✓	
31.2. <i>Content</i>			✓	
31.3. <i>Activities</i>			✓	
31.4. <i>Practice Exercises</i>				
31.5. <i>Assessment exercises</i>			✓	
<p>Illustrate by at last one example any indicator of criterion 4 given a score of less than 3</p>				

Comments and explanation on implementing the indicator.

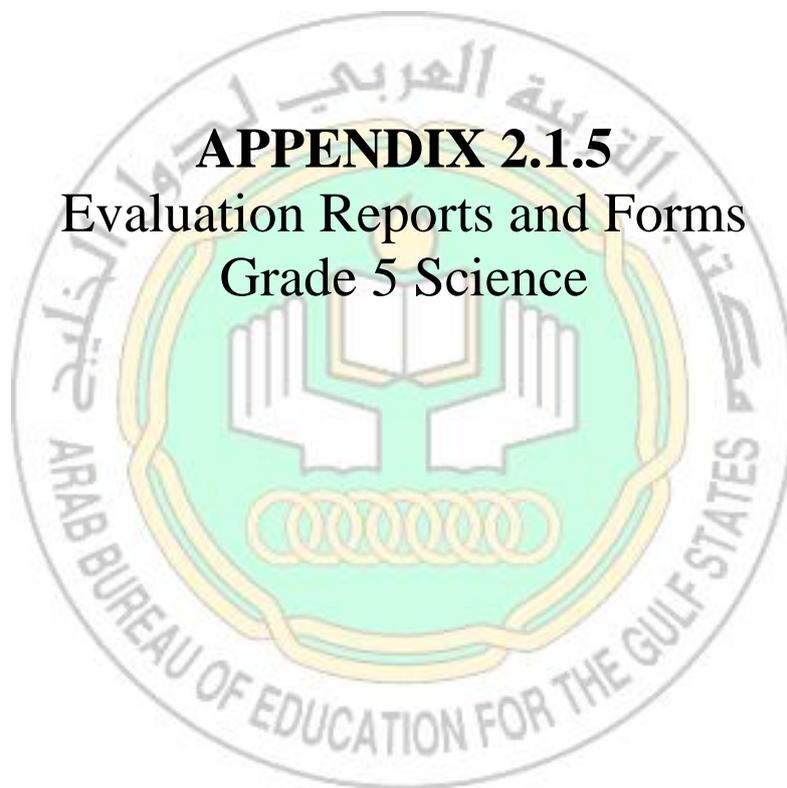
Additional indicators and other comments.

66. This chapter does not include worldwide advancements as has been mentioned in the philosophy of the book in any of the criteria presented (content/ activities/ learning objectives/ practice exercises/ skills/ assessment).

67. The Learning Objectives are not found in Students’ Textbooks as they are only found in the Teachers’ Guide.

68. The Students’ workbook is not divided into chapters that are aligned with the science textbook and no titles are found at the beginning of each lesson.

Redundancy in the activities between the workbook and the textbook (please check page 107, 111, 115, 127, 138, and 140 of the textbook and page 40, 42, 43, 45, 47, and 52 of the workbook, consecutively). Two new activities were found in the students’ workbooks which were titled “open inquiry” (please check pages 41, 44, and 46).



**APPENDIX 2.1.5**  
Evaluation Reports and Forms  
Grade 5 Science



## Table of Contents for Grade 5

Units	English Version	Arabic Version (Semesters 1 and 2)	
	<i>The Scientific Method</i>	الطريقة العلمية	
	<i>Focus on Skills</i>	المهارات العلمية	
	<i>Safety Tips</i>	السلامة تعليمات	
<b>Unit A: Diversity of Life</b>	<b>Unit Literature: Adventures in Eating</b>		
	Chapter 1: Cells and Kingdoms	<i>Lesson 1: Cells</i> <b>Inquiry Skill Builder</b>	Chapter 1: ممالك المخلوقات الحيية
		<i>Lesson 2: Classifying Life</i> <b>Reading in Science</b>	
		<i>Lesson 3: Plants</i> Writing in Science/ <b>Math in Science</b>	
		<i>Lesson 4: Classifying Animals</i> Writing in Science/ <b>Math in Science</b>	
		<i>Lesson 5: Animal Systems</i> <b>Inquiry Investigation</b>	
		Chapter 1 Review	
	Chapter 2: Parents and Offspring	<i>Lesson 1: Reproduction</i> <b>Writing in Science/ Math in Science</b>	Chapter 2: الآباء والأبناء
		<i>Lesson 2: Plant Life Cycles</i> Inquiry Skill Builder	
		<i>Lesson 3: Animal Life Cycles</i> <b>Inquiry Investigation</b>	
		<i>Lesson 4: Traits and Heredity</i> <b>Reading in Science</b>	
		Chapter 2 Review	
		<b>Careers in Science</b>	
	<b>Unit B: Ecosystems</b>	<b>Unit Literature: The Case of Clean Water</b>	
Chapter 3: Interactions in Ecosystems		<i>Lesson 1: Energy Flow in Ecosystems</i> Writing in Science/ <b>Math in Science</b>	Chapter 3: في التفاعلات الأنظمة البيئية
		<i>Lesson 2: Relationships in Ecosystems</i> <b>Inquiry Skills Builder</b>	
		<i>Lesson 3: Adaptation and Survival</i> <b>Reading in Science</b>	
		Chapter 3 Review	
Chapter 4: Ecosystems and Biomes		<i>Lesson 1: Cycles in Ecosystems</i> <b>Inquiry Investigation</b>	Chapter 4: الدورات في والتغيرات الأنظمة البيئية
		<i>Lesson 2: Changes in Ecosystems</i> <b>Inquiry Skill Builder</b>	
		<i>Lesson 3: Biomes</i> <b>Reading in Science</b>	
		<i>Lesson 4: Water Ecosystems</i> Writing in Science/ <b>Math in Science</b>	
		Chapter 4 Review	
	<b>Careers in Science</b>		

Units	English Version	Arabic Version (Semesters 1 and 2)
	<i>Unit Literature: The Many Sides of Diamonds</i>	



<b>Unit C: Earth and its Resources</b>	Chapter 5: Our Dynamic Earth	Lesson 1: Earth's Landforms Inquiry Skill Builder	Chapter 5: أرضنا المتغيرة	Lesson 1: الأرض سطح معالم:
		Lesson 2: Plate Tectonics Writing in Science/ Math in Science		Lesson 2: الأرض سطح في المؤثرة العمليات:
		Lesson 3: Volcanoes Inquiry Investigation		Lesson 2: Inquiry Investigation
		Lesson 4: Earthquakes Writing in Science/ Math in Science		
		Lesson 5: Shaping Earth's Surface Reading in Science		
		Chapter 5 Review		Chapter 5 Review
	Chapter 6: Protecting Earth's Resources	Lesson 1: Minerals and Rocks Inquiry Skill Builder	Chapter 6: حماية موارد الأرض	
		Lesson 2: Soil Inquiry Investigation		Lesson 1: الأحافير والطاقة:
		Lesson 3: Fossils and Energy Writing in Science/ Math in Science		Lesson 2: والماء الهواء:
		Lesson 4: Air and Water Reading in Science		Chapter 6 Review
		Chapter 6 Review		Chapter 6 Review
		Careers in Science		Careers in Science
<b>Unit D: Weather and Space</b>	<b>Unit Literature: Strong Storms</b>			
	Chapter 7: Weather Patterns	Lesson 1: The Atmosphere and Weather Inquiry Skill Builder	Chapter 7: نماذج الطقس	Lesson 1: الطقس والغلاف الجوي:
		Lesson 2: Clouds and Precipitation Inquiry Investigation		Lesson 2: والهطول الغيوم: Inquiry Skill Builder
				Chapter 7 Review
		Lesson 3: Severe Storms Writing in Science/ Math in Science	Chapter 8: العواصف والمناخ	Lesson 1: العواصف
		Lesson 4: Climate Reading in Science		Lesson 2: المناخ Math in Science
		Chapter 7 Review		Chapter 8 Review
	Chapter 8: The Universe	Lesson 1: Earth and Sun Inquiry Skill Builder	Chapter not found	
		Lesson 2: Earth and Moon Writing in Science/ Math in Science		
		Lesson 3: The Solar System Reading in Science		
		Lesson 4: Stars and the Universe Inquiry Investigation		
		Chapter 8 Review		
Careers in Science				

Units	English Version	Arabic Version (Semesters 1 and 2)
<b>Unit E: Matter</b>	<b>Unit Literature: Green and Clean</b>	
	Chapter 9: Comparing	Lesson 1: Properties of Matter Inquiry Skill Builder Lesson 2: Elements Reading in Science



	Kinds of Matter	<i>Lesson 3: Metals, Nonmetals and Metalloids</i> Inquiry Investigation Chapter 9 Review	المقارنة بين أنواع المادة	<i>Lesson 2: الفلزات وأشباهها والفلزات الفلزات</i> Inquiry Investigation Chapter 9 Review
	Chapter 10: Physical and Chemical Changes	<i>Lesson 1: Changes of State</i> Inquiry Skill Builder	Chapter 10: التغيرات الفيزيائية والكيميائية للمادة	<i>Lesson 1: المادة حالة التغيرات:</i>
<i>Lesson 2: Mixtures</i> Inquiry Investigation				
<i>Lesson 3: Compounds and Chemical Changes</i> Writing in Science/Math in Science		<i>Lesson 2: الكيمياء والتغيرات المركبات:</i> Math in Science		
<i>Lesson 4: Acids, Bases and Salts</i> Reading in Science				
Chapter 10 Review Careers in Science		Chapter 10 Review		

<b>Unit F: Forces and Energy</b>	<i>Unit Literature: The Great Jump in China</i>			
	Chapter 11: Using Forces	<i>Lesson 1: Motion</i> Reading in Science	Chapter 11: الطاقة والآلات البسيطة	
		<i>Lesson 2: Forces and Motion</i> Inquiry Skill Builder		
		<i>Lesson 3: Work and Energy</i> Inquiry Investigation		<i>Lesson 1: والطاقة الشغل:</i>
		<i>Lesson 4: Simple Machines</i> Writing in Science/Math in Science		<i>Lesson 2: البسيطة الآلات</i>
		Chapter 11 Review		Chapter 11 Review Careers in Science
	Chapter 12: Using Energy	<i>Lesson 1: Heat</i> Inquiry Skill Builder	Chapter 12: الصوت والضوء	<i>Lesson 1: الصوت</i>
		<i>Lesson 2: Sound</i> Inquiry Investigation		<i>Lesson 2: الضوء</i> Math in Science
		<i>Lesson 3: Light</i> Writing in Science/Math in Science		
		<i>Lesson 4: Electricity</i> Reading in Science		
		<i>Lesson 5: Magnetism</i> Inquiry Investigation		
		Chapter 12 Review Careers in Science		Chapter 12 Review

Key for color coding:

---> Integration of lessons between Arabic and English version

**Yellow highlights:** Things missing in the Arabic version (only in the lessons that are common to both)

**Turquoise highlights:** Things **completely missing** in Arabic version.



## Report for Table of Contents (Grade 5)

Overall, there is a **very largedifference** between the English and Arabic versions of the table of contents. This is apparent at many levels including: 1) the chapters/lessons that are included; 2) the integration of lessons; and 3) the activities found at the end of the lessons or at the beginning of each unit.

1. There are many lessons that are found in the English version but **not** found in the Arabic one (those that are highlighted in turquoise). In fact, only *two* lessons from each chapter in the English version were chosen to be included in the Arabic chapters. Some missing lessons include the following:

- Lessons 1 “Cells”, lesson 4 “Classifying Animals” and lesson 5 “Animal Systems” of chapter 1 “Cells and Kingdoms”
- Lesson 3 “Biomes” and lesson 4 “Water Ecosystems” of chapter 4 “Ecosystems and Biomes”
- Lesson 1 “Minerals and Rocks” and lesson 2 “Soil” of chapter 6 “Protecting Earth’s Resources”
- Lesson 1 “Heat”, lesson 4 “Electricity” and lesson 5 “Magnetism” of chapter 12 “Using Energy”.

In addition, chapter 8 entitled “The Universe” is completely missing from the Arabic version.

2. The integration of lessons in the Arabic version is also somewhat different to that of the English version. For instance, lesson 2 “Life’s Cycles” of chapter 2 in the Arabic version is an integration of lesson 2 “Plant Life Cycles” and lesson 3 “Animal Life Cycles”. Another example is lesson 2 “Processes that affect the Earth’s Surface” of chapter 5 of the Arabic version which is an integration of lesson 3 “Volcanoes”, lesson 4 “Earthquakes” and lesson 5 “Shaping Earth’s Surface” of the English version. (Please see the red dotted arrows for the integration of lessons.)

Also, chapter 7 called “Weather Patterns” in the English version is divided into two separate chapters in the Arabic version”: chapter 7 “Weather Patterns” and chapter 8 “Storms and Climate”.

3. In the lessons that are common between the Arabic and English versions, there are **many differences** in the end of the lesson activities that are included (highlighted in yellow). More specifically, at the end of each lesson of the English version there is always either one of the following activities: Inquiry Investigation, Inquiry Skill Builder, Math in Science, Writing in Science or Reading in Science. However, in the Arabic version the *whole chapter* contains only *one* of these activities (rather than at the end of every lesson as is with the English version). It should be noted here that the activities *within* the lessons themselves are **exactly identical** in both versions. In addition, the “careers in science” is found in every other chapter in the English version (i.e. a total of SIX times) while it is only found THREE times in the Arabic version. Finally, at the beginning of every unit in the English version there is a section entitled “Unit Literature” which includes some scientific excerpt that students must read and reflect on which is **completely missing** in the Arabic version.



<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 5	Semester: 1			
		Textbook Title: العلوم: الإبتدائي الخامس الصف الفصل الدراسي الأول				
		Chapter Title: الأول الفصل ممالك المخلوقات الحية				
<i>Criterion/Indicator</i>		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>39. Agreement of the translated Arabic book with that of the English book</b>						
39.1.	<i>Definitions and explanations in the chapter</i>		X			
39.2.	<i>Activities included in the chapter</i>			X		
39.3.	<i>Learning objectives(N/A)</i>					
39.4.	<i>Practice exercises(N/A)</i>					
39.5.	<i>Assessment exercises</i>			X		
39.6.	<i>Figures, pictures and illustrations</i>			X	X	

**Note:**

Anything highlighted in the photocopied chapters represents **differences** between the English and Arabic version. The following is a key for the color coding in the chapters:

- *Pink* highlights: difference in scientific terms
- *Blue* highlights: difference in content or explanation
- *Yellow* highlights: difference in activities
- *Orange* highlights: difference in illustrations

**1.1 Definitions and explanations in the chapter**

There are very large differences between the English and Arabic versions in terms of the *extent* to which concepts are elaborated on. More specifically, a lot of the information present in the English version is eliminated in the Arabic version. Below are some examples:

- On page 36 of the English version the section of “What are animals?” begins with an overall description of the characteristics of animals. This is not mentioned in the Arabic version (p. 24).
- On page 40 of the English version there is a whole section that explains how bacteria can be useful to living organisms. In the Arabic version on page 27 it is only mentioned that “Other types of bacteria that live inside your body are not harmful”.



- There is a whole page in the English version (p. 56) that explains the relationship between photosynthesis and respiration which is not found in the Arabic version.

In addition, some of the definitions of the scientific terms in the Arabic version are not as clearly or adequately defined as in the English version:

- The definition for “kingdom” is presented as “The broadest group an organism is classified into is a kingdom. Rather than outward characteristics, such as color, kingdoms are grouped by internal form and structure” (page 34 of the English version). However, the definition provided on page 23 of the Arabic version is “Each kingdom contains a large group of living organisms that have a group of similar characteristics”.
- Page 50 of the English version defines “epidermis” as “the outer layer of a root **and the whole plant**” while the Arabic version merely defines it as “the outer layer of a root” (p.34).

Finally, in some instances, the Arabic version did not correctly portray the information found in the English version. A couple of examples are given below:

- On page 33 of the Arabic version it is stated that the seeds of angiosperms are **usually** covered with fruits while the English version states “**All** angiosperms have seeds that are covered by some kind of fruit” (p.49).
- On page 24 of the Arabic version it is stated that there are **seven** classes of vertebrates while the English version states that there are **five** (p.37).

***Extra note:*** The list of scientific terms found at the beginning of the Arabic chapter (19) is not exactly identical to the list of the terms found at the beginning of the English chapter (18). However, this is due to the fact that some lessons in the English chapter are not included in the Arabic one.

### 1.2. Activities included in the chapter

All the activities found in the Arabic version are exactly identical to those found in the English version with the exception of **two** activities that have been eliminated in the Arabic version. One of the activities is found on page 59 and the other is on pages 44-45 of the English version. The latter activity may have been removed for cultural purposes since it includes information about a scientist in the American Museum of Natural History.

### 1.3. Learning Objectives (N/A)

The learning objectives for this book are found in the *teacher’s guide* which is not available.

### 1.4. Practice exercises (N/A)

There are no practice exercises in this book.

### 1.5. Assessment exercises

Overall, the assessment exercises found in the Arabic version were exactly identical to the English version. In fact, only minor differences were apparent in the “Chapter Review” and this is due to the fact that Chapter 1 in the English version encompasses *more* lessons than the Arabic version. Thus, some of the assessment exercises found in the English version were irrelevant to the content of the Arabic version.



### 1.6. Figures, pictures and illustrations

Most of the differences in the illustrations are due to culture such as the pictures on pages 21 and 31 in the Arabic version which show The Gulf States boys rather than the American boy and girl on pages 33 and 47 of the English version.

There were also two pictures/figures found in the English version but not in the Arabic version which are: pictures of the different types of roots on page 51 and a pie chart showing the percentages of different animal species on page 37.





<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 5	Semester: 2			
		Textbook Title: العلوم: الإبتدائي الخامس الصف الفصل الدراسي الثاني				
		Chapter Title: العاشر الفصل التغيرات الفيزيائية والكيميائية للمادة				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>Criterion/Indicator</b>						
<b>40. Agreement of the translated Arabic book with that of the English book</b>						
40.1. Definitions and explanations in the chapter				X		
40.2. Activities included in the chapter				X		
40.3. Learning objectives(N/A)						
40.4. Practice exercises(N/A)						
40.5. Assessment exercises				X		
40.6. Figures, pictures and illustrations				X	X	

**Note:**

Anything highlighted in the photocopied chapters represents **differences** between the English and Arabic version. The following is a key for the color coding in the chapters:

- **Pink** highlights: difference in scientific terms
- **Blue** highlights: difference in content or explanation
- **Yellow** highlights: difference in activities
- **Orange** highlights: difference in illustrations

**1.1 Definitions and explanations in the chapter**

Overall, there is a very good alignment of the definitions and explanations between the English and Arabic versions. However, there are some differences in terms of some of the details mentioned in the English version and in terms of the accuracy of translation to Arabic.

A few of the details found in the English version are not mentioned in the Arabic version. For instance, the concept of chemical formula is not explained in the Arabic text, so any reference to it in the English version is not mentioned in the Arabic version. Some other explanations that were omitted in the Arabic version include: the concept of reversibility of chemical reactions, the fact that light and heat are indications of a new substance and the fact that reactants and products can be of different states of matter.



In addition, some of the Arabic translations did not accurately portray the meaning found in the English text. A couple of examples are given below:

- On page 520 of the English version, it is stated that “In liquids, particles vibrate as they **move past one another**. In gases, particles move quickly and **far from each other**”. The Arabic version merely states that “Particles in the liquid state vibrate faster than those of the solid state, and the particles in the gas state vibrate faster than those of the solid and liquid state” (page 89).
- On page 521 of the English version it is stated that “If a solid gains **enough** heat, its particles start moving **too fast to stay together**” while the Arabic version states “When a solid gains heat, its particles start moving and then it starts to melt and changes into a liquid” (page 89).
- On page 543 of English version it is stated that “Often, [when naming compounds] the **second** element has the last part of its name changed slightly” while the Arabic version states “When naming a compound, changes often occur in some of the names of the elements or all the elements” (page 97).

**Extra note:** The list of scientific terms found at the beginning of the Arabic chapter (85) is not exactly identical to the list of the terms found at the beginning of the English chapter (516). However, this is due to the fact that some lessons in the English chapter are not included in the Arabic one.

#### 1.2. Activities included in the chapter

All the activities found in the Arabic version are exactly identical to those found in the English version with the exception of **two** activities that have been eliminated in the Arabic version. One of the activities is found on page 526-527 which is an “inquiry skill builder” activity and the other is on page 550 which is entitled “writing in science”.

#### 1.3. Learning Objectives (N/A)

The learning objectives for this book are found in the *teacher’s guide* which is not available.

#### 1.4. Practice exercises (N/A)

There are no practice exercises in this book.

#### 1.5. Assessment exercises

Overall, the assessment exercises found in the Arabic version were exactly identical to the English version. In fact, any differences in the exercises were due to the fact that some of the lessons in the English version were not included in the chapter of the Arabic version namely lesson 2 “Mixtures” and lesson 4 “Acids, Bases and Salts”. Thus, the same *types* of assessment exercises were included with changes made in the content. One example is #9 of the Arabic version (page 106) which states “Use variables: If you are conducting an experiment to test the reaction of oxygen with metal, what would be one variable that you might change in the experiment and what variables would you control?”. The English version that corresponds to this question (page 563) states “Use variables: You are doing an experiment to see how to mix sugar and water into a solution more quickly. What is one variable you might change in the experiment? What would be the control test?”

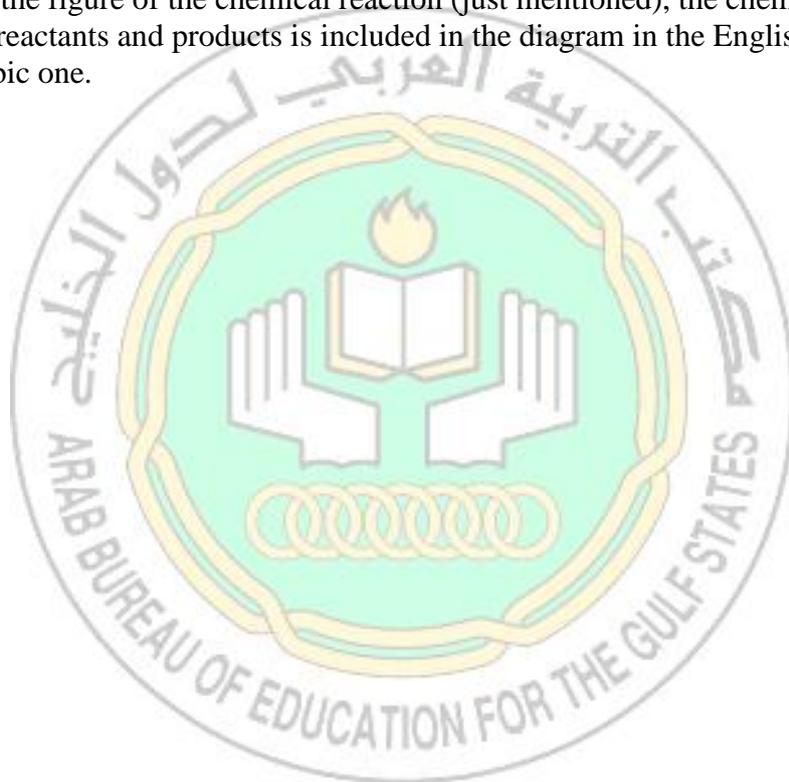
In addition, since the topic of chemical formulas is not dealt with in the Arabic version, any reference to it is omitted in the assessment exercises. For instance, on page 549 of the



English version a multiple choice question is asked “Which compound could be tarnish on a metal?” and the choices are given as chemical formulas (i.e.  $\text{CO}_2$ ) while the Arabic version gives the choices as words (i.e. carbon dioxide) (page 103).

### 1.6. Figures, pictures and illustrations

There are two pictures that are different in the English and Arabic versions due to cultural differences where pictures of American boys on pages 519 and 541 are replaced with pictures of The Gulf States boys on pages 87 and 95 respectively. There was also one picture found in the English version but not in the Arabic version which is a picture of the fructose atomic structure and chemical formula ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) on page 543. In addition, one of the figures is different where the reaction between baking soda and vinegar is shown on page 545 of the English version while the reaction for the formation of water is found in the Arabic version (page 99). Finally, since the concept of chemical formulas is not explained in the Arabic text, any chemical formula is eliminated in the illustrations. For instance, in the figure of the chemical reaction (just mentioned), the chemical formula for each of the reactants and products is included in the diagram in the English version, but not the Arabic one.





## Synthesis Report for Science Book Grade 5- Term 1

The following is an evaluation report which summarizes the strengths and weaknesses of a set of Science textbooks for Grade 5 (first term). This set of books, consisting of the student's textbook and the student's activity book, was translated to Arabic from the Macmillan/McGraw-Hill Science series. The textbooks comprise of three units with two chapters each, thus making a total of six chapters. These chapters deal with diverse topics in Science. In order to obtain an adequate representation of the set of textbooks, three chapters were randomly chosen for evaluation: one chapter from each unit. This report provides a synthesis of the evaluation of the following three chapters: chapter 1 "Kingdoms of Living Organisms"; chapter 3 "Interactions in Ecosystems"; and chapter 6 "Protecting Earths' Resources".

Prior to this report, an evaluation form was filled out for each of the aforementioned chapters. The evaluation forms consisted of four rubrics that corresponded to four different evaluation criteria: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the science concepts; and (4) suitability of the translated textbooks to the cultural context of The Gulf States. Each criterion comprised of a set of indicators which were evaluated based on the following scale: 1 (no evidence), 2 (little evidence), 3 (almost satisfactory evidence) and 4 (satisfactory evidence). The following report capitalizes on the strengths and weaknesses of each of the four criteria found in the evaluation forms for all the three evaluated chapters.

### Criterion 1: Alignment of the translated texts to the philosophy of the original textbook

In terms of this criterion, some of the indicators were very adequately aligned with the philosophy of the book, namely the activities, skills and assessment exercises. However, there were some minor setbacks in the content and learning objectives. More specifically, with respect to the content, there were no to minimal links made with topics in math, health and society which was something emphasized in the philosophy. This was in fact only clearly evident in chapter 6 "Earth and its Resources" and this can be attributed to the fact that the nature of the chapter actually *requires* such links to be made. However, the other two chapters hardly integrated these links although their content lends itself for this. For instance, one suggestion is to link the chapter of "Interactions in Ecosystems" (chapter 3) to human activity: How does human activity affect the ecosystem? (See evaluation reports for more suggestions).

With regards to the learning objectives, they did not reflect the higher order thinking skills that were emphasized in the philosophy of the book such as the use of the scientific method, inquiry and skills in scientific reading and writing. In fact, in all three of the evaluated chapters, the objectives only focused on recitation of the content knowledge. For the sake of illustration, the learning objectives found in chapter 1 (on page 18C of the teacher's guide) are presented below:

- Describe the terms kingdom and species.
- Describe the living organisms found in each of the plant, animal and fungi kingdoms.
- Discuss the process of photosynthesis occurring in the leaves.



- Describe the structure and function of the roots, stems and leaves.

However, the lack of emphasis of higher order thinking in the objectives is compensated by the emphasis of the latter in the assessment exercises, activities and skills. This was one of the areas of strength in the three evaluated chapters of this book. The activities included in the student's book and teacher's guide require the use of inquiry, the scientific method (such as making observations, formulating hypotheses, designing experiments and drawing conclusions) and research skills. In addition, the assessment exercises require application of concepts and going beyond the content of the book.

Another major positive area with respect to this criterion is the fact that the student has a central role in the teaching and learning process which was something mentioned in the philosophy. This very evident in the teachers' book whereby all the activities involve the students extracting information on their own by reading the text, interpreting illustrations (which is also something emphasized in the book) and engaging in experiments. In addition, rather than giving students the information as is, the teachers are provided with probing and guiding questions to trigger students' responses about the content. The activities also cater for individual difference in learning styles and abilities, which is something also emphasized in the philosophy.

*Criterion 2: Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students*

Overall, the Arabic language in all three of the chapters was suitable for the educational level of grade 5 students. More specifically, the vocabulary used was appropriate and the sentence structure was not complex. In addition, there was very minimal redundancy and most of the terms were clearly defined both within the text and at the beginning of each chapter. Finally, concrete examples were given whenever needed which is especially important at this grade level since visualizing and imagining concepts might be difficult for students.

The most lacking feature with respect to this criterion was the fact that two of the three evaluated chapters contained a somewhat frequent use of *long* sentences which is not suitable for students of this grade level. For example, below is a sentence taken from chapter 3 entitled "Interactions in Ecosystems" (p. 70):

فمثلا يتوافر الدفء في الغابة في فصل الصيف , وتهطل فيها كميات كافية من مياه الأمطار , فتصبح الغابة في الصيف نظاما بيئيا أكثر غنى بالنسبة للجماعات الحيوية مقارنة بفصل الشتاء , مما يجعل من مياه الأمطار ودرجات الحرارة عوامل لاحيوية محددة.

This shortcoming can easily be rectified by dividing the long sentences into 2-3 shorter ones.

A final note for this criterion is the fact that the number of concepts in one of the chapters (chapter 1) was too much. Thus, it would be better to reduce the number of concepts in this chapter (see evaluation report for more details). However, this was not an issue with the rest of the chapters.

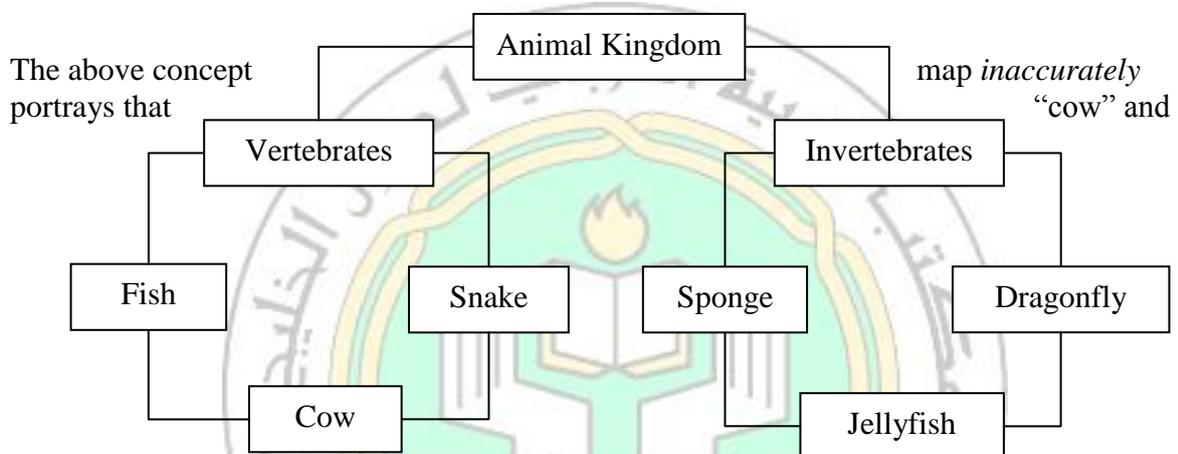
*Criterion 3: Suitability of the Arabization of the translated textbooks to serve the math and science concepts*

In general, the Arabization of the activities, assessment exercises, content and skills was suitable for the science concepts presented in the three chapters. The only major drawback with respect to this criterion was the illustrations presented in the chapters (specifically in chapters 1 and 6) which had several weaknesses worth mentioning. First of all, some of the

illustrations depicted steps of a process, such as the purification of water on page 156; however, no numbers were included to show the sequencing of the steps. Numbering the steps on the illustration *and* in the corresponding text would make it easier for students to align the steps in the figure with their corresponding descriptions in the text.

Another drawback with respect to the illustrations was that some of the concepts presented in the text required an illustration to make them more tangible; however, no illustrations were provided. For example, on page 33 the parts of the seed were being explained without an illustration which makes the concept difficult to visualize. In addition, some of the pictures did not adequately represent what was presented in the text. For instance, on page 34 a labeled picture of a root is shown. This picture includes the term “اللحاء” which is a term not mentioned in the accompanied text. Also, the term “طبقة القشرة” is mentioned in the *text* but is not found on the *illustration*.

Some of the illustrations may also lead to misconceptions. An example of this is the following concept map shown on page 24:



“jellyfish” fall under a narrower category than “fish and snake” and “sponge and dragonfly” respectively.

Finally, in all three of the chapters, the figures were not labeled or numbered (i.e. figure 1, figure 2...etc). This makes it difficult to figure out which illustration corresponds to what is being stated in the text. This is especially true since some of the illustrations are not found on the same page as the text.

Criterion 4: Suitability of the translated textbooks to the cultural context of The Gulf States

All the chapters in this book were satisfactory in terms of the cultural relevance of their content, illustrations, activities and assessment exercises. In fact, a major positive point with respect to this criterion was the fact that references to the Gulf States culture were made whenever relevant. For instance, the religious aspect of their culture was mentioned frequently; every chapter begins with a verse from the Holy Quran that is related to the content of that particular chapter (e.g. page 142). In addition, some of the content and illustrations had cultural relevance. For example, on page 156 it is mentioned that the KSA has several places for purifying water and an illustration of this is shown.



## Philosophy for Grade 5 Science Book (Terms 1& 2)

This Grade 5 Science book is part of a project that aims to improve the teaching and learning of math and science where the **student has a central role in the teaching and learning process.**

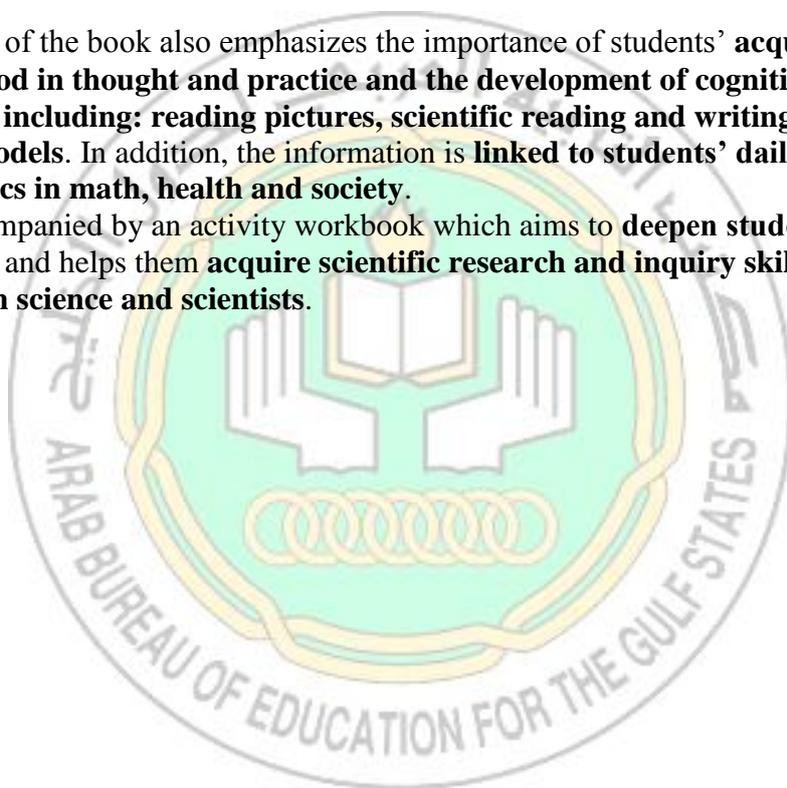
This book consists of two parts, each consisting of three units. The three units in the first part are: “Diversity of Life”, “Ecosystems” and “Earth and its Resources”. The second part consists of the following units: “Weather”, “Matter” and “Force and Energy”.

The book presents things in an **interesting way using effective educational methods** which reflect the curriculum and its philosophy.

In addition, the content consists of **activities which cover various levels of difficulty and cater for students’ individual differences.** Also, the **illustrations are clear and reflect the content of the chapter or unit.** The lessons, chapters and units all **emphasize formative assessment.**

The philosophy of the book also emphasizes the importance of students’ **acquisition of the scientific method in thought and practice and the development of cognitive and practical skills including: reading pictures, scientific reading and writing, and drawing and making models.** In addition, the information is **linked to students’ daily lives by relating to topics in math, health and society.**

This book accompanied by an activity workbook which aims to **deepen students’ scientific understanding** and helps them **acquire scientific research and inquiry skills and develop their interest in science and scientists.**





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 5 –Term 1			
		Textbook Title: العلوم: الإبتدائي الخامس الصف الفصل الدراسي الأول			
		Chapter Title: Chapter 1 Kingdoms of Living Organisms ممالك المخلوقات الحية			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>41. Alignment of the translated texts to the philosophy of the original textbook</b>					
41.1.	<i>Content of the Chapter</i>		X		
41.2.	<i>Activities included in the chapter</i>				X
41.3.	<i>Learning objectives</i>	X			
41.4.	<i>Practice exercises (N/A)</i>				
41.5.	<i>Assessment exercises</i>				X
41.6.	<i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><b>1.1. Content of the chapter</b>            The philosophy states that the knowledge content of the book is linked to students' daily lives and to topics in math, health and society. However, throughout both lessons in the chapter, this was done very minimally. In lesson 1 “Classifying Organisms” this was evident only twice. One of the links was made on page 26 when it was mentioned that yeast is beneficial for producing some kinds of antibiotics and for baking. On the other hand, in lesson 2 “Plants” no links were made at all. Therefore, it would be suggested to include more links to students' daily lives and to issues in math, health and society. In fact, the topics dealt with in this chapter facilitate making such links. For instance, the benefits of each of the six kingdoms to society can be mentioned.</p> <p><b>1.3. Learning Objectives</b>            The philosophy of the book emphasizes the importance of promoting students' higher order science skills including the use of the scientific method, research skills and the development of other cognitive and practical skills relevant to science. However, this is not reflected in the learning objectives found in the teacher's guide. For the sake of illustration, the learning objectives found in chapter 1 (on page 18C of the teacher's guide) are presented below:</p> <ul style="list-style-type: none"> <li>• Describe the terms kingdom and species.</li> <li>• Describe the living organisms found in each of the plant, animal and fungi kingdoms.</li> </ul>					

- Discuss the process of photosynthesis occurring in the leaves.
- Describe the structure and function of the roots, stems and leaves.

It is evident from the above that only *knowledge* of the content is reflected in the objectives.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>24. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
24.1. <i>Length of sentences</i>			X	
24.2. <i>Complexity of sentences</i>				X
24.3. <i>Diversity of language structures</i>				X
24.4. <i>Number of concepts per chapter</i>		X		
24.5. <i>Reuse of technical terms in subsequent chapters</i>				X
24.6. <i>Clarity of definitions of technical terms</i>			X	
24.7. <i>Using concrete examples to illustrate concepts</i>			X	
24.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>			X	

Illustrate by at least one example any indicator of criterion 2 given a score of less than 3

#### 2.4. *Number of concepts per chapter*

The number of concepts in this chapter is too much for the educational level of grade 5 students. For the sake of illustration, below is a list of all the concepts found in lesson 1 only (pp 22-28):

- How are living organisms classified? (kingdom, phylum, class, order, family, genus, species)
- What are animals? (vertebrates vs invertebrates)
- What are plants? (vascular vs non-vascular plants)
- What are protists?
- What are fungi?
- What are bacteria and archaeobacteria?
- What are viruses?

Note: Each of the above includes a description of the general characteristics of each kingdom and examples of organisms from each.

It should also be noted that these concepts are presented in a very limited number of pages (7 pages) and thus are not dealt with in-depth. It could be more ideal if the first lesson were separated into two different lessons; this would give more room for a more in-depth description of each of the kingdoms. Also, rather than having a whole separate lesson about plants (lesson 2), some of the main concepts in this could be integrated into

the section about plants in the first lesson. This would also help in reducing the amount of concepts in this chapter.

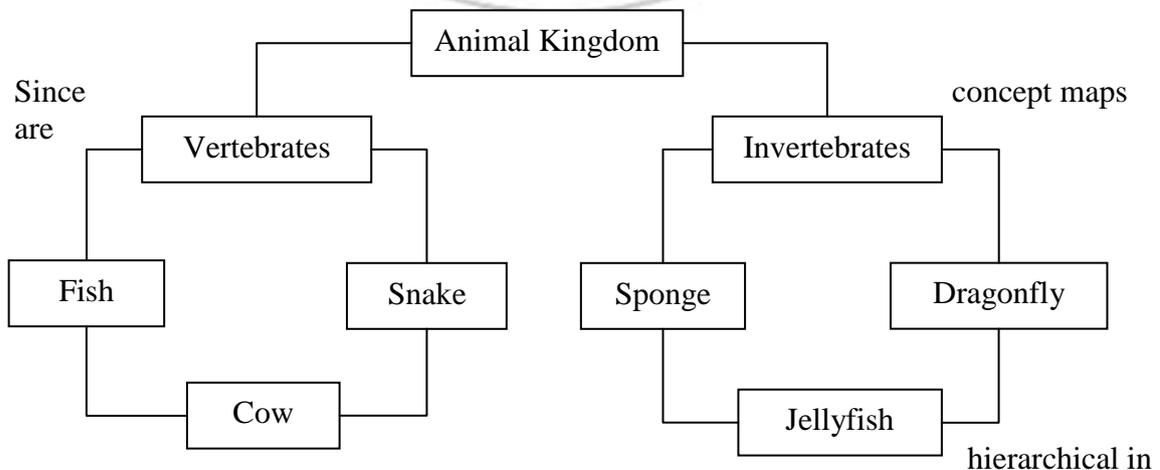
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>32. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
32.1. Illustrations		X		
32.2. Content			X	
32.3. Activities				X
32.4. Practice Exercises (N/A)				
32.5. Assessment Exercises			X	
32.6. Skills				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.1. Illustrations

There are several issues regarding the illustrations in this chapter. One of the issues was the fact that some of the concepts in the text were not accompanied with illustrations making the concepts difficult to visualize. For example, on page 33 the parts of the seed and the concept of a spore were being explained without illustrations. Another example is on page 28 where the mode of action of viruses was being explained; these steps are unclear without an illustration that shows the process.

In addition, some of the illustrations presented in the chapter may lead to misconceptions. For instance, the illustration on page 38 shows the two pathways of transport in a plant: the transport of water and minerals and the transport of sugar. The way the illustration is presented makes it seem like the sugar is being conducted upwards from the roots and that it is only transported to the stem/trunk of a plant. Another example is the concept map shown on page 24 which shows that the animal kingdom is divided into vertebrates and invertebrates. For the sake of illustration, a “simplified” version of the concept map is shown below:



Since are concept maps hierarchical in nature, this particular one depicts that “cow” and “jellyfish” fall under a narrower category than “fish and snake” and “sponge and dragonfly” respectively, which in reality

is not the case. It would be better to place “cow” and “jellyfish” at the same level as “fish”, “snake”, “sponge” and “dragonfly”.

Another issue with the illustrations is that some of them did not adequately serve the purpose of clarifying the content being presented in the text. For instance, on page 34 a labeled picture of the parts of a root is shown: this picture includes the term “اللحاء” which is a term not mentioned in the accompanied text. Conversely, the term “طبقة القشرة” is mentioned in the *text* but not found on the *illustration*. In addition, most of the pictures in the first lesson involved examples of different types of organisms from each of the kingdoms. Although this is important to include, it is not necessary to include a wide variety of examples. It would be more ideal to make use of the space for illustrations that would provide more support for the text (as discussed earlier). For instance, it probably would have been more ideal to include a concept map that shows the relationships between *all* the kingdoms together rather than have each kingdom have its own concept map shown on separate pages of the book.

Finally, the illustrations in this chapter are not labeled (eg. figure 1). Labeling the illustrations would make it easier for students to refer to them as they are reading the text.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>19. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
19.1. <i>Illustrations</i>				X
19.2. <i>Content</i>				X
19.3. <i>Activities</i>				X
19.4. <i>Practice Exercises (N/A)</i>				
19.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

(Please see above)

Additional indicators and other comments.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 5 –Term 1			
		Textbook Title: العلوم : الإبتدائي الخامس الصف الفصل الدراسي الأول			
		Chapter Title: Chapter 3 Interactions in Ecosystems التفاعلات في الأنظمة البيئية			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>42. Alignment of the translated texts to the philosophy of the original textbook</b>					
42.1.	<i>Content of the Chapter</i>		X		
42.2.	<i>Activities included in the chapter</i>				X
42.3.	<i>Learning objectives</i>		X		
42.4.	<i>Practice exercises (N/A)</i>				
42.5.	<i>Assessment exercises</i>				X
42.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
<b>1.1. Content of the chapter</b>					
<p>The philosophy states that the knowledge content of the book is linked to math, health and society. However, this was done only once throughout both lessons in the chapter; only one minor link to health was made on page 76 when the “parasitic relationship” was being explained. In fact, this chapter lends itself for making such links since it deals with the ecosystem and the interactions within ecosystems. For example, one important thing to include would be to link the topic to human activity: How do humans and the ecosystem interact? How do we adapt to our environment? How does this affect the ecosystem?</p>					
<b>1.3. Learning Objectives</b>					
<p>The philosophy of the book emphasizes the importance of promoting students’ higher order science skills including the use of the scientific method, research skills and the development of other cognitive and practical skills relevant to science. However, this is not reflected in the learning objectives found in the teacher’s guide whereby the emphasis is on recitation of information from the content of the chapter. Below are the learning objectives for this chapter (for lessons 1 and 2) (p. 66C of the teacher’s guide):</p> <ul style="list-style-type: none"> <li>• Clarify how living organisms compete and how resources affect the size of them and how long they survive.</li> <li>• Clarify what is meant by habitat, biome, symbiosis and parasitism.</li> <li>• Clarify [what is meant by] behavioral and structural/physical adaptations.</li> <li>• Describe the adaptations of plants and animals.</li> </ul>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>25. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
25.1. <i>Length of sentences</i>		X		
25.2. <i>Complexity of sentences</i>			X	
25.3. <i>Diversity of language structures</i>				X
25.4. <i>Number of concepts per chapter</i>			X	
25.5. <i>Reuse of technical terms in subsequent chapters</i>				X
25.6. <i>Clarity of definitions of technical terms</i>			X	
25.7. <i>Using concrete examples to illustrate concepts</i>				X
25.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>			X	
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><b>2.1. Length of sentences</b>            This chapter contains a few sentences that are long and are thus not very suitable for students in grade 5. An example of this is found on page 70:            فمثلا يتوافر الدفء في الغاية في فصل الصيف , وتهطل فيها كميات كافية من مياه الأمطار , فتصبح الغاية في الصيف نظاما مائيا أكثر غنى بالنسبة للجماعات الحيوية مقارنة بفصل الشتاء , مما يجعل من مياه الأمطار ودرجات الحرارة عوامل لحيوية محددة.</p> <p>It would be suggested to reduce the length of the long sentences by making them into 2 or 3 separate sentences.</p>				
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>33. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
33.1. <i>Illustrations</i>			X	
33.2. <i>Content</i>			X	
33.3. <i>Activities</i>				X
33.4. <i>Practice Exercises (N/A)</i>				
33.5. <i>Assessment Exercises</i>				X
33.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

*3.1. Illustrations (extra note)*

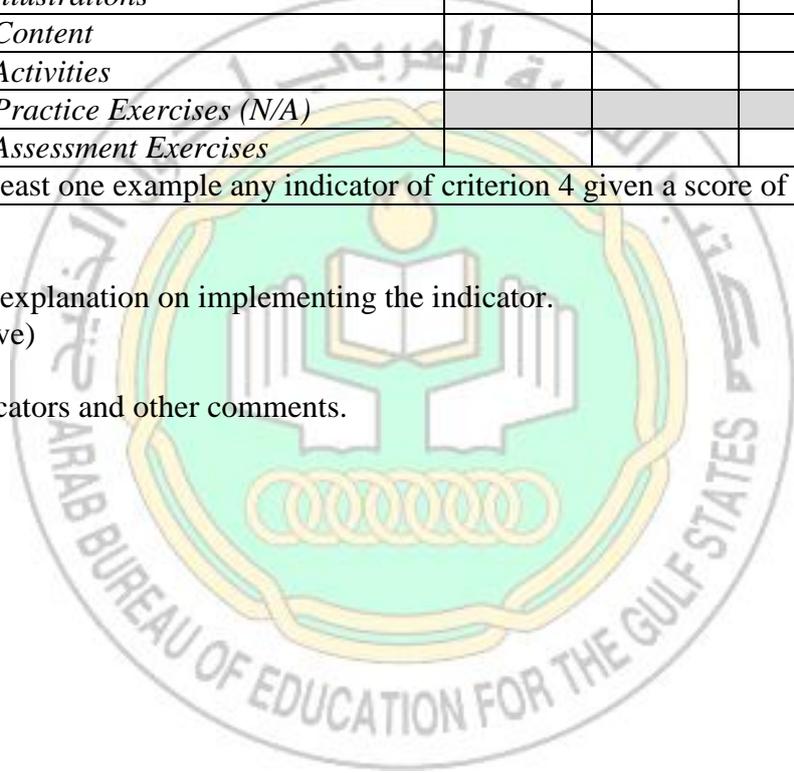
The illustrations found in this chapter adequately serve the concepts being presented; however, it would be more ideal if the illustrations were labeled with numbers (figure 1, figure 2...etc) in order to ensure better coordination between the text and the illustrations.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>20. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
20.1. <i>Illustrations</i>				X
20.2. <i>Content</i>				X
20.3. <i>Activities</i>				X
20.4. <i>Practice Exercises (N/A)</i>				
20.5. <i>Assessment Exercises</i>				X

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

Comments and explanation on implementing the indicator.  
(Please see above)

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 5 –Term 1			
		Textbook Title: العلوم: الإبتدائي الخامس الصف الفصل الدراسي الأول			
		Chapter Title: Chapter 6 Protecting Earths' Resources حماية موارد الأرض			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>43. Alignment of the translated texts to the philosophy of the original textbook</b>					
43.1. <i>Content of the Chapter</i>				X	
43.2. <i>Activities included in the chapter</i>					X
43.3. <i>Learning objectives</i>			X		
43.4. <i>Practice exercises (N/A)</i>					
43.5. <i>Assessment exercises</i>				X	
43.6. <i>Skills</i>					X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
<p><b>1.3. Learning Objectives</b></p> <p>The philosophy of the book emphasizes the importance of promoting students' higher order science skills including the use of the scientific method, research skills and the development of other cognitive and practical skills relevant to science. However, this is not reflected in the learning objectives found in the teacher's guide whereby the emphasis is on recitation of information from the content of the chapter. Below are the learning objectives for both lessons in this chapter (p. 142A of the teacher's guide):</p> <ul style="list-style-type: none"> <li>• Become familiar with fossils and compare them.</li> <li>• Become familiar with renewable and non-renewable sources of energy including fossil fuels.</li> <li>• Clarify why water and air are considered earth's resources.</li> </ul> <p>Describe what causes air and water pollution and how to protect them from it.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>26. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					

26.1.	<i>Length of sentences</i>		X		
26.2.	<i>Complexity of sentences</i>				X
26.3.	<i>Diversity of language structures</i>				X
26.4.	<i>Number of concepts per chapter</i>			X	
26.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
26.6.	<i>Clarity of definitions of technical terms</i>			X	
26.7.	<i>Using concrete examples to illustrate concepts</i>			X	
26.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>			X	

Illustrate by at least one example any indicator of criterion 2 given a score of less than 3

### 2.1. Length of sentences

The use of long sentences is somewhat frequent in this chapter which is not very suitable for students in grade 5. An example of this is found on page 155:

ومن مصادر المياه العذبة أيضا خزانات المياه الجوفية  
حيث تختزن المياه ضمن طبقات من الصخور العالية المسامية التي تتضمن مرور أكبر كمية من الماء إلى الخزان الجوفي الطبيعي ،  
شرط وجود طبقة مثل الطين تمنع تسرب الماء منها.

It would be suggested to reduce the length of the long sentences by making them into 2 or 3 separate sentences.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>34. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
34.1. <i>Illustrations</i>		X		
34.2. <i>Content</i>			X	
34.3. <i>Activities</i>				X
34.4. <i>Practice Exercises (N/A)</i>				
34.5. <i>Assessment Exercises</i>				X
34.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.1. Illustrations

Several comments are worth mentioning with respect to the illustrations in this chapter. First, the illustrations are not labeled (figure 1, figure 2...etc) which makes it difficult to follow along with the text and the illustrations. In addition, some of the illustrations depict steps of a process, such as the purification of water on page 156; however, no numbers are included to show the sequencing of the steps. Numbering the steps on the

illustration *and* in the corresponding text would make it easier for students to align the steps in the figure with their corresponding descriptions in the text.

Another issue in terms of the illustrations is the fact that some of them do not adequately serve the intended science concept. For instance, on page 147 the figure showing the steps of the formation of fossil fuel and natural gas is unclear. More specifically, the difference between one step and the other is vague (it is not obvious that there is a change occurring in the layers of the earth). This particular illustration also does not represent what is found in the text: in the text the use of technical terms such as “الخبث” and “الطري الفحم” were used; however these terms are not labeled in the illustration. Another example is the illustration found on pages 154-155 which also does not accurately depict what is found in the text.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>21. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
21.1. <i>Illustrations</i>				X
21.2. <i>Content</i>				X
21.3. <i>Activities</i>				X
21.4. <i>Practice Exercises (N/A)</i>				
21.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
(Please see above)

Additional indicators and other comments.



## Synthesis Report for Science Book Grade 5- Term 2

The following is an evaluation report which summarizes the strengths and weaknesses of a set of Science textbooks for Grade 5 (first term). This set of books, consisting of the student's textbook and the student's activity book, was translated to Arabic from the Macmillan/McGraw-Hill Science series. The textbooks comprise of three units with two chapters each, thus making a total of six chapters. These chapters deal with diverse topics in Science. In order to obtain an adequate representation of the set of textbooks, three chapters were randomly chosen for evaluation: one chapter from each unit. This report provides a synthesis of the evaluation of the following three chapters: chapter 7 "Weather Patterns"; chapter 10 "Chemical and Physical Changes of Matter"; and chapter 11 "Energy and Machines".

Prior to this report, an evaluation form was filled out for each of the aforementioned chapters. The evaluation forms consisted of four rubrics that corresponded to four different evaluation criteria: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the science concepts; and (4) suitability of the translated textbooks to the cultural context of The Gulf States. Each criterion comprised of a set of indicators which were evaluated based on the following scale: 1 (no evidence), 2 (little evidence), 3 (almost satisfactory evidence) and 4 (satisfactory evidence). The following report capitalizes on the strengths and weaknesses of each of the four criteria found in the evaluation forms for all the three evaluated chapters.

### Criterion 1: Alignment of the translated texts to the philosophy of the original textbook

In terms of this criterion, most of the indicators were very adequately aligned with the philosophy of the book, namely the content, activities, skills and assessment exercises. The only minor setback in this criterion is in the learning objectives which tend to focus on recitation of the content knowledge. They do not reflect the higher order thinking skills that were emphasized in the philosophy of the book such as the use of the scientific method, inquiry and skills in scientific reading and writing. For the sake of illustration, the learning objectives found in chapter 7 "Wind Patterns" (on page 8A of the teacher's guide) are presented below:

- Clarify the effect that the shape of the earth and the angle of its axis have on temperature and the formation of winds.
- Explain how planetary and local winds are formed.
- Explain how clouds and precipitation are formed.
- Summarize how air masses and air fronts affect the weather.
- Clarify how thunderstorms are formed.

However, the lack of emphasis of higher order thinking in the objectives is compensated by the emphasis of the latter in the assessment exercises, activities and skills. This was one of the areas of strength in the three evaluated chapters of this book. The activities included in the student's book and teacher's guide require the use of inquiry, the scientific method (such as making observations, formulating hypotheses, designing experiments and drawing conclusions) and research skills. In addition, the assessment exercises require application of concepts and going beyond the content of the book.



Another major positive area with respect to this criterion is the fact that the student has a central role in the teaching and learning process which was something mentioned in the philosophy. This very evident in the teachers' book whereby all the activities involve the students extracting information on their own by reading the text, interpreting illustrations (which is also something emphasized in the book) and engaging in experiments. In addition, rather than giving students the information as is, the teachers are provided with probing and guiding questions to trigger students' responses about the content. The activities also cater for individual difference in learning styles and abilities, which is something also emphasized in the philosophy.

*Criterion 2: Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students*

Overall, the Arabic language in all three of the chapters was suitable for the educational level of grade 5 students. More specifically, the vocabulary used was appropriate and the sentence structure was not complex. In addition, there was very minimal redundancy and most of the terms were clearly defined both within the text and at the beginning of each chapter. Finally, concrete examples were given whenever needed which is especially important at this grade level since visualizing and imagining concepts might be difficult for students.

One of the most lacking features with respect to this criterion was that there was a tendency towards using *long* sentences which may not suitable for students of this grade level. An example is presented below which was taken from chapter 7 "Weather Patterns" (p.27):

يتكون البرد غالبا مرافقا للعواصف الرعدية، حيث تتكون الغيمة من قطرات ماء مع كمية قليلة من بلورات الجليد، وعند الهطول تتجمد القطرات وتدفعها الرياح إلى أعلى فتبعدها إلى الغيمة، فيتكثف المزيد من قطرات الماء عليها ويزداد حجمها، وتتكرر العملية عدة مرات قبل أن تسقط إلى الأرض

This shortcoming can easily be rectified by dividing the long sentences into 2-3 shorter ones.

Another major area of weakness in this criterion is the number of concepts which was not very suitable for students of grade 5 level. An example of the general concepts presented in one of the chapters is given below (chapter 11 "Work and Machines"; pp 112-127):

- Work and friction
- Energy (kinetic energy and potential energy)
- Forms of energy
- Law of conservation of energy
- Simple machines (the application force, resistance force, force arm, resistance arm is discussed for each of the following):
  - Screw
  - Lever (type 1 lever, type 2 lever, type 3 lever)
  - Pulley
  - Inclined plane
  - Wheel and axle
  - Wedge
- Complex machines

Presenting too many concepts may be confusing and overwhelming to students of this grade level. It is also worth noting here that the time allotted for each chapter is only 4-6 hours (found at the beginning of each chapter in the teacher's guide). Thus, presenting too many concepts in such a short period of time will not ensure in-depth understanding of the concepts. It is therefore suggested to reduce the number of concepts by eliminating those that are not pertinent to the chapter as a whole. For example, in the concepts shown above for



chapter 11, it is not necessary to present the three types of levers. It would be sufficient to provide a general explanation of how a lever works without going into the details of each type. (See individual evaluation reports for more details.)

Criterion 3: Suitability of the Arabization of the translated textbooks to serve the math and science concepts

In general, the Arabization of the assessment exercises, content and skills was suitable for the science concepts presented in the three chapters. The major area of weakness in this criterion lies in the activities presented in the students' book and the teacher's guide. Although these activities are in fact appropriate for the science concepts, they are somewhat lacking in certain aspects. More specifically, in two of the chapters, namely chapter 7 "Wind Patterns" and chapter 11 "Work and Machines", there should have been more *demonstrations* and hands-on activities in order to make the concepts more concrete. It is not enough for students to merely rely on reading the text and looking at the illustrations in the textbook. The concepts that are dealt with in these chapters would be difficult to visualize without the use of concrete material, especially for students at this grade level who might not have adequate background knowledge. Two examples in which demonstrations or hands-on activities would better serve the science concepts are the concepts of "simple machines" in chapter 11 and the "formation of clouds" in chapter 7. Another shortcoming in the activities is that they should be done more frequently. For example, in chapter 10 "Physical and Chemical Changes of Matter", students should have been provided with more opportunities to explore physical and chemical changes. (See evaluation reports for more details and suggestions.)

There are two final points worth mentioning in terms of this criterion. The first has to do with the fact that in all three of the chapters, the figures were not labeled or numbered (i.e. figure 1, figure 2...etc). This makes it more difficult to align the content of the text with its corresponding illustration. The second point is that while the concepts in each of the chapters were accurately portrayed and were coherent, there were no links made amongst the chapters themselves. In other words, there were no relations of the concepts in one chapter with the concepts in another. Examples of relations that could have been made include relating the concept of temperature and change of state in chapter 10 to the concept of atmospheric pressure in chapter 7. Another example is to relate the concept of energy in chapter 11 to the concepts of wind and solar energy presented in chapter 7.

Criterion 4: Suitability of the translated textbooks to the cultural context of The Gulf States

All the chapters in this book were satisfactory in terms of the cultural relevance of their content, illustrations, activities and assessment exercises. In fact, a major positive point with respect to this criterion was the fact that references to the Gulf States culture were made whenever relevant.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 5 –Term 2			
		Textbook Title: العلوم: الإبتدائي الخامس الصف الفصل الدراسي الثاني			
		Chapter Title: Chapter 7 Weather Patterns الطقس نماذج			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>44. Alignment of the translated texts to the philosophy of the original textbook</b>					
44.1.	<i>Content of the Chapter</i>				X
44.2.	<i>Activities included in the chapter</i>				X
44.3.	<i>Learning objectives</i>		X		
44.4.	<i>Practice exercises (N/A)</i>				
44.5.	<i>Assessment exercises</i>			X	
44.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
<p><b>1.3. Learning objectives</b></p> <p>The book’s philosophy emphasizes students’ acquisition of higher order science skills such using the scientific method acquiring inquiry and research skills. However, the learning objectives presented in the chapter do not reflect any of these skills; they merely focus on knowledge of the content. This is evident from the following objectives taken from the chapter (on page 8A of the teacher’s guide):</p> <ul style="list-style-type: none"> <li>• Clarify the effect that the shape of the earth and the angle of its axis have on temperature and the formation of winds.</li> <li>• Explain how planetary and local winds are formed.</li> <li>• Explain how clouds and precipitation are formed.</li> <li>• Summarize how air masses and air fronts affect the weather.</li> </ul> <p>Clarify how thunderstorms are formed.</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>27. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
27.1. <i>Length of sentences</i>		X		
27.2. <i>Complexity of sentences</i>			X	
27.3. <i>Diversity of language structures</i>				X
27.4. <i>Number of concepts per chapter</i>		X		
27.5. <i>Reuse of technical terms in subsequent chapters</i>				X
27.6. <i>Clarity of definitions of technical terms</i>			X	
27.7. <i>Using concrete examples to illustrate concepts</i>			X	
27.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>			X	
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><b>2.1. Length of sentences</b>  The use of long sentences is frequent in this chapter which makes it unsuitable for students of grade 5 since it would be difficult for them to follow along with the ideas. An example is presented below (p.27):</p> <p>ينكون البرد دغال بالمرافق اللعواصف الرعدية، حيث تتكون الغيمة من قطرات ماء مع كمية قليلة من بلورات الجليد، وعند الهطول تتجمد القطرات وتدفعها الرياح إلى أعلى فتبعدها إلى الغيمة، فيتكثف المزيج من قطرات الماء عليها ويزداد حجمها، وتكرر العملية عدة مرات قبل أن تسقط إلى الأرض.</p> <p>To better cater for the educational level of grade 5 students, it would be better to shorten the long sentences by separating them into 2-3 individual sentences.</p> <p><b>2.4. Number of concepts per chapter</b>  The number of concepts presented in this chapter is somewhat large for students of this grade level. Below are the concepts dealt with in both lessons of this chapter (pp 10-34):</p> <ul style="list-style-type: none"> <li>• How the sun warms the earth.</li> <li>• The layers of the atmosphere.</li> <li>• Atmospheric pressure.</li> <li>• What influences atmospheric pressure? (size, temperature, elevation, humidity)</li> <li>• Local and planetary winds</li> <li>• Instruments that measure wind and atmospheric pressure</li> <li>• Cloud formation</li> <li>• Formation of the four types of precipitation (rain, hail, snow and sleet)</li> <li>• Air masses and air fronts</li> <li>• High and low air pressure</li> </ul>				

- How to read weather maps.

Since it would be difficult for students to gain an in-depth understanding of all these concepts together, it would be better to reduce the number of concepts. This can be done by eliminating some of the ideas that are not necessary to be included for the other parts of the lesson to be understood. For instance, the sections about “how the sun warms the earth” and “the layers of the atmosphere” do not need to be included for the other concepts to be understood. In addition, instead of explaining how each of the four different types of precipitations is formed, it would be enough to include only two (such as rain and hail).

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>35. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
35.1. <i>Illustrations</i>		X		
35.2. <i>Content</i>			X	
35.3. <i>Activities</i>		X		
35.4. <i>Practice Exercises (N/A)</i>				
35.5. <i>Assessment Exercises</i>			X	
35.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.1. *Illustrations*

There were two main issues with respect to the illustrations in this chapter. The first has to do with the fact that some illustrations needed to be included in order to make the concepts clearer. An example is on page 24 where the process of cloud formation was being explained; this was not accompanied with an illustration which makes it difficult to comprehend especially since there is the use of technical terms in the explanation. Another example is on page 20 where the different types of wind instruments were being explained.

The second main issue in the illustrations is the fact there is no coordination between the text itself and the illustrations due to the lack of labeling. For instance, on pages 12-13 the different positions of the sun’s rays on the earth was being explained and this was accompanied by three different illustrations (representing the three different positions). It would be easier to follow coordinate between the text and the illustration if both had been labeled with numbers. This is also evident on page 24-25 where the three types of clouds are being explained.

One final note is that all the figures in the chapter are unlabeled (e.g. figure 1, figure 2...) which makes it somewhat difficult to align the content in the text with the corresponding illustration.

### 3.2. *Content (extra note)*

In order for the concept of air pressure to be better understood, it would be suggested to

include a brief background about the properties of gas (e.g. the movement of its particles). In addition, there should be a general definition of what *wind* is (this is in fact asked in the assessment questions on page 21, #1 but it is not explained in the text).

### 3.3. Activities

A major drawback in the activities is that there are not enough activities to demonstrate the concepts being presented in the chapter. This is especially important in this chapter because concepts of weather tend to be difficult to grasp. Several activities could be suggested in order to facilitate students' grasp of the concepts. For instance, there are activities that allow students "make" a cloud in a jar; this would make the concept of cloud formation easier to understand. In addition, students can be asked to make their own barometer using certain materials and using it to measure the atmospheric pressure around them. (such activities can be found on the internet)

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>22. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
22.1. <i>Illustrations</i>				X
22.2. <i>Content</i>				X
22.3. <i>Activities</i>				X
22.4. <i>Practice Exercises (N/A)</i>				
22.5. <i>Assessment Exercises</i>				X

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

Comments and explanation on implementing the indicator.

(Please see above)

Additional indicators and other comments.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 5 –Term 2			
		Textbook Title: العلوم : الإبتدائي الخامس الصف الفصل الدراسي الثاني			
		Chapter Title: Chapter 10 Physical and Chemical Changes of Matter الكيميائية للمادة والتغيرات الفيزيائية			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>45. Alignment of the translated texts to the philosophy of the original textbook</b>					
45.1.	<i>Content of the Chapter</i>				X
45.2.	<i>Activities included in the chapter</i>				X
45.3.	<i>Learning objectives</i>		X		
45.4.	<i>Practice exercises (N/A)</i>				
45.5.	<i>Assessment exercises</i>				X
45.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
<p><b>1.3. Learning Objectives</b></p> <p>The book's philosophy emphasizes students' acquisition of higher order science skills such using the scientific method acquiring inquiry and research skills. However, the learning objectives presented in the chapter do not reflect any of these skills; they merely focus on knowledge of the content. This is illustrated by the following objectives taken from this chapter (on page 84A of the teacher's guide):</p> <ul style="list-style-type: none"> <li>• Know that a change of state occurs at specific temperatures.</li> <li>• Predict whether a substance will expand or compress with changes in temperature.</li> <li>• State that compounds are made of two or more elements, and that they have characteristics different than their constituents.</li> </ul> <p>Become familiar with general indications of chemical changes.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>28. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					



28.1.	<i>Length of sentences</i>			X	
28.2.	<i>Complexity of sentences</i>				X
28.3.	<i>Diversity of language structures</i>				X
28.4.	<i>Number of concepts per chapter</i>			X	
28.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
28.6.	<i>Clarity of definitions of technical terms</i>				X
28.7.	<i>Using concrete examples to illustrate concepts</i>				X
28.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>			X	
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>36. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>					
36.1.	<i>Illustrations</i>			X	
36.2.	<i>Content</i>			X	
36.3.	<i>Activities</i>		X		
36.4.	<i>Practice Exercises (N/A)</i>				
36.5.	<i>Assessment Exercises</i>			X	
36.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3					
<p><i>3.1. Illustrations (extra note)</i> The illustration on page 88 would be more appropriate on page 91 because it includes terminologies that are mentioned in the text on the latter page.</p> <p><i>3.3. Activities</i> The activities that are presented in this chapter are appropriate for the science concepts; however, there is one important point worth noting here. The first lesson which deals with physical changes did not present enough examples of physical changes (on page 88). It would be better to include more examples, for instance through an activity in which students have to come up with examples of physical changes from their daily lives. In addition, at the end of the second lesson which deals with chemical changes, it would also be better to include an activity in which students have to differentiate between physical and chemical changes. For instance, they can be provided with a few pictures and they have to identify and justify which ones represent chemical changes and which ones represent physical changes.</p>					

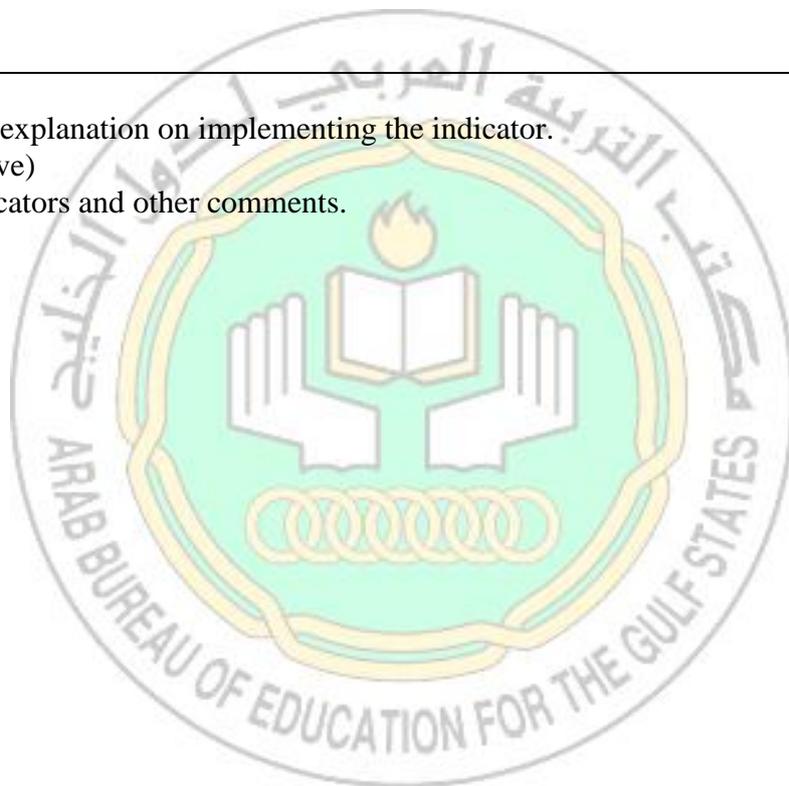


	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>23. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
23.1. <i>Illustrations</i>				X
23.2. <i>Content</i>				X
23.3. <i>Activities</i>				X
23.4. <i>Practice Exercises (N/A)</i>				
23.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

(Please see above)

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 5 –Term 2			
		Textbook Title: العلوم: الإبتدائي الخامس الصف الفصل الدراسي الثاني			
		Chapter Title: Chapter 11 Energy and Machines و الآلات الطاقة			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>46. Alignment of the translated texts to the philosophy of the original textbook</b>					
46.1.	<i>Content of the Chapter</i>			X	
46.2.	<i>Activities included in the chapter</i>				X
46.3.	<i>Learning objectives</i>		X		
46.4.	<i>Practice exercises (N/A)</i>				
46.5.	<i>Assessment exercises</i>				X
46.6.	<i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><b>1.3. Learning objectives</b></p> <p>The book’s philosophy emphasizes students’ acquisition of higher order science skills such using the scientific method acquiring inquiry and research skills. However, the learning objectives presented in the chapter do not reflect any of these skills; they merely focus on knowledge of the content. This is evident from the following objectives taken from the chapter (on page108A of the teacher’s guide):</p> <ul style="list-style-type: none"> <li>• Define work and energy.</li> <li>• Clarify the relationship between work and energy.</li> <li>• Become familiar with the types of simple machines.</li> </ul> <p>Find each of the applied force, force arm, resistance force and resistance arm in simple machines.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>29. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					

29.1.	<i>Length of sentences</i>		X		
29.2.	<i>Complexity of sentences</i>			X	
29.3.	<i>Diversity of language structures</i>				X
29.4.	<i>Number of concepts per chapter</i>		X		
29.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
29.6.	<i>Clarity of definitions of technical terms</i>			X	
29.7.	<i>Using concrete examples to illustrate concepts</i>				X
29.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>			X	

Illustrate by at least one example any indicator of criterion 2 given a score of less than 3

#### 2.1. Length of sentences

There were a few long sentences in this chapter especially in the first lesson entitled “Work and Energy”. An example of this was on page 113:

فإذا أثرت قوة ثابتة المقدار في جسم وتحرك هذا الجسم في أثناء ذلك مسافة ما بتأثير هذه القوة وفي اتجاهها فإن هذه القوة تكون قد أنجزت شغلا على الجسم يمكن حسابه بالعلاقة التالية:  
الشغل = القوة  $\times$  المسافة المقطوعة في اتجاه القوة .

#### 2.4. Number of concepts per chapter

The number of concepts in this chapter is somewhat large for students of grade level 5. Below are all the general concepts presented in the chapter (pp 112-127):

- Work (friction)
- Energy (kinetic energy and potential energy)
- Forms of energy
- Law of conservation of energy
- Simple machines (the application force, resistance force, force arm, resistance arm is discussed for each of the following):
  - Screw
  - Lever (type 1 lever, type 2 lever, type 3 lever)
  - Pulley
  - Inclined plane
  - Wheel and axle
  - Wedge
- Complex machines

There are some ideas mentioned in the chapter that could be eliminated and this would not affect comprehension of the other concepts. By doing this, the number of concepts can be reduced. For instance, it would be sufficient to provide a general explanation of how a lever works without going into the details of each type. Also, the concept of “complex machines” does not need to be presented since the whole lesson is about *simple machines*.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>37. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
37.1. <i>Illustrations</i>			X	
37.2. <i>Content</i>			X	
37.3. <i>Activities</i>		X		
37.4. <i>Practice Exercises (N/A)</i>				
37.5. <i>Assessment Exercises</i>			X	
37.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

3.1. *Illustrations (extra note)*

The illustration on page 120 has too much information some of which is not relevant to the concept it is presenting. It would be better to only include the labels that are relevant to the concept.

3.3. *Activities*

Although the existing activities do in fact adequately serve the science concepts, there is one major drawback with respect to this indicator which is the fact that there should have been more activities that involved *demonstration* of the physical concepts being presented. This should have occurred in several instances. One example is in the second lesson of this chapter entitled “Simple Machines” which deals with the 6 different types of simple machines. The teacher’s guide states that students should be asked to look at the illustrations in the book to figure out how each of the machines works. However, this is not enough for students to fully grasp the concept especially at this grade level. It would be suggested to include demonstrations of how each of the machines works (either done by the teacher or the students themselves). Another suggestion could be to provide students with animations obtained from the internet. This would make the concepts much more attainable to students.

Another comment is that the inquiry activity presented at the beginning of the chapter (p. 111) which is an introductory activity is not relevant at this point of the chapter. This particular activity has to do with exploring the relationship between height and potential energy (which is a concept dealt with later on in the chapter). A more appropriate introductory activity would be for students to explore the relationship between force and distance to work (which is the first concept presented in the chapter).

Finally, there is a need for *more* activities in order to ensure a deeper understanding of the concepts. For instance, it could be suggested for students to make a chart of the 6 different types of machines that shows a labeled diagram of each showing the application force, resistance force, force arm and resistance arm and the uses of each. Also, an activity could be included for students to relate the types of energies and energy conversions to their daily lives by asking them to come up with their own examples.

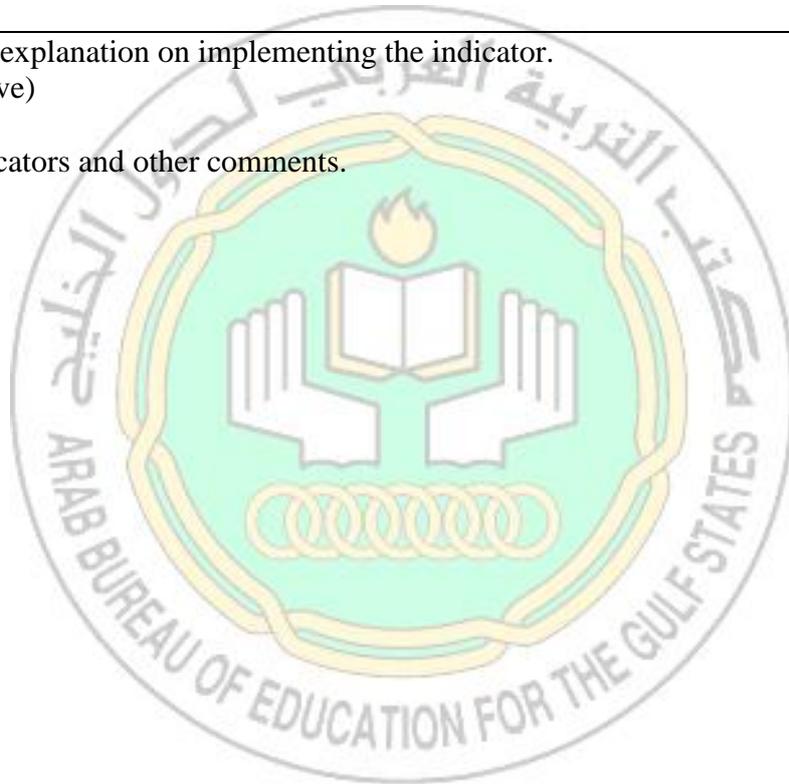
On page 113 of the teacher’s guide, students are asked to “act out” different examples of work. In order for them to gain a deeper understanding of the concept, they could also be asked to give *non-examples* of work.

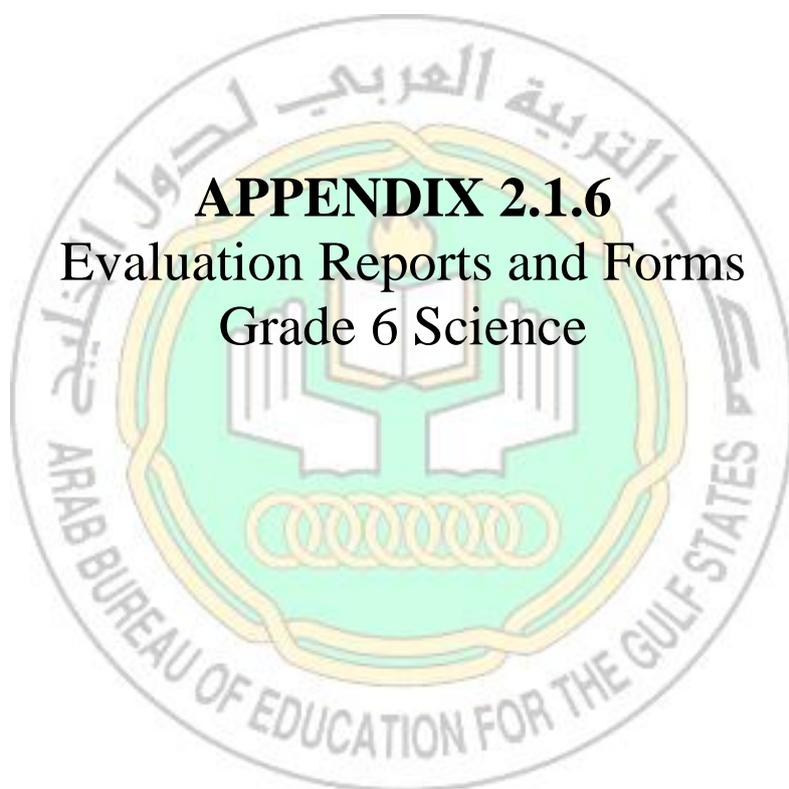


	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>24. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
24.1. <i>Illustrations</i>			X	
24.2. <i>Content</i>				X
24.3. <i>Activities</i>				X
24.4. <i>Practice Exercises (N/A)</i>				
24.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
(Please see above)

Additional indicators and other comments.





**APPENDIX 2.1.6**  
**Evaluation Reports and Forms**  
**Grade 6 Science**



## Table of Contents for Grade 6

Units	English Version	Arabic Version (Semesters 1 and 2)	
	<i>The Scientific Method</i>	الطريقة العلمية	
	<i>Focus on Skills</i>	المهارات العلمية	
	<i>Safety Tips</i>	السلامة تعليمات	
<b>Unit A: Diversity of Life</b>	<b>Unit Literature: Frozen Frogs</b>		
	Chapter 1: Classifying Living Things	<b>Lesson 1: Classifying Plants &amp; Animals</b> Inquiry Skill Builder	Chapter 3: الحياة عمليات النباتات في المخلوقات الحية الدقيقة
		Lesson 2: Plants Reading in Science	
		Lesson 3: Animals Math in Science	
		Lesson 4: Animal Systems Inquiry Investigation	
		Lesson 5: Plant & Animal Adaptations Writing in Science	
		Chapter 1 Review	
	Chapter 2: Cells	Lesson 1: Cell Theory Inquiry Skill Builder	Chapter 4: الحياة عمليات في الحيوانات
		Lesson 2: Plant & Animal Cells Inquiry Investigation	
		Lesson 3: Cell Division Writing in Science/ Math in Science	
		Lesson 4: Microorganisms Reading in Science	
		Chapter 2 Review	
		Careers in Science	
	Chapter 3: Genetics	Lesson 1: How Traits are Controlled Inquiry Skill Builder	Chapter 1: الخلايا
		Lesson 2: Human Genetics Writing in Science/Math in Science	
		Lesson 3: Modern Genetics Inquiry Investigation	
		Lesson 4: Genetic Change over Time Reading in Science	
Chapter 3 Review			
Chapter 4: Ecosystems	Lesson 1: Earth's Ecosystems Inquiry Skill Builder	Chapter 2: الخلية و الوراثة	
	Lesson 2: Food Chains, Webs & Pyramids Inquiry Investigation		
<b>Unit B: Patterns of Life</b>	<b>Unit Literature: Trouble on the Table</b>		
	Chapter 3: Genetics	Lesson 1: How Traits are Controlled Inquiry Skill Builder	Chapter NOT found
		Lesson 2: Human Genetics Writing in Science/Math in Science	
		Lesson 3: Modern Genetics Inquiry Investigation	
		Lesson 4: Genetic Change over Time Reading in Science	
		Chapter 3 Review	
	Chapter 4: Ecosystems	Lesson 1: Earth's Ecosystems Inquiry Skill Builder	Chapter 5: البيئية الأنظمة
		Lesson 2: Food Chains, Webs & Pyramids Inquiry Investigation	
			Lesson 1: و هرم الطاقة الغذائية والشبكات السلاسل



	<i>Lesson 3: Comparing Ecosystems</i> Writing in Science/ <b>Math in Science</b>		<i>Lesson 2: البيئية الأنظمة المقارنة في</i> Writing in Science
	<i>Lesson 4: Changes in Ecosystems</i> <b>Reading in Science</b>		
	Chapter 4 Review		Chapter 5 Review
	<b>Careers in Science</b>		

Units	English Version	Arabic Version (Semesters 1 and 2)		
Unit C: Earth and its Resources	<i>Unit Literature: Understanding Earthquakes</i>			
	Chapter 5: Changes over Time	<i>Lesson 1: Features of the Earth</i> <b>Inquiry Skill Builder</b>	Chapter NOT found	
		<i>Lesson 2: Earth's Moving Continents</i> <b>Math in Science</b>		
		<i>Lesson 3: Forces that Build the Land</i> <b>Reading in Science</b>		
		<i>Lesson 4: Forces that Shape Earth</i> <b>Writing in Science</b>		
		<i>Lesson 5: Changes in Geology over Time</i> <b>Inquiry Investigation</b>		
		Chapter 5 Review		
	Chapter 6: Conserving Our Resources	<i>Lesson 1: Minerals and Rocks</i> <b>Inquiry Skill Builder</b>	Chapter 6: الأرض موارد والحفاظ عليها	
		<i>Lesson 2: Air &amp; Water</i> <b>Writing in Science/ Math in Science</b>		
		<i>Lesson 3: Other Land Resources</i> <b>Reading in Science</b>		<b>Lesson 1: التربة</b>
		<i>Lesson 4: Saving Resources</i> <b>Inquiry Investigation</b>		<i>Lesson 2: الموارد وحماية</i> <b>Reading in Science</b>
		Chapter 6 Review		Chapter 6 Review
		<b>Careers in Science</b>		
	Unit D: Weather and Space	<i>Unit Literature: Monarch Butterflies at Risk</i>		
Chapter 7: Weather and Climate		<i>Lesson 1: The Atmosphere and Weather</i> <b>Inquiry Skill Builder</b>	Chapter NOT found	
		<i>Lesson 2: Precipitation &amp; Clouds</i> <b>Inquiry Investigation</b>		
		<i>Lesson 3: Predicting Weather</i> <b>Reading in Science</b>		
		<i>Lesson 4: Climate</i> <b>Writing in Science/ Math in Science</b>		
		Chapter 7 Review		
Chapter 8: Astronomy		<i>Lesson 1: The Earth-Sun System</i> <b>Inquiry Skill Builder</b>	Chapter 7: والأرض الشمس والقمر	<i>Lesson 1: الشمس و الأرض نظام</i>
		<i>Lesson 2: The Earth-Sun-Moon System</i> <b>Inquiry Investigation</b>		<i>Lesson 2: والقمر الشمس و الأرض نظام</i> <b>Inquiry Skill Builder</b>
		<i>Lesson 3: The Solar System</i> <b>Writing in Science/ Math in Science</b>	Chapter 8:	<b>Chapter 7 Review</b> <i>Lesson 1: الشمسي النظام</i>



		Lesson 4: Stars Writing in Science	الفلك	Lesson 2: المجرات والنجوم Math in Science
		Lesson 5: Galaxies & Beyond Reading in Science		
		Chapter 8 Review		Chapter 8 Review
		Careers in Science		

Units	English Version	Arabic Version (Semesters 1 and 2)		
Unit E: Matter	Unit Literature: Perfectly Preserved			
	Chapter 9: Classifying Matter	Lesson 1: Physical Properties Inquiry Skill Builder	Chapter 9: تصنيف المادة	Lesson 1: للمادة الفيزيائية الخصائص
		Lesson 2: Elements & Compounds Writing in Science/Math in Science		
		Lesson 3: Solids, Liquids & Gases Reading in Science		
		Lesson 4: Water & Mixtures Inquiry Investigation		Lesson 2: والمخاليط الماء: Inquiry Investigation
		Chapter 9 Review		Chapter 9 Review
	Chapter 10: Chemistry	Lesson 1: Chemical Changes Inquiry Skill Builder	Chapter 10: التغيرات والخصائص الكيميائية	Lesson 1: التغيرات الكيميائية:
		Lesson 2: Chemical Properties Inquiry Investigation		Lesson 2: الكيميائية الخصائص: Writing in Science
		Lesson 3: Carbon & Its Compounds Reading in Science		
		Lesson 4: Atoms & Energy Writing in Science/Math in Science		
		Chapter 10 Review		Chapter 10 Review
		Careers in Science		

Unit F: Forces and Energy	Unit Literature: Out of Sight!			
	Chapter 11: Exploring Forces	Lesson 1: Forces & Motion Inquiry Skill Builder	Chapter 11: استعمال القوى	Lesson 1: الحركة
		Lesson 2: Changes in Motion Inquiry Investigation		Lesson 2: والحركة القوى:
		Lesson 3: Work and Energy Reading in Science		
		Lesson 4: How Machines Work Writing in Science/Math in Science		
		Chapter 11 Review		Chapter 11 Review
			Careers in Science	
	Chapter 12: Exploring Energy	Lesson 1: Waves & Sound Inquiry Skill Builder	Chapter 12: الكهرباء والمغناطيس	
		Lesson 2: Properties of Light Reading Science		
		Lesson 3: Light Waves & Color Writing in Science		
		Lesson 4: Heat Math in Science		Lesson 1: الكهرباء
		Lesson 5: Electricity & Magnetism Inquiry Investigation		Lesson 2: المغناطيسية: Math in Science
	Chapter 12 Review	Chapter 12 Review		



Key for color coding:

**- - - - -** Lesson alignment between Arabic and English version

**Yellow highlights:** Things missing in the Arabic version (only in the lessons that are common to both)

**Turquoise highlights:** Things **completely missing** in Arabic version.

**Green highlights:** Lessons take from **grade 5** book





## Report for Table of Contents (Grade 6)

Overall, there is a **very largedifference** between the English and Arabic versions of the table of contents. This is apparent at many levels including: 1) the chapters/lessons that are included; 2) the sequencing and integration of lessons; and 3) the activities found at the end of the lessons or at the beginning of each unit.

1. There are many lessons that are found in the English version but **not** found in the Arabic one (those that are highlighted in turquoise). Some of these lessons include: lessons 1, 3 and 5 from chapter 1 “Classifying Living Things” and lessons 1, 2 and 3 from chapter 6 “Conserving Our Resources”. In addition, chapter 5 “Changes over Time” and chapter 7 “Weather and Climate” are both completely missing from the Arabic version.

2. In the first semester of the Arabic version (specifically from chapters 1 to 4), the sequencing of the lessons and chapters is **completely different** from that of the English version. For instance, the chapter entitled “Cells” is chapter 1 in the Arabic version but it is chapter 2 in the English version. The integration of lessons in the Arabic version is also **very different** to that of the English version. For instance, lesson 1 in chapter 2 “Cells and Heredity” of the Arabic version corresponds to lesson 3 from chapter 2 “Cells” of the English version. In addition, there are instances where two or more lessons from the English version are combined together to form one lesson in the Arabic version. For example, lesson 2 “Heredity and Traits” of chapter 2 of the Arabic version consists of a combination of lesson 1 “How traits are controlled” and lesson 2 “Human Genetics” in chapter 3 in the English version. (Please see the red dotted arrows for the sequencing and integration of lessons.)

In addition, two of the lessons and one chapter found in the Arabic version are taken from the Grade 5 textbook. Specifically, lesson 2 entitled “Movement and Sensation Processes” of Chapter 4 of the Arabic version was taken from a part of chapter 1 lesson 5 “Animal Systems” in the English version and lesson 1 “Soil” in chapter 6 of the Arabic version was taken from Chapter 6 lesson 2 in the English version. Finally, chapter 11 “Using Forces” is taken from chapter 11 in the grade 5 book.

Finally, there are three chapters in the English version that are each split into two separate chapters in the Arabic version. For instance, chapter 1 “Classifying Living Things” in the English version is split into chapter 3 “Life Processes in Plants and Microorganisms” and chapter 4 “Life Processes in Animals” in the Arabic version. Another example is chapter 2 “Cells” of the English version which is split into chapter 1 “Cells” and chapter 2 “Cells and Heredity” in the Arabic version.

3. In the lessons that are common between the Arabic and English versions, there are **many differences** in the end of the lesson activities that are included (highlighted in yellow). More specifically, at the end of each lesson of the English version there is always either one of the following activities: Inquiry Investigation, Inquiry Skill Builder, Math in Science, Writing in Science or Reading in Science. However, in the Arabic version the *whole chapter* contains only *one* of these activities (rather than at the end of every lesson as is with the English version). It should be noted here that the activities *within* the lessons themselves are **exactly identical** in both versions. In addition, the “careers in science” is found in every other chapter in the English version (i.e. a total of SIX times) while it is only found ONCE in the Arabic version (at the end of chapter 11). Finally, at the beginning of every unit in the English



version there is a section entitled “Unit Literature” which includes some scientific excerpt that students must read and reflect on. This is **completely missing** in the Arabic version.





<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 6		Semester: 1		
		Textbook Title: العلوم: الإبتدائي السادس الصف الفصل الدراسي الأول				
		Chapter Title: الخامس الفصل الأنظمة البيئية				
		Completely different	Large difference	Little difference	Difference due only to culture	No difference
<b>Criterion/Indicator</b>						
<b>47. Agreement of the translated Arabic book with that of the English book</b>						
47.1. Definitions and explanations in the chapter				X	X	
47.2. Activities included in the chapter				X		
47.3. Learning objectives(N/A)						
47.4. Practice exercises(N/A)						
47.5. Assessment exercises				X		
47.6. Figures, pictures and illustrations				X	X	

**Note:**

Anything highlighted in the photocopied chapters represents *differences* between the English and Arabic version. The following is a key for the color coding in the chapters:

- *Pink* highlights: difference in scientific terms
- *Blue* highlights: difference in content or explanation
- *Yellow* highlights: difference in activities
- *Orange* highlights: difference in illustrations

*1.1 Definitions and explanations in the chapter*

Overall, the explanations found in both the Arabic and English versions were almost exactly identical. There were only a few minor differences whereby some of the content was omitted in the Arabic version; however, these were very minimal and minor. For instance, on page 198 of the English version it is mentioned that phytoplankton grow “near the ocean’s surface” which is not mentioned in the corresponding text of the Arabic version (page 124). Another example is on page 201 of the English version where it is mentioned that “the bee receives nutrients it needs from nectar” which is not mentioned in the Arabic version (page 127).

In addition, the Arabic version contained some minor additional details that were not found in the English version such as on page 124 where it is mentioned that living organisms get their energy from the sun **either directly or indirectly**.



There were also a few instances where the translation to Arabic did not portray the exact meaning of the English version. For instance, on page 200 of the English version it is stated that “carnivores **usually** eat more than one kind of animal”. The word usually is not mentioned in the corresponding text of the Arabic version (page 126).

Finally, there were some minor differences due to culture. For instance, on page 211 of the English version an example of the Sonoran desert in Arizona, California and Mexico is given while in the Arabic version on page 135 the Gulf States desert is given as an example. In addition, some of the content was deleted for cultural purposes such as the explanation of how the first immigrants in North America took over the prairies and caused changes in the grasslands (page 212).

***Extra note:*** The list of scientific terms found at the beginning of the Arabic chapter (121) is not exactly identical to the list of the terms found at the beginning of the English chapter (182). However, this is due to the fact that some lessons in the English chapter are not included in the Arabic one.

### 1.2. Activities included in the chapter

Most of the activities found in the English version are also found in the Arabic version with the exception of *two*. The first activity found on page 204 of the English version entitled “What factors affect the carbon cycle” is not included in the Arabic version due to the fact that the carbon cycle is not explained in the Arabic text. The second activity is that on page 219 which is “Math in science: How much water do people use each day?” This is not included in the Arabic version although the topic is relevant to the Arabic text.

### 1.3. Learning Objectives (N/A)

The learning objectives for this book are found in the *teacher’s guide* which is not available.

### 1.4. Practice exercises (N/A)

There are no practice exercises in this book.

### 1.5. Assessment exercises

The assessment exercises found at the end of each lesson are exactly identical in both the English and Arabic versions. Only minor differences were evident in the end of the chapter exercises whereby there were *additional* exercises found in the Arabic version which were not found in the English version. An example is some of the items in the “fill in the blanks” on page 142. However, this difference is only due to the fact that there are two lessons in the English version that are not dealt with in the Arabic version. Thus, additional exercises were added to compensate for the missing ones.

In addition, the same *types* of assessment exercises were included in both versions but with changes made to suit the content. For instance, the personal narrative question on page 235 of the English version states “Write a personal narrative about the way you interact with organisms in your environment” while the Arabic version states to write a narrative about the type of biome they are living in.

### 1.6. Figures, pictures and illustrations

In general, all the diagrams and illustrations in the Arabic version are exactly the same as the ones found in the English version. In fact, most of the differences in the illustrations



are due to culture. For instance, pictures of American girls and boys on pages 197 and 207 are replaced with pictures of The Gulf States boys in the Arabic version (pages 123 and 131 respectively). In addition, on page 196 of the English version a picture of a moose and a wolf in Alaska is shown while in the Arabic version a picture of a dolphin and a fish is shown instead (page 122).

Finally, there was only *one* illustration found in the English version but not the Arabic version which is the picture of great egrets on page 215. However, this did not affect the scientific meaning in any way.





<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 6	Semester: 2			
		Textbook Title: العلوم: الإبتدائي السادس الصف الفصل الدراسي الثاني				
		Chapter Title: الثامن الفصل الغالك				
		Completely different	Large difference	Little difference	Difference due only to culture	No difference
<b>Criterion/Indicator</b>						
<b>48. Agreement of the translated Arabic book with that of the English book</b>						
48.1.	<i>Definitions and explanations in the chapter</i>		X			
48.2.	<i>Activities included in the chapter</i>		X			
48.3.	<i>Learning objectives(N/A)</i>					
48.4.	<i>Practice exercises(N/A)</i>					
48.5.	<i>Assessment exercises</i>					X
48.6.	<i>Figures, pictures and illustrations</i>			X	X	

**Note:**

Anything highlighted in the photocopied chapters represents **differences** between the English and Arabic version. The following is a key for the color coding in the chapters:

- *Pink* highlights: difference in scientific terms
- *Blue* highlights: difference in content or explanation
- *Yellow* highlights: difference in activities
- *Orange* highlights: difference in illustrations

**1.1 Definitions and explanations in the chapter**

This chapter consists of two lessons. The content and explanations in the first lesson entitled “The Solar System” (page 36) are exactly the same as those found in the English version of the same corresponding lesson (page 444).

The major difference in content and explanations is found in lesson 2 “Stars and Galaxies” (page 46). This lesson is in fact an integration lesson 4 “Stars” and lesson 5 “Galaxies and Beyond” of the English version. Thus, a large amount of the content was eliminated or reduced in the Arabic version. Some examples of the reductions/eliminations in content are presented below:

- The paragraph about parallax on page 459 is omitted
- The section about “Brightness and Temperature” of a star on page 461 (including the concept of the H-R diagram) is omitted



- A two-page description of how stars develop is provided in the English version (pages 462-463) while many of the details are reduced to form only one page in the Arabic version (page 51).
- The one and a half page explanation of the “big bang” on pages 472-473 of the English version is reduced to a half page explanation in the Arabic version (page 55).

***Extra note:*** The list of scientific terms found at the beginning of the Arabic chapter (35) is not exactly identical to the list of the terms found at the beginning of the English chapter (418). However, this is due to the fact that some lessons in the English chapter are not included in the Arabic one.

### *1.2. Activities included in the chapter*

About half of the activities found in the English version are **not** found in the Arabic version and they include the following:

- Writing in Science: Is Pluto a Planet? on page 454
- Quick Lab: How Parallax Works on page 459 (the concept of parallax is not found in the Arabic text)
- Writing in Science: Colors of Stars on page 467
- Inquiry Activity: How are galaxies classified? On page 469
- Reading in Science on page 476

### *1.3. Learning Objectives (N/A)*

The learning objectives for this book are found in the *teacher's guide* which is not available.

### *1.4. Practice exercises (N/A)*

There are no practice exercises in this book.

### *1.5. Assessment exercises*

The assessment exercises found in the Arabic version are exactly identical to those found in the English version.

### *1.6. Figures, pictures and illustrations*

Although most of the pictures are the same in both the English and Arabic versions, there were **two** illustrations that were changed in the Arabic version for cultural purposes. The first one is that on page 47 of the Arabic version which shows a picture of two The Gulf States boys rather than a picture of an American boy and girl (page 457 of the English version). The second illustration is that of the Milky Way which was taken from a forest in Arizona (page 470) and this is replaced with a picture of the Milky Way taken from an Arab region (page 53).

Another minor difference in the illustrations is that **two** of them are found in the English version but not in the Arabic one and these two pictures are: the parallax picture on page 459 and the H-R diagram on page 461. However, it should be noted that the omission of these illustrations is due to the fact that the concepts of “parallax” and “H-R diagrams” are not dealt with in the Arabic text.



## Synthesis Report for Science Book Grade 6- Term 1

The following is an evaluation report which summarizes the strengths and weaknesses of a set of Science textbooks for Grade 6 (first term). This set of books, consisting of the student's textbook and the student's activity book, was translated to Arabic from the Macmillan/McGraw-Hill Science series. The textbooks comprise of three units with two chapters each, thus making a total of six chapters. These chapters deal with diverse topics in Science. In order to obtain an adequate representation of the set of textbooks, three chapters were randomly chosen for evaluation: one chapter from each unit. This report provides a synthesis of the evaluation of the following three chapters: chapter 1 "Cells"; chapter 4 "Life Processes in Animals"; and chapter 5 "Ecosystems".

Prior to this report, an evaluation form was filled out for each of the aforementioned chapters. The evaluation forms consisted of four rubrics that corresponded to four different evaluation criteria: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the science concepts; and (4) suitability of the translated textbooks to the cultural context of The Gulf States. Each criterion comprised of a set of indicators which were evaluated based on the following scale: 1 (no evidence), 2 (little evidence), 3 (almost satisfactory evidence) and 4 (satisfactory evidence). The following report capitalizes on the strengths and weaknesses of each of the four criteria found in the evaluation forms for all the three evaluated chapters.

### *Criterion 1: Alignment of the translated texts to the philosophy of the original textbook*

Most of the indicators in this criterion were adequately aligned with the philosophy of the book, namely the content, activities, skills and assessment exercises. However, the learning objectives presented a major area of weakness for this criterion. More specifically, they only reflected knowledge and comprehension of the content rather than focusing on the use of higher order scientific skills which was something emphasized in the philosophy. For the sake of illustration, the objectives for chapter 1 "Cells" are presented below (on page 18C of the teacher's guide):

- Understand that cells are the essential building blocks of all living organisms
- Clarify how cells, tissues, organs and organ systems function together to perform life's activities.
- Differentiate between plant and animal cells.
- Discuss the processes of photosynthesis and respiration.

As is evident, attainment of the learning objectives does not require going beyond the content of the chapters. However, the lack of emphasis of higher order thinking in the objectives is compensated by the emphasis of the latter in the assessment exercises, activities and skills. This was one of the areas of strength in the three evaluated chapters of this book. The activities included in the student's book and teacher's guide require the use of inquiry, the scientific method (such as making observations, formulating hypotheses, designing experiments and drawing conclusions) and research skills. In addition, the assessment exercises require application of concepts and going beyond the scope of the book.



Another major positive area with respect to this criterion is the fact that the student has a central role in the teaching and learning process which was something mentioned in the philosophy. This was very evident in the teachers' book whereby all the activities involve the students extracting information on their own by reading the text, interpreting illustrations (which is also something emphasized in the book) and engaging in experiments. In addition, rather than giving students the information as is, the teachers are provided with probing and guiding questions to trigger students' responses about the content. The activities also cater for individual difference in learning styles and abilities, which is something also emphasized in the philosophy.

*Criterion 2: Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students*

Overall, the Arabic language in all three of the chapters was suitable for the educational level of grade 6 students. Reading the text can be done very easily due to the simplicity in sentence structure and vocabulary usage. In addition, the presence of unnecessary details was very rare and the terms were adequately defined. The major shortcoming in this criterion was in the number of concepts presented. More specifically, all three of the evaluated chapters presented a very large number of concepts. To illustrate this, the following is a list of the general concepts dealt with in chapter 5 "Ecosystems" (pp 124-139):

- What is a food chain?
  - Producers
  - Consumers (primary, secondary and tertiary)
  - Decomposers
- What are food webs?
  - Predators and preys
- What is the energy pyramid?
- What are biomes?
  - Climatic conditions
  - Land biomes:
    - ✓ Tundra
    - ✓ Taiga
    - ✓ Desert
    - ✓ Grasslands
    - ✓ Rainforests
  - Water biomes:
    - ✓ Lakes and ponds
    - ✓ Rivers and streams
    - ✓ Moist lands (swamps)
    - ✓ Oceans

It should also be noted that the concepts were presented in a relatively limited number of pages and thus they were presented very superficially. In addition, the teacher's guide states that the time allotted for each chapter is 4-6 hours only. This is unsuitable for students of this grade level since it might hinder their ability to gain an in-depth understanding of the concepts. Thus, it would be more ideal to focus on only a few concepts by reducing the number of concepts in the chapter. Having more focused and in-depth explanations would ensure enhanced conceptual understanding for the students. For instance, for the above



chapter, it is not necessary to discuss *all* the different types of land and water biomes. It would be sufficient to focus on 4-5 main ones.

*Criterion 3: Suitability of the Arabization of the translated textbooks to serve the math and science concepts*

Generally speaking, the Arabization of the content, activities, assessment exercises and skills was suitable for the science concepts presented in the three chapters. The most lacking feature in this criterion is in the illustrations of two of the evaluated chapters (chapters 1 and 4). Although some of the illustrations did adequately serve the science concepts, there were a few setbacks with respect to this indicator. First of all, in some instances there was a lack of alignment between the illustrations and the text content. For instance, in chapter 1 “Cells” there are some labels found on the illustration of the animal cell which are not mentioned in the text (endoplasmic reticulum, Golgi bodies and ribosomes; p. 30). Also, the term “plasma membrane” is mentioned in the text but not labeled on the illustration. This was also evident in chapter 4 “Life Processes in Animals” whereby on page 99 the labels on the digestive system of the human body and the earthworm included a lot of terms that were not even mentioned in the text.

Another issue with respect to the illustrations is that some concepts required an illustration for further clarification; however, this was not provided. For example, in chapter 4 “Life Processes in Animals” there were a lot of concepts that cannot be made clear without illustrations such as the respiratory systems of different vertebrates and invertebrates and the difference between a closed and open circulatory system (pages 100-102). Another example is in chapter 1 “Cells” where on page 33 the process of osmosis was being explained in detail in the text; however, this step-by-step explanation was not accompanied with an illustration which makes it difficult to visualize the concept.

A final comment worth mentioning here with respect to the illustrations is the fact that the illustrations are not numbered (e.g. figure 1, figure 2...etc). Labeling the figures would allow students to easily spot the illustration that the text is referring to.

Finally, a couple of points are also worth mentioning in terms of this criterion. First, although all the activities were very appropriate for the science concepts, there was a minor setback in the activities of chapter 4 “Life Processes of Animals”. More specifically, there weren’t *enough* activities included for students to gain deep conceptual understanding. Thus, it would be necessary to include more activities; for instance, students can be asked to make a model (or shown a demonstration) of how respiration occurs (see evaluation report for more suggestions). However, this setback was only evident in this chapter. Second, there was a lack of linkages made between the concepts presented in the individual lessons of a chapter. Providing such linkages would allow a more comprehensive view of the concepts by allowing students to see the relationships between concepts. For instance, in chapter 5 “Ecosystems” the concepts of food chain and food web are explained in lesson 1 and the concept of biomes is explained in lesson 2. Relations between these two lessons can be made by asking students to determine the food chains and food webs found in different biomes.

*Criterion 4: Suitability of the translated textbooks to the cultural context of The Gulf States*

All three of the evaluated chapters were very satisfactory in terms of the cultural relevance of their content, illustrations, activities and assessment exercises. Attempts at referring to the Gulf States culture were made where pertinent or relevant. For example, in chapter 5 “Ecosystems” there is reference to a preserve that is located in The Gulf States (p. 141).



## Philosophy for Grade 6 Science Book (Terms 1& 2)

This Grade 6 Science book is part of a project that aims to improve the teaching and learning of math and science where the **student has a central role in the teaching and learning process.**

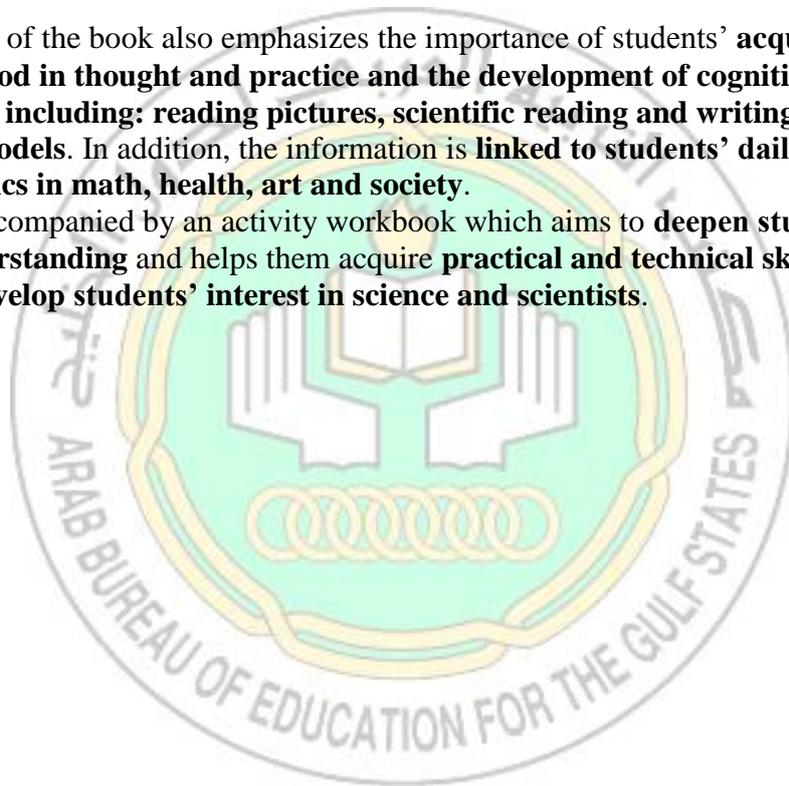
This book consists of two parts, each consisting of three units. The three units in the first part are: “Diversity of Life”, “Life’s Processes” and “Ecosystems and Resources”. The second part consists of the following units: “Space”, “Matter” and “Power and Energy”.

The book presents things in an **interesting way using effective educational methods** which reflect the curriculum and its philosophy.

In addition, the content consists of **activities which cover various levels of difficulty and cater for students’ individual differences.** Also, the **illustrations are clear and reflect the content of the chapter or unit.** The lessons, chapters and units all **emphasize formative assessment.**

The philosophy of the book also emphasizes the importance of students’ **acquisition of the scientific method in thought and practice and the development of cognitive and practical skills including: reading pictures, scientific reading and writing, and drawing and making models.** In addition, the information is **linked to students’ daily lives by relating to topics in math, health, art and society.**

This book is accompanied by an activity workbook which aims to **deepen students’ scientific understanding** and helps them acquire **practical and technical skills in science.** It also aims to **develop students’ interest in science and scientists.**





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 6 –Term 1			
		Textbook Title: العلوم: الإبتدائي السادس الصف الفصل الدراسي الأول			
		Chapter Title: Chapter 1 “Cells” الخلايا			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>49. Alignment of the translated texts to the philosophy of the original textbook</b>					
49.1.	<i>Content of the Chapter</i>			X	
49.2.	<i>Activities included in the chapter</i>				X
49.3.	<i>Learning objectives</i>		X		
49.4.	<i>Practice exercises (N/A)</i>				
49.5.	<i>Assessment exercises</i>				X
49.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
<p><b>1.3. Learning Objectives</b></p> <p>The learning objectives found in the teacher’s guide do not reflect the higher order thinking scientific skills that are emphasized in the philosophy. For the sake of illustration, the objectives for both lessons of this chapter are presented below (on page 18C of the teacher’s guide):</p> <ul style="list-style-type: none"> <li>• Understand that cells are the essential building blocks of all living organisms</li> <li>• Clarify how cells, tissues, organs and organ systems function together to perform life’s activities.</li> <li>• Differentiate between plant and animal cells.</li> <li>• Discuss the processes of photosynthesis and respiration.</li> </ul> <p>As is evident from these objectives, there is an emphasis on only knowledge and comprehension of the content.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>30. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
30.1.	<i>Length of sentences</i>				X



30.2.	<i>Complexity of sentences</i>				X
30.3.	<i>Diversity of language structures</i>				X
30.4.	<i>Number of concepts per chapter</i>		X		
30.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
30.6.	<i>Clarity of definitions of technical terms</i>				X
30.7.	<i>Using concrete examples to illustrate concepts</i>			X	
30.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>				X

Illustrate by at least one example any indicator of criterion 2 given a score of less than 3

#### 2.4. *Number of concepts per chapter*

This chapter is divided into two lessons: lesson 1 “The Cell Theory” and lesson 2 “Plant and Animal Cell”. The number of concepts in this chapter as a whole is somewhat big for students of this grade level. Below are all the general concepts dealt with in the whole chapter (pp22-36):

- History of discovering the cell (the cell theory)
- Organization of the body into: cells, tissues, organs and organ systems
- Compounds and elements that make up a cell (proteins, carbohydrates, lipids...etc)
- Structure of animal cell
- Structure of plant cell
- Passive transport (osmosis & diffusion)
- Photosynthesis
- Respiration (aerobic and anaerobic)
- Active transport

It should also be noted that presenting too much information in a limited number of pages does not allow an in-depth understanding of the concepts. Thus, it would be suggested to reduce the number of concepts in the chapter.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>38. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
38.1. <i>Illustrations</i>		X		
38.2. <i>Content</i>			X	
38.3. <i>Activities</i>			X	
38.4. <i>Practice Exercises (N/A)</i>				
38.5. <i>Assessment Exercises</i>			X	
38.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.1. Illustrations

Although some of the illustrations did adequately serve the science concepts, there were a few setbacks with respect to this indicator. First and foremost, there is a lack of alignment between some of the illustrations and the text content. For instance, on page 30 there are some labels found on the illustration of the animal cell which are not mentioned in the text (endoplasmic reticulum, golgi bodies and ribosomes). Also, the term “plasma membrane” is mentioned in the text but not labeled on the illustration.

Another issue is the fact that on page 33 the process of osmosis is being explained in detail; however, this step-by-step explanation is not accompanied with an illustration which makes it difficult to visualize the concept. In fact, the illustration that is supposed to represent osmosis (on page 33) doesn’t clearly portray the process. Furthermore, some of the pictures that were included were not clear, specifically those on pages 32 and 33 which depict the processes of osmosis and diffusion.

A final issue with respect to this indicator is the fact that the illustrations are not numbered as figure 1, figure 2...etc This also hinders the alignment between the illustrations and the text.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>25. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
25.1. <i>Illustrations</i>				X
25.2. <i>Content</i>				X
25.3. <i>Activities</i>				X
25.4. <i>Practice Exercises (N/A)</i>				
25.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
(Please see above)

Additional indicators and other comments.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 6 –Term 1			
		Textbook Title: العلوم: الإبتدائي السادس الصف الفصل الدراسي الأول			
		Chapter Title: Chapter 4 Life Processes in Animals عمليات الحياة في الحيوانات			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>50. Alignment of the translated texts to the philosophy of the original textbook</b>					
50.1.	Content of the Chapter				X
50.2.	Activities included in the chapter				X
50.3.	Learning objectives		X		
50.4.	Practice exercises (N/A)				
50.5.	Assessment exercises			X	
50.6.	Skills				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
<p><b>1.3. Learning Objectives</b></p> <p>The learning objectives found in the teacher’s guide do not reflect the higher order thinking scientific skills that are emphasized in the philosophy. In fact, the learning objectives only focus on content knowledge and comprehension. For the sake of illustration, the objectives for both lessons of this chapter are presented below (on page 94A of the teacher’s guide):</p> <ul style="list-style-type: none"> <li>Specify how animal systems undergo processes of digestion, excretion, respiration and circulation.</li> <li>Compare between the digestive, excretory, respiratory and circulatory systems of vertebrates and invertebrates.</li> <li>Summarize the functions of each of the skeletal, muscular, nervous and endocrine systems.</li> </ul> <p>Describe how the skeletal and muscular systems cause body movement.</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>31. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
31.1. <i>Length of sentences</i>			X	
31.2. <i>Complexity of sentences</i>				X
31.3. <i>Diversity of language structures</i>				X
31.4. <i>Number of concepts per chapter</i>		X		
31.5. <i>Reuse of technical terms in subsequent chapters</i>				X
31.6. <i>Clarity of definitions of technical terms</i>				X
31.7. <i>Using concrete examples to illustrate concepts</i>				X
31.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>				X
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p>2.4. <i>Number of concepts per chapter</i>            The number of concepts in this chapter is too large for students of this grade level. Below is a list of the general concepts dealt with in this chapter (pp 96-114):</p> <ul style="list-style-type: none"> <li>• What is digestion? What is excretion?               <ul style="list-style-type: none"> <li>- Digestion and excretion in invertebrates</li> <li>- Digestion and excretion in vertebrates</li> </ul> </li> <li>• What is respiration?               <ul style="list-style-type: none"> <li>- Respiration in invertebrates</li> <li>- Respiration in vertebrates</li> </ul> </li> <li>• What is circulation?               <ul style="list-style-type: none"> <li>- Warm-blooded vs cold-blooded organisms</li> <li>- The parts of the circulatory system</li> </ul> </li> <li>• What is the skeletal system? What is the muscular system?</li> <li>• What is the nervous system? What is the endocrine system?</li> <li>• How do the human body systems interact?</li> <li>• How to take care of your health:               <ul style="list-style-type: none"> <li>- Exercise</li> <li>- Bodily hygiene</li> <li>- Sleep</li> </ul> </li> </ul> <p>As is evident, students are presented with too much information which may be overwhelming for them. In addition, this having too many concepts will not ensure adequate conceptual understanding. Thus, it would be better to reduce the number of concepts by eliminating some of the systems that are dealt with or by focusing on either vertebrates or invertebrates.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>39. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
39.1. <i>Illustrations</i>		X		
39.2. <i>Content</i>			X	
39.3. <i>Activities</i>		X		
39.4. <i>Practice Exercises (N/A)</i>				
39.5. <i>Assessment Exercises</i>			X	
39.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.1. Illustrations

A major issue in this indicator is the fact in several instances the concepts presented in the text required an illustration; however, this was not provided. An example is on page 99 where the structures of different digestive systems of invertebrates were being explained. Also, on pages 100-102 there were a lot of concepts that cannot be made clear without illustrations such as the respiratory systems of different vertebrates and invertebrates (only the human one is shown) and the closed and open circulatory system. Thus, it would be necessary to include illustrations to provide further support of the concepts. In fact this can be easily achieved since a lot of the pictures included are not necessary to be included (such as on page 100...).

In addition some of the pictures were unclear and thus did not adequately serve the purpose of clarifying the content. For instance, on page 109 the picture showing the flexion and extension of muscles is unclear. Another minor issue is that on page 99 the labels on the illustration of the digestive system of the human body and the earthworm includes a lot of terms that are not even mentioned in the text. Finally, all the illustrations are not labeled (e.g. figure 1, figure 2....)

### 3.3. Activities

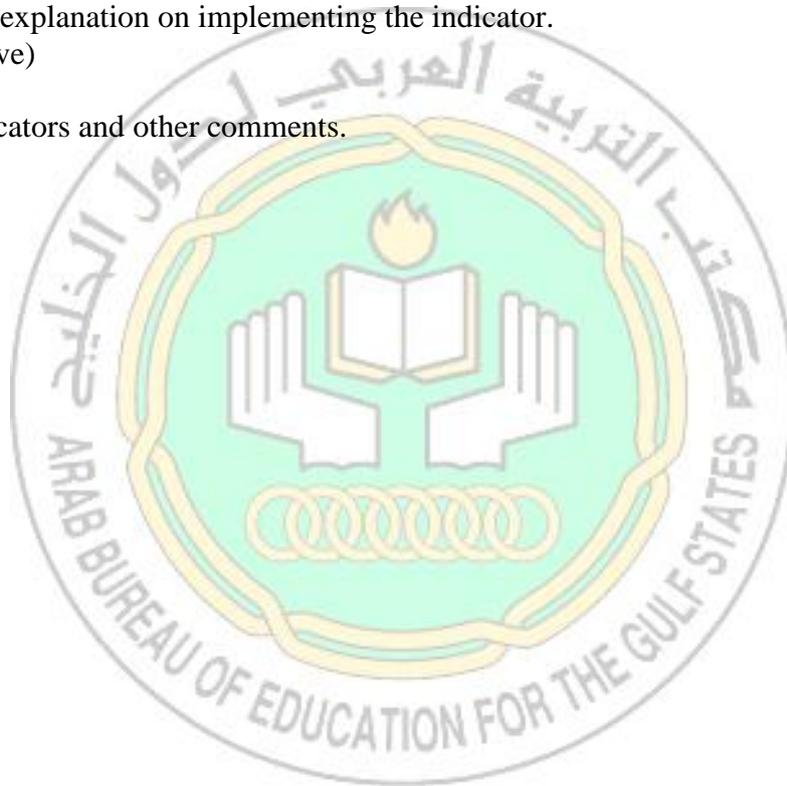
Although the activities included in this chapter are suitable for the science concepts, a major weakness is the fact that there weren't *enough* activities included for students to gain deep conceptual understanding. Other than the activities included in the students' activity book, many of the activities suggested in the teacher's guide involved asking students to *read* the information from the text; however, this is not enough for students to fully grasp certain concepts. Thus, it is necessary to include more activities such as demonstrations that portray different processes in the bodily systems. For instance, students can be asked to make a model (or shown a demonstration) of how respiration occurs. In addition, at the end of the chapter (or even the beginning), students can be divided into groups and each group can be asked to make a poster about one of the body systems which shows the important organs of that system, a description of their function and importance, the interaction between that system and other systems and how to keep that particular system healthy.



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>26. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
26.1. <i>Illustrations</i>			X	
26.2. <i>Content</i>				X
26.3. <i>Activities</i>				X
26.4. <i>Practice Exercises (N/A)</i>				
26.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
(Please see above)

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 6 –Term 1			
		Textbook Title: العلوم: الإبتدائي السادس الصف الفصل الدراسي الأول			
		Chapter Title: Chapter 5 Ecosystems البيئية الأنظمة			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>51. Alignment of the translated texts to the philosophy of the original textbook</b>					
51.1. Content of the Chapter				X	
51.2. Activities included in the chapter					X
51.3. Learning objectives			X		
51.4. Practice exercises (N/A)					
51.5. Assessment exercises					X
51.6. Skills					X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
1.3. Learning Objectives					
The learning objectives found in the teacher’s guide do not reflect the higher order thinking scientific skills that are emphasized in the philosophy. In fact, the learning objectives only focus on content knowledge and comprehension. For the sake of illustration, the objectives for both lessons of this chapter are presented below (on page 120C of the teacher’s guide):					
<ul style="list-style-type: none"> <li>• Compare the roles of producers, consumers and decomposers in the ecosystem.</li> <li>• Describe how energy is transferred in the food chain and food web.</li> <li>• Clarify how climate affects the living organisms in a certain biome.</li> </ul>					
Compare the climatic conditions amongst the different types of biomes.					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>32. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
32.1. Length of sentences				X	
32.2. Complexity of sentences					X
32.3. Diversity of language structures					X
32.4. Number of concepts per chapter			X		



32.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
32.6.	<i>Clarity of definitions of technical terms</i>				X
32.7.	<i>Using concrete examples to illustrate concepts</i>				X
32.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>			X	

Illustrate by at least one example any indicator of criterion 2 given a score of less than 3

#### 2.4. Number of concepts per chapter

This chapter consists of two lessons: lesson 1 “Food chains, Food webs and the Energy Pyramid” and lesson 2 “Comparing Ecosystems”. Although the number of concepts in the first lesson is somewhat acceptable, the number of concepts in the second lesson is considerably large. Thus, the chapter as a whole has too many concepts; this makes it not suitable for students of this grade level. To illustrate this, the following is a list of the general concepts dealt with in this chapter (pp 124-139):

##### Lesson 1:

- What is a food chain?
  - Producers
  - Consumers (primary, secondary and tertiary)
  - Decomposers
- What are food webs?
  - Predators and preys
- What is the energy pyramid?

##### Lesson 2:

- What are biomes?
  - Climatic conditions
  - Land biomes:
    - ✓ Tundra
    - ✓ Taiga
    - ✓ Desert
    - ✓ Grasslands
    - ✓ Rainforests
  - Water biomes:
    - ✓ Lakes and ponds
    - ✓ Rivers and streams
    - ✓ Moist lands (swamps)
    - ✓ Oceans

As is evident, there are a large number of concepts presented in this chapter, specifically in lesson 2. It is therefore suggested to reduce the number of concepts by eliminating some of the biomes. It is not necessary to go through every biome individually with its characteristics. For example, it would be sufficient to focus on 4-5 biomes (from both the land and water biomes). This would also ensure a deeper understanding of concepts.



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>40. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
40.1. <i>Illustrations</i>				X
40.2. <i>Content</i>				X
40.3. <i>Activities</i>				X
40.4. <i>Practice Exercises (N/A)</i>				
40.5. <i>Assessment Exercises</i>				X
40.6. <i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>27. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
27.1. <i>Illustrations</i>				X
27.2. <i>Content</i>				X
27.3. <i>Activities</i>				X
27.4. <i>Practice Exercises (N/A)</i>				
27.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
(Please see above)

Additional indicators and other comments.



## Synthesis Report for Science Book Grade 6- Term 2

The following is an evaluation report which summarizes the strengths and weaknesses of a set of Science textbooks for Grade 6 (second term). This set of books, consisting of the student's textbook and the student's activity book, was translated to Arabic from the Macmillan/McGraw-Hill Science series. The textbooks comprise of three units with two chapters each, thus making a total of six chapters. These chapters deal with diverse topics in Science. In order to obtain an adequate representation of the set of textbooks, three chapters were randomly chosen for evaluation: one chapter from each unit. This report provides a synthesis of the evaluation of the following three chapters: chapter 7 "The Sun, Earth and Moon"; chapter 9 "Classifying Substances"; and chapter 10 "Using Force".

Prior to this report, an evaluation form was filled out for each of the aforementioned chapters. The evaluation forms consisted of four rubrics that corresponded to four different evaluation criteria: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the science concepts; and (4) suitability of the translated textbooks to the cultural context of The Gulf States. Each criterion comprised of a set of indicators which were evaluated based on the following scale: 1 (no evidence), 2 (little evidence), 3 (almost satisfactory evidence) and 4 (satisfactory evidence). The following report capitalizes on the strengths and weaknesses of each of the four criteria found in the evaluation forms for all the three evaluated chapters.

### Criterion 1: Alignment of the translated texts to the philosophy of the original textbook

Most of the indicators in this criterion were adequately aligned with the philosophy of the book, namely the content, activities, skills and assessment exercises. However, the learning objectives presented a major area of weakness for this criterion. More specifically, they only reflected knowledge and comprehension of the content rather than focusing on the use of higher order scientific skills which was something emphasized in the philosophy. In order to illustrate this, the following is the list of learning objectives for chapter 10 "Using Forces" (on page 110A of the teacher's guide):

- Show the relationship amongst position, motion, speed and velocity.
- Calculate velocity.
- Clarify the meanings of equilibrium and disequilibrium of forces.
- Become familiar with the effects of gravity and friction on motion.
- Become familiar with Newton's three laws of motion.

As is evident, attainment of the learning objectives does not require going beyond the content of the chapters. However, the lack of emphasis of higher order thinking in the objectives is compensated by the emphasis of the latter in the assessment exercises, activities and skills. This was one of the areas of strength in the three evaluated chapters of this book. The activities included in the student's book and teacher's guide require the use of inquiry, the scientific method (such as making observations, formulating hypotheses, designing experiments and drawing conclusions) and research skills. In addition, the assessment exercises require application of concepts and going beyond the scope of the book.



Another major positive area with respect to this criterion is the fact that the student has a central role in the teaching and learning process which was something mentioned in the philosophy. This was very evident in the teachers' book whereby all the activities involve the students extracting information on their own by reading the text, interpreting illustrations (which is also something emphasized in the book) and engaging in experiments. In addition, rather than giving students the information as is, the teachers are provided with probing and guiding questions to trigger students' responses about the content. The activities also cater for individual difference in learning styles and abilities, which is something also emphasized in the philosophy.

*Criterion 2: Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students*

Overall, the Arabic language in all three of the chapters was suitable for the educational level of grade 6 students. Reading the text can be done very easily due to the simplicity in sentence structure and vocabulary usage. In addition, there were two major positive areas with respect to this criterion. One was the fact that the technical terms were very well defined in the text. Second, there were a lot of concrete examples given within the content of the chapters and some of these examples were related to students' daily lives. This was especially evident in the chapters dealing with physical and chemical concepts (e.g. the concept of force in chapter 10). Providing concrete examples allowed the abstract concepts to become more tangible, which is important for students of this grade level.

The major shortcoming in this criterion was in the number of concepts presented. More specifically, all three of the evaluated chapters presented a very large number of concepts. For the sake of illustration, below is a list of all the general concepts dealt with in chapter 9 "Classifying Substances" (pp 66-82):

- Mass
- Weight
- Volume (regular and irregular objects)
- Solid, liquid and gas states of substances
- Density and buoyancy (Archimedes's principle is mentioned)
- Physical properties of substances (including conductors and insulators)
- What are mixtures?
- Heterogeneous mixtures
- The three different types of mixtures
- Solutions (solute, solvent)
- Solubility and the factors that affect it
- Separation techniques (physical and non-physical)

It should also be noted that the concepts were presented in a relatively limited number of pages and thus they were presented very superficially. In addition, the teacher's guide states that the time allotted for each chapter is 4-6 hours only. This is unsuitable for students of this grade level since it might hinder their ability to gain an in-depth understanding of the concepts. Thus, it would be more ideal to focus on only a few concepts by reducing the number of concepts in the chapter. Having more focused and in-depth explanations would ensure enhanced conceptual understanding for the students.

*Criterion 3: Suitability of the Arabization of the translated textbooks to serve the math and science concepts*



Generally speaking, the Arabization of the content, illustrations, assessment exercises and skills was suitable for the science concepts presented in the three chapters. The most lacking feature in this criterion is in the activities of two of the evaluated chapters (chapters 9 and 10). Although the already existing activities in these two chapters were appropriate for the science concepts and served their purpose of clarifying the content, the inclusion of *more* activities is needed for further and deeper exploration of the concepts. This is especially true since, as mentioned earlier, the concepts presented in the text are dealt with very superficially in the text itself. For instance, in chapter 10 “Using Forces” students should have been provided with opportunities to explore Newton’s three laws of motion either through demonstrations or hands-on activities. Another example is in chapter 9 “Classifying Substances” whereby on page 79 the students were briefly presented with the factors that influence solubility. A suggested activity here could be to allow students to perform experiments on the effects that different factors such as particle size, rate of stirring and temperature has on the solubility rate. (See evaluation report for more suggestions.) A final comment worth mentioning here with respect to the *illustrations* is that there is a lack of alignment between the text and the illustrations themselves. This is due to the fact that the illustrations are not numbered (e.g. figure 1, figure 2...etc). Labeling the figures would allow students to easily spot the illustration that the text is referring to.

Criterion 4: Suitability of the translated textbooks to the cultural context of The Gulf States

All three of the evaluated chapters were very satisfactory in terms of the cultural relevance of their content, illustrations, activities and assessment exercises. In reality, the concepts dealt with in this chapter are somewhat culturally neutral, thus there was no room for there to be any cultural irrelevance. However, attempts at referring to the Gulf States culture were made where pertinent or relevant. For example, in chapter 7 “The Sun, Earth and Moon” there is reference to the first The Gulf States astronaut to go into outer space (page 18).



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 6 –Term 2			
		Textbook Title: العلوم: الإبتدائي السادس الصف الفصل الدراسي الثاني			
		Chapter Title: Chapter 7 The Sun, Earth and Moon الشمس والأرض والقمر			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>52. Alignment of the translated texts to the philosophy of the original textbook</b>					
52.1.	<i>Content of the Chapter</i>			X	
52.2.	<i>Activities included in the chapter</i>				X
52.3.	<i>Learning objectives</i>			X	
52.4.	<i>Practice exercises (N/A)</i>				
52.5.	<i>Assessment exercises</i>				X
52.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>33. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
33.1.	<i>Length of sentences</i>			X	
33.2.	<i>Complexity of sentences</i>			X	
33.3.	<i>Diversity of language structures</i>				X
33.4.	<i>Number of concepts per chapter</i>		X		
33.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
33.6.	<i>Clarity of definitions of technical terms</i>				X
33.7.	<i>Using concrete examples to illustrate concepts</i>			X	
33.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>				X

Illustrate by at least one example any indicator of criterion 2 given a score of less than 3

**2.4. Number of concepts per chapter**

The number of concepts presented in this chapter is too much for students of this educational level. The following is a list of the general concepts in both lessons of this chapter (pp 114-129):

- What is astronomy? (discovering)
- Time zones
- Earth's rotation
- The four seasons
- Satellites and space crafts
- Physical appearance of the moon
- Phases of the moon
- Solar and lunar eclipse
- Tides and tidal forces

Rather than presenting too many concepts, it would be better to reduce the number of concepts in the chapter in order to ensure deeper conceptual understanding. For instance, 4-5 concepts from the above can be chosen to be included in the chapter.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>41. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
41.1. Illustrations			X	
41.2. Content				X
41.3. Activities				X
41.4. Practice Exercises (N/A)				
41.5. Assessment Exercises			X	
41.6. Skills				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>28. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
28.1. Illustrations				X
28.2. Content				X
28.3. Activities				X
28.4. Practice Exercises (N/A)				
28.5. Assessment Exercises				X



Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

Comments and explanation on implementing the indicator.  
(Please see above)

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 6 –Term 2			
		Textbook Title: العلوم: الإبتدائي السادس الصف الفصل الدراسي الثاني			
		Chapter Title: Chapter 9 Classifying Substances المادة تصنيف			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>53. Alignment of the translated texts to the philosophy of the original textbook</b>					
53.1.	<i>Content of the Chapter</i>			X	
53.2.	<i>Activities included in the chapter</i>				X
53.3.	<i>Learning objectives</i>		X		
53.4.	<i>Practice exercises (N/A)</i>				
53.5.	<i>Assessment exercises</i>				X
53.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
<p><b>1.3. Learning Objectives</b></p> <p>The learning objectives in this chapter mainly focus on knowledge of the content rather than on the higher order thinking scientific skills that are emphasized in the philosophy. The following is a list of the objectives of both lessons of this chapter (on p. 62A of the teacher's guide):</p> <ul style="list-style-type: none"> <li>• Measure the density of a particular substance.</li> <li>• Classify the different states of substances.</li> <li>• Classify the different types of mixtures.</li> </ul> <p>Clarify the definitions of solutions and solubility.</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>34. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
34.1. <i>Length of sentences</i>			X	
34.2. <i>Complexity of sentences</i>				X
34.3. <i>Diversity of language structures</i>				X
34.4. <i>Number of concepts per chapter</i>		X		
34.5. <i>Reuse of technical terms in subsequent chapters</i>				X
34.6. <i>Clarity of definitions of technical terms</i>				X
34.7. <i>Using concrete examples to illustrate concepts</i>				X
34.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>			X	
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><b>2.4. Number of concepts per chapter</b>            The number of concepts presented in this chapter is too much for students of this educational level. The following is a list of the general concepts in both lessons of this chapter (pp 66-82):</p> <ul style="list-style-type: none"> <li>• Mass</li> <li>• Weight</li> <li>• Volume (regular and irregular objects)</li> <li>• Solid, liquid and gas states of substances</li> <li>• Density and buoyancy (Archimedes's principle is mentioned)</li> <li>• Physical properties of substances (including conductors and insulators)</li> <li>• What are mixtures?</li> <li>• Heterogeneous mixtures</li> <li>• The three different types of mixtures</li> <li>• Solutions (solute, solvent)</li> <li>• Solubility and factors that affect it</li> <li>• Separation techniques (physical and non-physical)</li> </ul> <p>In addition, these concepts are presented in a limited number of pages and are thus dealt with very superficially. This might lead to inadequate conceptual understanding. Therefore, it would be better to reduce the amount of information provided in the chapter. For instance, all the concepts dealing with the topic of "mixtures" can in fact be formed into a chapter of its own.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>42. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
42.1. <i>Illustrations</i>			X	
42.2. <i>Content</i>			X	
42.3. <i>Activities</i>		X		
42.4. <i>Practice Exercises (N/A)</i>				
42.5. <i>Assessment Exercises</i>			X	
42.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.3. Activities

Although the existing activities do in fact serve the purpose of clarifying the science concepts, one major lacking feature with respect to this indicator is the *frequency* of use of activities. In other words, more activities needed to be included in order to ensure proper conceptual understanding. This is especially true since, as mentioned earlier, the concepts presented in the text are dealt with very superficially in the text itself. A few of the instances in which activities for further exploration could have been included are the following:

- Page 66: mass, weight and volume (In fact, there wasn't enough emphasis on the difference between mass and weight).
- Page 84: mixtures (students can be asked to point out examples of mixtures in their daily lives, especially since students tend to associate the term with liquids)
- Pages 78: solute and solvent (students can be presented with a number of solutions and asked to identify the solute and solvent in each)
- Page 79: the factors affecting solubility (students can be asked to experiment on the effects that different factors such as particle size, rate of stirring and temperature has on the solubility rate)

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>29. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
29.1. <i>Illustrations</i>				X
29.2. <i>Content</i>				X
29.3. <i>Activities</i>				X
29.4. <i>Practice Exercises (N/A)</i>				
29.5. <i>Assessment Exercises</i>				X

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



<b>Book Evaluation Form</b>	Subject: Science			
	Grade: 6 –Term 2			
	Textbook Title: العلوم: الإبتدائي السادس الصف الفصل الدراسي الثاني			
	Chapter Title: Chapter 10 Using Force استعمال القوة			
<i>Criterion/Indicator</i>	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>54. Alignment of the translated texts to the philosophy of the original textbook</b>				
54.1. <i>Content of the Chapter</i>			X	
54.2. <i>Activities included in the chapter</i>				X
54.3. <i>Learning objectives</i>		X		
54.4. <i>Practice exercises (N/A)</i>				
54.5. <i>Assessment exercises</i>			X	
54.6. <i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><b>1.3. Learning Objectives</b>            The learning objectives in this chapter mainly focus on knowledge of the content rather than on the higher order thinking scientific skills that are emphasized in the philosophy. The following is a list of the objectives of both lessons of this chapter (on p. 110A of the teacher's guide):</p> <ul style="list-style-type: none"> <li>• Show the relationship amongst position, motion, speed and velocity.</li> <li>• Calculate velocity.</li> <li>• Clarify the meanings of equilibrium and disequilibrium of forces.</li> <li>• Become familiar with the effects of gravity and friction on motion.</li> </ul> <p>Become familiar with Newton's three laws of motion.</p>				

<i>Criterion/Indicator</i>	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>35. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
35.1. <i>Length of sentences</i>			X	
35.2. <i>Complexity of sentences</i>			X	
35.3. <i>Diversity of language structures</i>				X

35.4.	<i>Number of concepts per chapter</i>		X		
35.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
35.6.	<i>Clarity of definitions of technical terms</i>				X
35.7.	<i>Using concrete examples to illustrate concepts</i>				X
35.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>			X	

Illustrate by at least one example any indicator of criterion 2 given a score of less than 3

#### 2.4. *Number of concepts per chapter*

The number of concepts presented in this chapter is too much for students of this educational level. The following is a list of the general concepts in both lessons of this chapter (pp 114-129):

##### Lesson 1:

- Motion:
  - Position
  - Direction
  - Frame of reference
- Speed
- Velocity
- Acceleration

##### Lesson 2:

- Forces:
  - Contact and non-contact forces
  - Uses of force
- Gravity
- Friction
- Air resistance
- Newton's first law of motion
- Newton's second law of motion
- Newton's third law of motion

Having too many concepts might lead to inadequate conceptual understanding. Therefore, it would be better to reduce the amount of information provided in the chapter. For instance, all the concepts dealt with in lesson can actually be made into a whole separate chapter.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>43. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
43.1. <i>Illustrations</i>			X	
43.2. <i>Content</i>			X	
43.3. <i>Activities</i>		X		
43.4. <i>Practice Exercises (N/A)</i>				
43.5. <i>Assessment Exercises</i>			X	
43.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.3. *Activities*

Although the existing activities do in fact serve the purpose of clarifying the science concepts, one major lacking feature with respect to this indicator is the *frequency* of use of activities. In other words, more activities needed to be included in order to ensure proper conceptual understanding. A few examples of instances where more activities were necessary are presented below:

- Page 114: more examples of the concept of “frame of reference” should be given. For instance, students could be given a map showing various locations of places and then asked to find distances and directions based on certain points of references.
- Lesson 1: more activities were needed to explore the concepts of position, speed, velocity and acceleration.
- Page 122: the concept of contact and non-contact forces can be further explored by asking students to identify them with examples from their daily lives

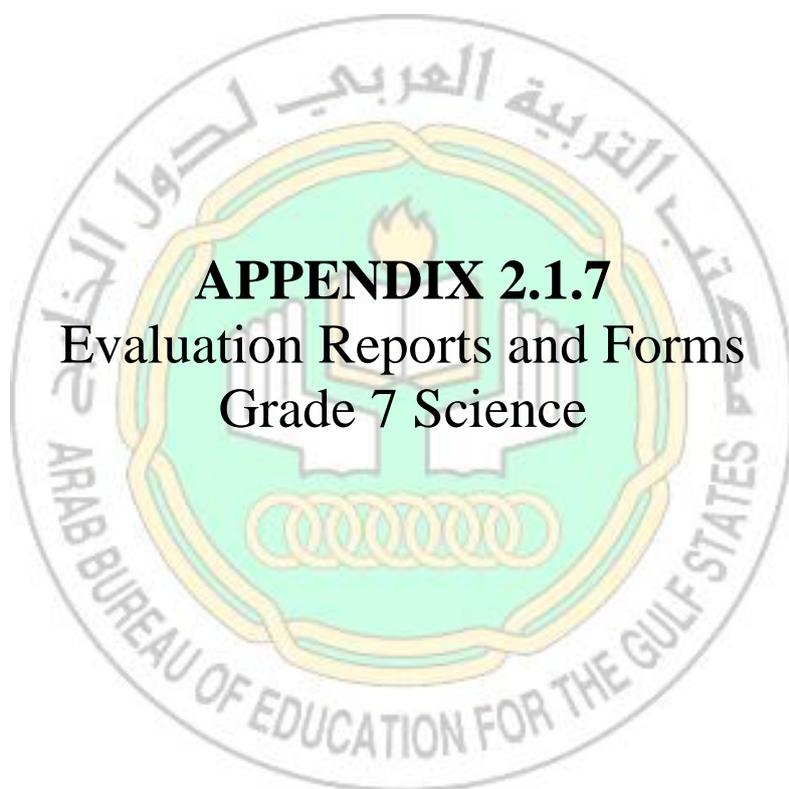
Pages 126-129: students should be given opportunities to explore Newton’s three laws of motion either through demonstrations or hands-on activities.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>30. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
30.1. <i>Illustrations</i>				X
30.2. <i>Content</i>				X
30.3. <i>Activities</i>				X
30.4. <i>Practice Exercises (N/A)</i>				
30.5. <i>Assessment Exercises</i>				X

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

Comments and explanation on implementing the indicator.

Additional indicators and other comments



**APPENDIX 2.1.7**  
**Evaluation Reports and Forms**  
**Grade 7 Science**



**Important:** A chapter from the two versions (the English as well as the Arabic versions of the books) should be translated. The codes and notes are to be written on the Arabic version of the book with an exception of notes on the original book (when an item appears in the original book but is missing in the Arabic version of the book).

Difference is due mainly to **QUALITY** difference and not just the number of missing, extra, or different items. Sometimes, a small difference in a sentence is a big difference in the meaning (i.e. large difference even if few occurrences).

Book Evaluation Form		Subject: Science				
		Grade: 7		Semester: 1		
		Textbook Title:				
		Chapter Title: Rocks and minerals				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<i>Criterion/Indicator</i>						
<b>55. Agreement of the translated Arabic book with that of the English book</b>						
55.1. <i>Definitions and explanations in the chapter</i>				✓		
55.2. <i>Activities included in the chapter</i>				✓		
55.3. <i>Learning objectives</i>						✓
55.4. <i>Practice exercises</i>						✓
55.5. <i>Assessment exercises</i>				✓		
55.6. <i>Figures, pictures and illustrations</i>						✓
<b>56. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
56.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

**Guidelines for filling this form (Item 1 only):**

1. One form is to be filled for each of the three books (student, practice, teacher) for each semester
2. You need to have a copy of the Table of Content of each book and of one chapter of the book chosen from the chapters you have already selected



3. For the chapter, for each item (for example, definition, explanation, activity...) one of the four scale points:
  - a. '1' for completely different
  - b. '2' for large difference
  - c. '3' for little difference
  - d. '4' difference due only to cultural context
  - e. '5' no difference
4. Check the appropriate box in the rubric based on the frequency of each value
5. Write a short report under the headings 1.1 to 1.5 and attach to it the copies of the coded selected chapter.

**- In addition to the scale points, three colors are used to do the coding: The yellow color indicates no difference (scale point is 5), the green color indicates a difference between the original and translated textbook (scale point is 2, 3 or 4) and the pink color indicates that the original and translated textbook are completely different (scale point is 1).**

**- This analysis is based on the comparison just between the student's textbooks because it is the only English manual that is available. The practice and teacher textbook are not available.**

#### 1.1 Definitions and explanations in the chapter

*The analysis showed little difference because some sentences and real life examples are missed from the Arabic text book but it does not change the meaning. For example: "The reddish-gold color of a new penny shows you that it contains copper". Although the main ideas are well translated, there is little difference due to the presence of more sentences in English than in the Arabic version (in few paragraphs): In the English version, the sentences are short and express one idea. Whereas in some paragraphs of the Arabic version, the sentences are long and express more than one idea.*

#### 1.2 Activities included in the chapter

The activities which are found in the translated textbook are similar to the ones in the original textbook with no difference. However, there are missed lab activities and reading activity (this activity which is present before the lessons begin, allows the students to be prepared for the concepts). These activities could help the student to understand better the concepts.

#### 1.3 Learning objectives

The same objectives appear in both books. These objectives are aligned and similar.

#### 1.4 Practice exercises

The practice exercises found in both books are similar. On the other hand, there is an additional practice book in the translated collection of books related to each student textbook

#### 1.5 Assessment

The assessment activities in this chapter are similar especially the assessment at the end of each lesson. However; some assessment exercises, at the end of the chapter, are found in the original book and not found in the translated textbook.

#### 1.6 Figures, pictures and illustrations



The figures and illustration are not typically the same, sometimes due to cultural difference, but they show the same idea or concept in the Arabic and English version. In addition, few figures are missed especially in the second lesson (Arabic book).

### 2.1 Table of contents

The lessons of grade 7, first semester, are found in the Science Red book. Even though the order of the chapters is not the same as the original book, the title for the chapters and lessons are the same. Except for chapter 1 (English version) where the first lesson is missed. In addition, two lessons from chapters 2, 4, 7 and 9 (English version) are combined in one lesson in the Arabic version. Thus, their titles are also combined.





**Important:** A chapter from the two versions (the English as well as the Arabic versions of the books) should be translated. The codes and notes are to be written on the Arabic version of the book with an exception of notes on the original book (when an item appears in the original book but is missing in the Arabic version of the book).

Difference is due mainly to **QUALITY** difference and not just the number of missing, extra, or different items. Sometimes, a small difference in a sentence is a big difference in the meaning (i.e. large difference even if few occurrences).

Book Evaluation Form		Subject: Science				
		Grade: 7		Semester:2		
		Textbook Title:				
		Chapter Title: Cells for life foundation				
Criterion/Indicator		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>57. Agreement of the translated Arabic book with that of the English book</b>						
57.1. Definitions and explanations in the chapter						✓
57.2. Activities included in the chapter				✓		
57.3. Learning objectives						✓
57.4. Practice exercises						✓
57.5. Assessment exercises				✓		
57.6. Figures, pictures and illustrations						✓
<b>58. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
58.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

**Guidelines for filling this form (Item 1 only):**

6. One form is to be filled for each of the three books (student, practice, teacher) for each semester
7. You need to have a copy of the Table of Content of each book and of one chapter of the book chosen from the chapters you have already selected
8. For the chapter, for each item (for example, definition, explanation, activity...) one of the four scale points:



- a. '1' for completely different
  - b. '2' for large difference
  - c. '3' for little difference
  - d. '4' difference due only to cultural context
  - e. '5' no difference
9. Check the appropriate box in the rubric based on the frequency of each value
10. Write a short report under the headings 1.1 to 1.5 and attach to it the copies of the coded selected chapter.

**-In addition to the scale points, three colors are used to do the coding: The yellow color indicates no difference (scale point is 5), the green color indicates a difference between the original and translated textbook (scale point is 2, 3 or 4) and the pink color indicates that the original and translated textbook are completely different (scale point is 1).**

**- This analysis is based on the comparison just between the student's textbooks because it is the only English manual that is available. The practice and teacher textbook are not available.**

### 1.2 Definitions and explanations in the chapter

*The analysis showed little difference because some sentences are missed from the Arabic text book but it does not change the meaning.*

*Although the main ideas are well translated but there is little difference due to the presence of more sentences in English than in the Arabic version (in few paragraphs): In the English version, the sentences are short and express one idea. Whereas in some paragraphs of the Arabic version, the sentences are long and express more than one idea.*

### 1.2 Activities included in the chapter

The activities found in the translated textbook are similar to the ones in the original manual with no difference. However, there are missed lab activities and reading activity (this activity which is present before the lessons begin, allows the students to be prepared for the concepts) in the translated textbook. These activities could help the student to understand better the concepts.

### 1.3 Learning objectives

The same objectives appear in both books. These objectives are aligned and similar.

### 1.4 Practice exercises

The practice exercises found in both books are similar. On the other hand, there is an additional practice book in the translated collection of books related to each student textbook

### 1.5 Assessment

The assessment activities in this chapter are similar especially the assessment at the end of each lesson. However some assessment exercises, at the end of the chapter, are found in the original book and not found in the translated textbook.

### 1.6 Figures, pictures and illustrations

The figures and illustration are not typically the same, sometimes due to cultural difference, but they show the same idea or concept in the Arabic and English version. In addition, few figures are missed especially in the second lesson (Arabic book).



## 2.1 Table of contents

The lessons of grade seven, second semester, are found in the Science Red book. Even though the order of the chapters is not the same as the original book, the title for the chapters and lessons are the same. Except for chapter 14 (English version) where the second and third lessons are missed and chapters 17, 18 and 22 (English version) where one lesson is missed. In addition, two lessons from chapters 17, 18 and 21 (English version) are combined in one lesson in the Arabic version as for their titles. Finally, chapters 14 and 15 are combined together in one chapter in the Arabic version.

In the Science Red level book, five chapters are missed from grade seven (first and second semester – refer to the coded Table of Contents). Those chapters are not found in another grade level.





This form represents two chapters: 1. Movement, forces and simple machines and 2. Electricity and Magnetism

<b>Book Evaluation Form</b>	Subject: Science			
	Grade:7			
	Textbook Title: Science			
	Chapter Title:The science and its work - first semester			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>59. Alignment of the translated texts to the philosophy of the original textbook</b>				
59.1. <i>Content of the Chapter</i>				✓
59.2. <i>Activities included in the chapter</i>				✓
59.3. <i>Learning objectives</i>	✓			
59.4. <i>Practice exercises</i>				✓
59.5. <i>Assessment exercises</i>		✓		
59.6. <i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Teaching not only the scientific concepts but also showing how scientists were able to discover it.</li> <li>- Information and activities that stimulate the student knowledge and his critical thinking.</li> <li>- Information and activities related to real life examples and written with an enthusiastic style allowing a better understanding for students.</li> </ul> <p><i>And finally the book should respect the level and age of the student and present concepts related to previous classes</i></p> <p><i>1.3: The focus of the objectives is on the scientific concepts and they are not written with an enthusiastic style. Therefore they do not respect the philosophy of the original textbook. For example: "Compare between notes and conclusions".</i></p> <p><i>1.5: The assessment exercises at the end of the chapter entitled "revision exercises" are closed, limited to the content of the chapters and direct applications without any concrete examples. For example:" Explain how scientific theories theory change?"</i></p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>36. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>36.1. Length of sentences</i>				✓
<i>36.2. Complexity of sentences</i>				✓
<i>36.3. Diversity of language structures</i>			✓	
<i>36.4. Number of concepts per chapter</i>				✓
<i>36.5. Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>36.6. Clarity of definitions of technical terms</i>				✓
<i>36.7. Using concrete examples to illustrate concepts</i>				✓
<i>36.8. Redundancy of terms and sentences with no educational benefit.</i>				✓
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><i>2.3: A lot of question and exclamation sentences are detected in this chapter but it is well placed in the text to offer a better understanding for the students. The questions in the end of the unit do not present any diversity on the language structures and most of it starts with the words compare, explain, clarify...</i></p>				

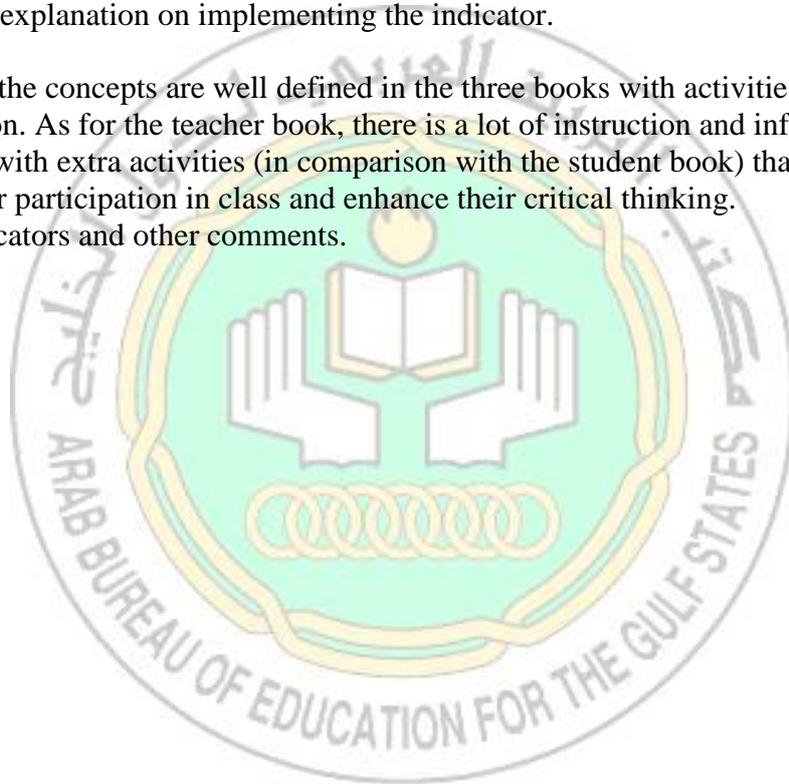
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>44. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>44.1. Illustrations</i>				✓
<i>44.2. Content</i>				✓
<i>44.3. Activities</i>				✓
<i>44.4. Practice Exercises</i>				✓
<i>44.5. Assessment exercises</i>				✓
<i>44.6. Skills</i>				✓
<p>Illustrate by at least one example any indicator of criterion 3 given a score of less than 3</p>				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>45. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
45.1. <i>Illustrations</i>				✓
45.2. <i>Content</i>				✓
45.3. <i>Activities</i>				✓
45.4. <i>Practice Exercises</i>				✓
45.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

In this chapter, the concepts are well defined in the three books with activities that help for better illustration. As for the teacher book, there is a lot of instruction and information given for the teacher with extra activities (in comparison with the student book) that allows the students a better participation in class and enhance their critical thinking. Additional indicators and other comments.





<b>Book Evaluation Form</b>	Subject: Science			
	Grade:7			
	Textbook Title: Science			
	Chapter Title:Rocks and minerals -first semester			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b><i>Criterion/Indicator</i></b>				
<b>60. Alignment of the translated texts to the philosophy of the original textbook</b>				
60.1. <i>Content of the Chapter</i>			✓	
60.2. <i>Activities included in the chapter</i>	✓			
60.3. <i>Learning objectives</i>	✓			
60.4. <i>Practice exercises</i>				✓
60.5. <i>Assessment exercises</i>		✓		
60.6. <i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Teaching not only the scientific concepts but also showing how scientists were able to discover it.</li> <li>- Information and activities that stimulate the student knowledge and he's critical thinking.</li> <li>- Information and activities related to real life examples and written with an enthusiasm style allowing a better understanding for students.</li> </ul> <p><i>And finally the book should respect the level and age of the student and presenting concepts related to previous classes</i></p> <p><i>1.1 and 1.2: this chapter contains a lot of well described small definitions but little activities are presented which is not aligned with the book philosophy.</i></p> <p><i>1.3: The focus of the objectives is on the scientific concepts and they are not written with an enthusiasm style. Therefore they do not respect the philosophy of the original textbook. For example: "Describe the condition to obtain transformed rocks".</i></p> <p><i>1.5: The assessment exercises in the end of the chapter named "revision exercises" are closed, limited to the content of the chapters and direct applications without any concrete examples</i></p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>37. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>37.1.Length of sentences</i>			✓	
<i>37.2.Complexity of sentences</i>			✓	
<i>37.3.Diversity of language structures</i>			✓	
<i>37.4.Number of concepts per chapter</i>		✓		
<i>37.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>37.6.Clarity of definitions of technical terms</i>			✓	
<i>37.7.Using concrete examples to illustrate concepts</i>				✓
<i>37.8.Redundancy of terms and sentences with no educational benefit.</i>			✓	
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><i>2.1 and 2.2: Few long sentences are detected in the chapter with some complex words like: التعرّية و التعرّية . These words are present in the same sentence that contains more than 20 words.</i></p> <p><i>2.3: The questions at the end of the unit do not present any diversity in language structures and most of them start with the words classify, determine, clarify...</i></p> <p><i>2.4 and 2.6: The number of concepts per chapter showed little evidence of being appropriate. As for the clarity of definitions of technical terms almost satisfactory evidence is shown because the concepts are very related but under one concept we can find a least 5 small definitions which can create a lot of confusion for the student. For example under the concept الصخور الرسوبية we can find:</i>  <i>الأحافير, الصخور الرسوبية العضوية, الصخور الرسوبية لبيميائية, الصخور الرسوبية الفتاتية, الصخور الفتاتية</i></p>				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>46. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
46.1. <i>Illustrations</i>				✓
46.2. <i>Content</i>				✓
46.3. <i>Activities</i>				✓
46.4. <i>Practice Exercises</i>				✓
46.5. <i>Assessment exercises</i>				✓
46.6. <i>Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>47. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
47.1. <i>Illustrations</i>				✓
47.2. <i>Content</i>				✓
47.3. <i>Activities</i>				✓
47.4. <i>Practice Exercises</i>				✓
47.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

In this chapter, the concepts are well defined in the three books but few activities are included in the text (student book, practice book). Also a lot of well described small definitions are presented. In the other hand, the number of these small definitions may create confusion for the students.

Additional indicators and other comments.



This form represents two chapters: 1. Movement, forces and simple machines and 2. Electricity and Magnetism

<b>Book Evaluation Form</b>	Subject: Science			
	Grade:7			
	Textbook Title: Science			
	Chapter Title: Movement, forces and simple machines and Electricity and Magnetism -first semester			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>61. Alignment of the translated texts to the philosophy of the original textbook</b>				
				✓
				✓
✓				
			✓	
				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Teaching not only the scientific concepts but also showing how scientists were able to discover it.</li> <li>- Information and activities that stimulate the student knowledge and he's critical thinking.</li> <li>- Information and activities related to real life examples and written with an enthusiasm style allowing a better understanding for students.</li> </ul> <p><i>And finally the book should respect the level and age of the student and presenting concepts related to previous classes</i></p> <p><i>1.1: The concepts are well presented in the three books in term of level, critical thinking and enthusiasm style especially that the concepts are explained through activities included in the text (student book). For example: the concept of the "average speed" was explained through the movement of a bike rider, he is acceleration and he is slowing down.</i></p> <p><i>1.3: The focus of the objectives is on the scientific concepts and they are not written with an enthusiasm style. Therefore they do not respect the philosophy of the original textbook. For example: "Describe how the force influence the movement, define what is the meaning of speed and acceleration".</i></p> <p><i>1.5: The assessment exercises in the end of the unit named "revision exercises" are closed,</i></p>				

limited to the content of the chapters and direct applications without any concrete examples whereas the exercises in the chapter and in the practice book are based on real life examples and critical thinking.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>38. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
38.1. Length of sentences				✓
38.2. Complexity of sentences				✓
38.3. Diversity of language structures			✓	
38.4. Number of concepts per chapter				✓
38.5. Reuse of technical terms in subsequent lessons and chapters				✓
38.6. Clarity of definitions of technical terms				✓
38.7. Using concrete examples to illustrate concepts				✓
38.8. Redundancy of terms and sentences with no educational benefit.			✓	
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 3</p> <p>2.3: The questions in the end of the unit do not present any diversity on the language structures and most of it starts with the words compare, use, clarify...</p> <p>2.8: Few sentences are repeated in the same paragraph. For example: the sentences "difficult to stop a heavy body...easy to stop a thin body" are repeated twice in the same paragraph.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>48. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
48.1. Illustrations				✓
48.2. Content				✓
48.3. Activities				✓
48.4. Practice Exercises				✓
48.5. Assessment exercises				✓
48.6. Skills				✓
<p>Illustrate by at last one example any indicator of criterion 3 given a score of less than</p>				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>49. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
49.1. <i>Illustrations</i>			✓	
49.2. <i>Content</i>			✓	
49.3. <i>Activities</i>			✓	
49.4. <i>Practice Exercises</i>				✓
49.5. <i>Assessment exercises</i>				✓
<p>Illustrate by at last one example any indicator of criterion 4 given a score of less than 3</p> <p>4.1: Few illustrations are not suitable with the Gulf States cultural context like a figure for a hockey player used to explain the function of machines in work</p> <p>4.2 and 4.3: Some examples given in the student text book are not suitable with the Gulf States cultural. For example: In the second chapter (Electricity and Magnetism), the first law of Newton was explained by the movement of a golf ball.</p>				

Comments and explanation on implementing the indicator.

In this chapter, the concepts are well presented in terms of level, critical thinking and active style especially that the concepts are explained through activities included in the text (student book, practice book). Also the concepts are related and the number of concepts in the chapter is very satisfactory.

Few illustrations and examples are not related to the Gulf States cultural context. However, extra information and examples are presented in the teacher's book that can enhance students' understanding. Also in the teacher's book, the teacher is oriented to enhance the critical thinking of students by offering him different ways of approaches to teaching and a variety of activities that students can conduct in class (and sometimes out of class). Additional indicators and other comments.



## REPORT ON SCIENCE TEXTBOOKS IN GRADE 7- FIRST TERM

The following report is an evaluation of science books in grade 7 (first semester). Each of the student textbook, practice book and teacher guidebook is divided into eight chapters. Four chapters: (1) "The science and its work ", (2) "Movement, forces and simple machines ", (3) "Electricity and Magnetism" and (4) "Rocks and minerals" were analyzed. One evaluation form was filled out for chapters 1 and 4 whereas for chapters 2 and 3 one evaluation form was filled in order to compare the activities, the assessment and practice exercises in the chapters to the ones in the end of the unit because those two chapters form one unit. The following results are based on the three evaluation forms.

The analysis concerning the **alignment of the translated texts to the philosophy of the original textbook** showed that the concepts are well defined and activities are included that help to better illustrate these concepts except for chapter 4 in which few activities are included in the lessons. Also sufficient instructions and information are given in the teacher book with extra activities (in comparison with the student book) a situation which the teacher to encourage class participation and allow the students to apply their critical thinking skills in different contexts.

The analysis also showed no evidence that the learning objectives were aligned with the philosophy of the original textbooks for all chapters because these objectives were limited to scientific concepts and were written at low cognitive levels, thus not reflecting the philosophy of the original textbook which indicates that information and activities should be related to real life examples and written in active and student-centered style. The assessment tasks in chapter 1 and 4 and the "revision exercises" at the end of the unit 2 (that contains chapters 2 and 3) are direct applications and limited to the contents of the chapters which are not connected to real life situations. The activities included in chapter 4 showed no evidence of being aligned with the philosophy because this chapter contains a lot of well described small definitions but a small number of activities. However there is almost satisfactory and satisfactory evidence for the content of the chapter, the practice exercises, the activities included in chapters 1, 2 and 3 and the skills.

**Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students:** The analysis showed that the chapters are not aligned in the same way concerning the suitability of the Arabic language especially for chapter 4 where a lot of short definitions are presented that could create confusion for the students. The analysis showed almost satisfactory to satisfactory evidence regarding all indicators in chapters 1, 2 and 3 with a lot of questions that are well placed in the text to offer a better understanding for the students.

However, in chapter 4, the number of concepts per chapter was relatively high. Moreover, there are situations where many sub-concepts are included under one major concept, a situation that might lead to memory overload and confusion for students. For example under the concept "الصخور الرسوبية الفتاتية" we can find: الصخور الرسوبية الفتاتية, الأحافير, الصخور الرسوبية العضوية, الصخور الرسوبية لبيكيميائية. Also in this chapter, there are a few long sentences that included complex words like: التجوية و التعرية. These words are present in the same sentence that contains more than 20 words.

**Suitability of the Arabization of the translated textbooks to serve the math and science concepts:** Satisfactory evidence was found with respect to the 6 criteria in this rubric:



(1) illustrations; (2) content; (3) activities; (4) practice exercises; (5) assessment exercises and (6) skills.

**Suitability of the translated textbooks to the cultural context of The Gulf States:**

Satisfactory evidence was found with respect to the 5 criteria in this rubric: (1) illustrations, (2) content, (3) activities, (4) practice exercises and (5) assessment for chapters 1 and 4. In chapters 2 and 3 a few illustrations are not suitable for the Gulf States cultural context (A picture of a hockey player is used to explain the function of machines). In addition, some examples given in the student textbook are not suitable for the Gulf States culture. For example: In chapter 3 (Electricity and Magnetism), the first law of Newton was explained by the movement of a golf ball in a golf game, a game that might not be familiar to many Gulf students.





<b>Book Evaluation Form</b>	Subject: Science			
	Grade:7			
	Textbook Title: Science			
	Chapter Title:The science of the environment - second semester			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>62. Alignment of the translated texts to the philosophy of the original textbook</b>				
62.1. <i>Content of the Chapter</i>			✓	
62.2. <i>Activities included in the chapter</i>		✓		
62.3. <i>Learning objectives</i>	✓			
62.4. <i>Practice exercises</i>				✓
62.5. <i>Assessment exercises</i>			✓	
62.6. <i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Teaching not only the scientific concepts but also showing how scientists were able to discover it.</li> <li>- Information and activities that activate a students' prior knowledge and hiss critical thinking.</li> <li>- Information and activities related to real life examples and written with an active style allowing a better understanding for students.</li> <li>- The book should respect the level and age of the student and present concepts related to previous classes</li> </ul> <p>1.2 : This chapter contains two lessons titled: (1) What is the environment and (2) Living creatures, environment and energy. The content of lesson 1 is not aligned with the philosophy of the original textbook because it contains a lot of detailed information about the same concept. However in lesson 2 a lot of questions are asked to enhance the critical thinking of the students like: "How can we study animals that travel from one place to another?" which is aligned with the book philosophy.</p> <p>1.2. There are only two activities in this chapter because it is focused on descriptions, definitions and illustrations</p> <p>1.3: The learning objectives are focused on content with no attention to skills (skills are emphasized in the philosophy of the original textbooks). Moreover, the objectives are at lower cognitive levels.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>39. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>39.1.Length of sentences</i>				✓
<i>39.2.Complexity of sentences</i>			✓	
<i>39.3.Diversity of language structures</i>			✓	
<i>39.4.Number of concepts per chapter</i>		✓		
<i>39.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>39.6.Clarity of definitions of technical terms</i>		✓		
<i>39.7.Using concrete examples to illustrate concepts</i>				✓
<i>39.8.Redundancy of terms and sentences with no educational benefit.</i>				✓
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 3</p> <p><i>2.4 and 2.6: The detailed information and concepts present in this chapter may create confusion for the student. There are many instances of too many concepts included in the chapter; in addition these concepts are not always defined clearly.</i></p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>50. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>50.1. Illustrations</i>				✓
<i>50.2. Content</i>				✓
<i>50.3. Activities</i>				✓
<i>50.4. Practice Exercises</i>				✓
<i>50.5. Assessment exercises</i>				✓
<i>50.6. Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 3 given a score of less than 3</p>				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>51. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>51.1. Illustrations</i>				✓
<i>51.2. Content</i>				✓
<i>51.3. Activities</i>				✓
<i>51.4. Practice Exercises</i>				✓
<i>51.5. Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
Additional indicators and other comments.





<b>Book Evaluation Form</b>	Subject: Science			
	Grade:7			
	Textbook Title: Science			
	Chapter Title:cells for life foundation - second semester			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b><i>Criterion/Indicator</i></b>				
<b>63. Alignment of the translated texts to the philosophy of the original textbook</b>				
63.1. <i>Content of the Chapter</i>				✓
63.2. <i>Activities included in the chapter</i>				✓
63.3. <i>Learning objectives</i>	✓			
63.4. <i>Practice exercises</i>				✓
63.5. <i>Assessment exercises</i>			✓	
63.6. <i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3  <i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- <i>Teaching not only the scientific concepts but also showing how scientists were able to discover it.</i></li> <li>- <i>Information and activities that activate a students' prior knowledge and hiss critical thinking.</i></li> <li>- <i>Information and activities related to real life examples and written with an active style allowing a better understanding for students.</i></li> <li>- <i>The book should respect the level and age of the student and present concepts related to previous classes</i></li> </ul> <p>1.3 and 1.2: <i>this chapter contains two lessons titled: (1) cells universe and (2)cells functions. The concepts are well presented in terms of level, critical thinking and active style especially that the concepts are explained through activities included in the student textbook. For example: comparing the cell to a bakery and connecting each function in the cell to an equivalent one in the bakery. This comparison is very useful for the students because it helps them to understand the content in depth, something that is emphasized in the philosophy of the original textbook.</i></p> <p>1.3: <i>The learning objectives are focused on content with no attention to skills (skills are emphasized in the philosophy of the original textbooks). Moreover, the objectives are at lower cognitive levels.</i></p> <p>1.5: <i>Some of the assessment exercises at the end of the chapter and in the lessons are closed, limited to the content of the chapters and direct applications without any concrete examples. For example:" Explain the importance of the word reproduction"</i>  <i>For example:" Describe how the cell sufficient energy for it is activities"</i></p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>40. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>40.1.Length of sentences</i>				✓
<i>40.2.Complexity of sentences</i>				✓
<i>40.3.Diversity of language structures</i>				✓
<i>40.4.Number of concepts per chapter</i>				✓
<i>40.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>40.6.Clarity of definitions of technical terms</i>				✓
<i>40.7.Using concrete examples to illustrate concepts</i>				✓
<i>40.8.Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>52. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>52.1. Illustrations</i>				✓
<i>52.2. Content</i>				✓
<i>52.3. Activities</i>				✓
<i>52.4. Practice Exercises</i>				✓
<i>52.5. Assessment exercises</i>				✓
<i>52.6. Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>53. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>53.1. Illustrations</i>				✓
<i>53.2. Content</i>				✓
<i>53.3. Activities</i>				✓
<i>53.4. Practice Exercises</i>				✓



53.5.	<i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3					
Comments and explanation on implementing the indicator.					
Additional indicators and other comments.					





<b>Book Evaluation Form</b>	Subject: Science			
	Grade:7			
	Textbook Title: Science			
	Chapter Title:The role of genes in genetics- second semester			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>64. Alignment of the translated texts to the philosophy of the original textbook</b>				
64.1. <i>Content of the Chapter</i>				✓
64.2. <i>Activities included in the chapter</i>				✓
64.3. <i>Learning objectives</i>	✓			
64.4. <i>Practice exercises</i>				✓
64.5. <i>Assessment exercises</i>			✓	
64.6. <i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Teaching not only the scientific concepts but also showing how scientists were able to discover it.</li> <li>- Information and activities that activate a students' prior knowledge and hiss critical thinking.</li> <li>- Information and activities related to real life examples and written with an active style allowing a better understanding for students.</li> <li>- The book should respect the level and age of the student and present concepts related to previous classes</li> </ul> <p>1.4 and 1.2: this chapter contains two lessons titled: (1) life continuity and (2) genetics science. The concepts are well presented in the three books in terms of level, critical thinking and active style especially that the concepts are explained through illustrations and tables (student book and practice book). For example: They helped students to discover Mendel's laws by using through tennis ball activity.</p> <p>1.3: the learning objectives are focused on content with no attention to skills (skills are emphasized in the philosophy of the original textbooks). Moreover, the objectives are at lower cognitive levels.</p> <p>1.5: Some of the assessment exercises at the end of the chapter and in the lessons are closed, limited to the content of the chapters and direct applications without any concrete examples. For example: " Explain the importance of the word reproduction"</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>41. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>41.1.Length of sentences</i>				✓
<i>41.2.Complexity of sentences</i>				✓
<i>41.3.Diversity of language structures</i>				✓
<i>41.4.Number of concepts per chapter</i>			✓	
<i>41.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>41.6.Clarity of definitions of technical terms</i>				✓
<i>41.7.Using concrete examples to illustrate concepts</i>				✓
<i>41.8.Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>54. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>54.1. Illustrations</i>				✓
<i>54.2. Content</i>				✓
<i>54.3. Activities</i>				✓
<i>54.4. Practice Exercises</i>				✓
<i>54.5. Assessment exercises</i>				✓
<i>54.6. Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

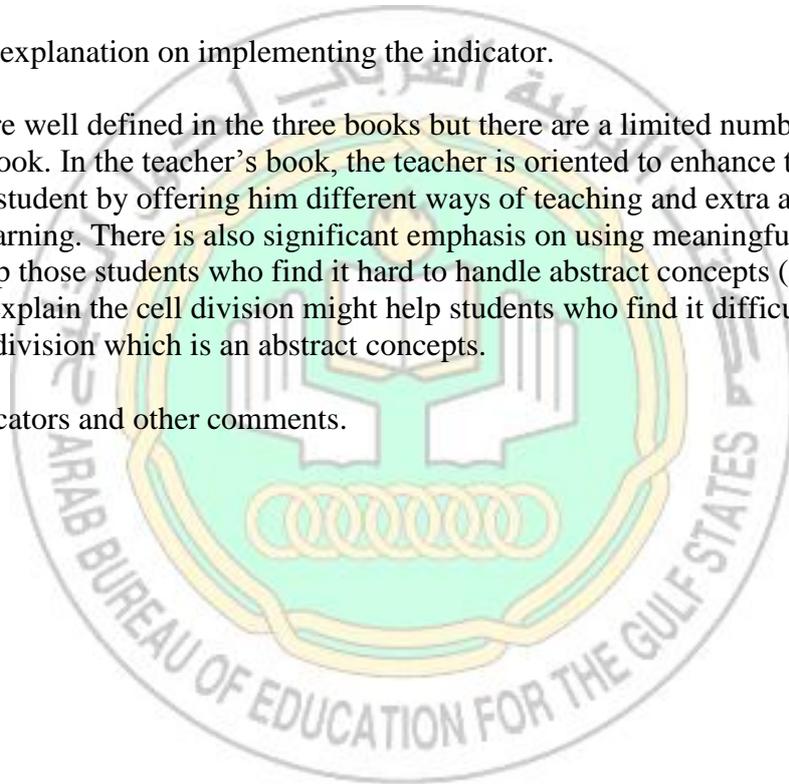


	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>55. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
55.1. <i>Illustrations</i>				✓
55.2. <i>Content</i>				✓
55.3. <i>Activities</i>				✓
55.4. <i>Practice Exercises</i>				✓
55.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

The concepts are well defined in the three books but there are a limited number of activities in the student book. In the teacher's book, the teacher is oriented to enhance the critical thinking of the student by offering him different ways of teaching and extra activities that will enhance learning. There is also significant emphasis on using meaningful hands-on activities to help those students who find it hard to handle abstract concepts (for example, using wires to explain the cell division might help students who find it difficult to imagine the process of cell division which is an abstract concepts).

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade:7			
		Textbook Title: Science			
		Chapter Title: Atmosphere's rotation - second semester			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>65. Alignment of the translated texts to the philosophy of the original textbook</b>					
65.1.	<i>Content of the Chapter</i>			✓	
65.2.	<i>Activities included in the chapter</i>				✓
65.3.	<i>Learning objectives</i>	✓			
65.4.	<i>Practice exercises</i>				✓
65.5.	<i>Assessment exercises</i>			✓	
65.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Teaching not only the scientific concepts but also showing how scientists were able to discover it.</li> <li>- Information and activities that activate a students' prior knowledge and hiss critical thinking.</li> <li>- Information and activities related to real life examples and written with an active style allowing a better understanding for students.</li> <li>- The book should respect the level and age of the student and present concepts related to previous classes</li> </ul> <p>1.5 : this chapter contains two lessons titled: (1) atmosphere and whether and (2) cloud and wind fronts. The content of the lesson 1 is difficult in comparison with the second one due to the presence of a lot of concepts, definitions and difficult words.</p> <p>1.3: the learning objectives are focused on content with no attention to skills (skills are emphasized in the philosophy of the original textbooks). Moreover, the objectives are at lower cognitive levels.</p> <p>1.5: Some of the assessment exercises at the end of the chapter and in the lessons are closed, limited to the content of the chapters and direct applications without any concrete examples. For example: " Describe 5 operation of the water cycle"</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>42. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>42.1.Length of sentences</i>				✓
<i>42.2.Complexity of sentences</i>			✓	
<i>42.3.Diversity of language structures</i>			✓	
<i>42.4.Number of concepts per chapter</i>		✓		
<i>42.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>42.6.Clarity of definitions of technical terms</i>		✓		
<i>42.7.Using concrete examples to illustrate concepts</i>				✓
<i>42.8.Redundancy of terms and sentences with no educational benefit.</i>				✓
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 3</p> <p><i>2.1, 2.4 and 2.6: some complex words like: Mesosphere, stratosphere, thermosphere, Ionosphere and Exosphere are present in the same paragraph. Each of these words is well defined but their presence in the same paragraph make it very condensed. This could create problems of memory overload confusion for students.</i></p>				
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>56. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>56.1. Illustrations</i>				✓
<i>56.2. Content</i>				✓
<i>56.3. Activities</i>				✓
<i>56.4. Practice Exercises</i>				✓
<i>56.5. Assessment exercises</i>				✓
<i>56.6. Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 3 given a score of less than 3</p>				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>57. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
57.1. <i>Illustrations</i>				✓
57.2. <i>Content</i>				✓
57.3. <i>Activities</i>				✓
57.4. <i>Practice Exercises</i>				✓
57.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.





## REPORT ON SCIENCE TEXTBOOKS IN GRADE 7- SECOND TERM

The following report is an evaluation of science books in grade 7 (second semester). Each of the student textbook, practice book and teacher guidebook is divided into eight chapters. Four chapters: (1) "Atmosphere's rotation ", (2) "cells for life foundation ", (3) "cells for life foundation " and (4) "The science of the environment " were analyzed. The following results are based on the three evaluation forms.

The analysis concerning the **alignment of the translated texts to the philosophy of the original textbook** showed satisfactory evidence of alignment for the practice exercises and the skills in all chapters. Almost satisfactory evidence is shown for the content of and the assessment exercises in chapters due to the presence of a lot of concepts, definitions, difficult words and a lot of detailed information in these chapters. Alternatively, there is satisfactory evidence that the assessment exercises and content in chapters 2 and 3 are aligned with the textbook philosophy because the concepts are explained through activities included in the text of the student textbook. For example in chapter 2, the cell is compared to a bakery and each function in it is connected to an equivalent one in the bakery.

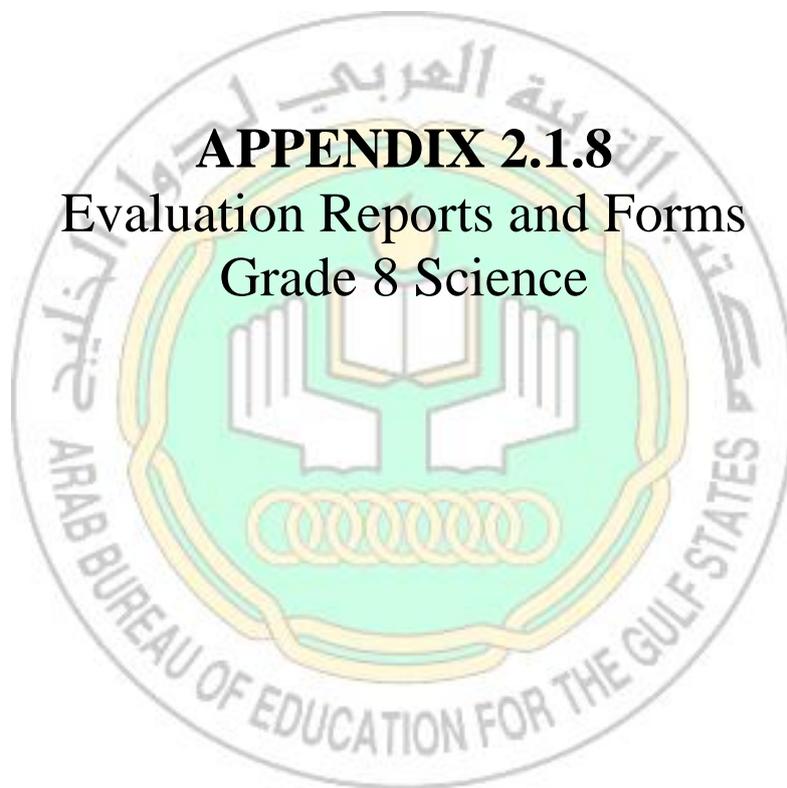
The activities included in the chapters 1, 2 and 3 show satisfactory evidence of alignment with the philosophy because the concepts are explained through examples and activities related to real life. In chapter 4, two activities only are present because it is focused on descriptions, definitions and illustrations.

One of the problems that cuts across the chapters is that the learning objectives are focused on a academic content, neglect skills, and are written at lower cognitive levels. This situation provides no evidence that the objectives are aligned with the stated philosophy of the textbooks.

**Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students:** The analysis showed almost satisfactory to satisfactory evidence for all criteria except for indicators 2.4 and 2.6 in chapters 1 and 4. This is due to the presence of detailed information in the chapters and to the presence of complex words like: Mesosphere, stratosphere, thermosphere, Ionosphere and Exosphere that are present in the same paragraph. Even though these terms are well defined, including them in one paragraph might overload students' memory and make it hard for them to retain this information.

**Suitability of the Arabization of the translated textbooks to serve the math and science concepts:** Satisfactory evidence was found with respect to the 6 criteria in this rubric: (1) illustrations; (2) content; (3) activities; (4) practice exercises; (5) assessment exercises and (6) skills.

**Suitability of the translated textbooks to the cultural context of The Gulf States:** Satisfactory evidence was found with respect to the 5 criteria in this rubric: (1) illustrations, (2) content, (3) activities, (4) practice exercises and (5) assessment.





## Table of Contents

Class: Second Intermediate

Semester 1

**English Version:** Science Level Green

Chapters in the order that appears in the Arabic version Chapters 1, 21, 22, 24, 13, 14

**(Please refer to the copies of the table of content of the two versions for comparison)**

- The tables of contents of the two versions are almost 75% aligned by lessons, lesson titles and translations of titles.

- In every chapter in the Arabic version, there are extra sections:

- أتهيأ للقراءة
- دليل مراجعة الفصل
- مراجعة الفصل
- مسرد المصطلحات
- إستقصاء من واقع الحياة

- These sections appear in the table of content of the Arabic version only. However, they are found in the original book as well but not included within the table of content of the original book. However, the section إستقصاء من واقع الحياة may also include the same lab activities that are found in the English version of the book (but in the original book, these labs are not found in the table of content).

- The lab activities that are within the original version of the book outnumber those in the Arabic version. (Please refer to the lab table of content in the two versions to see the overlap that is found within the table of contents of the two)

- Pictures that are found in the original English version are not found (nor any other pictures) in the Arabic version of the book.



<b>Book Evaluation Form</b>		Subject: Science				
		Grade: Second Intermediate				
		Semester: ONE				
		Textbook Title: Science				
		Chapter Title: Chapter 2 States of Matter الفصل الثالث: حالات المادة				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<i>Criterion/Indicator</i>						
<b>66. Agreement of the translated Arabic book with that of the English book</b>						
66.1. <i>Definitions and explanations in the chapter</i>				X		
66.2. <i>Activities included in the chapter</i>			X		X	
66.3. <i>Learning objectives</i>						X
66.4. <i>Practice exercises</i>						X
66.5. <i>Assessment exercises</i>						X
1.6 <i>Figures, pictures and illustrations</i>					X	

### **1.1 Definitions and explanations in the chapter**

There exists little difference between the two versions concerning the definitions and explanations in the chapter. These differences appear in various forms. For example, at some instances, some words are missing and at other times some words are added within definitions. Such few differences appear mainly in the examples within the explanations.

- For example, in page 73 (Arabic version), a daily-life example of a physical concept is found that is not found in the original book.
- On pages 67, 70, 77, and 79 different URL's are given for the same topics.
- On page 74, iced tea (from the English version) is replaced with iced juice (in the Arabic version) within an example in a definition.

### **1.2 Activities included in the chapter**

Activities are considerably different comparing the two versions of the book. Sometimes, the difference appears due to cultural considerations (but only in rare cases). In most other cases, higher order and critical thinking skills are eliminated from the Arabic version. For example, in page 68, critical thinking questions are eliminated and only a list of facts is provided. Moreover, lab activities are not the same in the two versions.

### **1.3 Learning objectives**



Learning objectives are exactly the same in the two versions of the books.

#### ***1.4 Practice exercises***

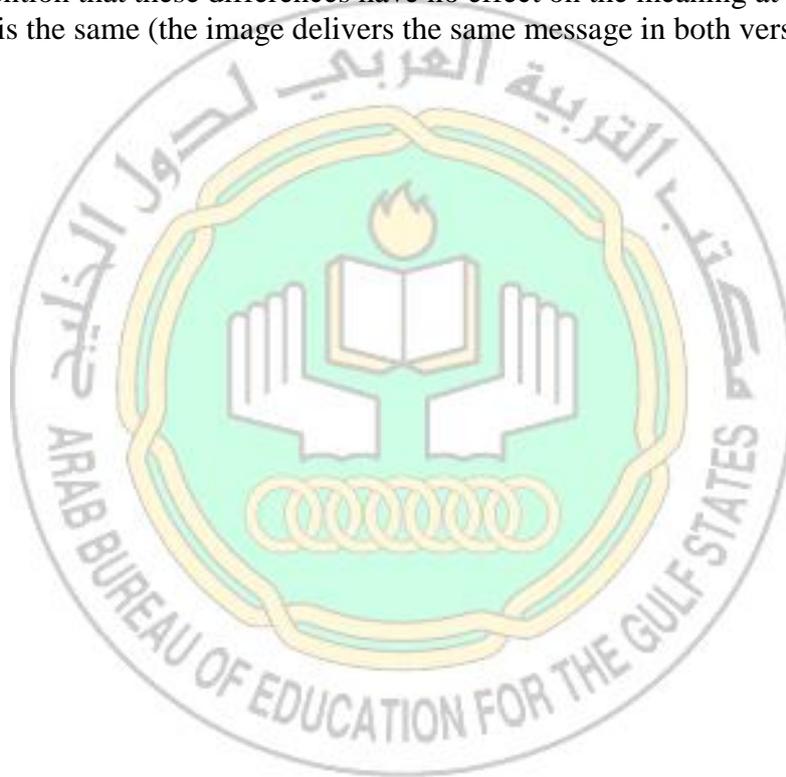
Practice exercises are exactly the same in the two versions of the books.

#### ***1.5 Assessment exercises***

Assessment exercises are exactly the same in the two versions of the books.

#### ***1.6 Figures, pictures and illustrations***

Figures and illustrations in the Arabic version of the book are quite different than those in the original book mainly due to cultural considerations. For example, ALL pictures of females (dancing, jumping, or swimming) are replaced by males doing that. One more interesting thing is that all pictures (including inanimate pictures of walls, mountains and such) are replaced with other (but similar) pictures. See all pages for examples. However, it is important to mention that these differences have no effect on the meaning at all. The content of each picture is the same (the image delivers the same message in both versions of the book).





Class: Second Intermediate

Semester 2

**English Version:** Science Levels Green & Blue

Chapters in the order that appears in the Arabic version Chapters: Level G 15, Level G 16, Level G 17, Level G 18 + 19, Level B 21, and Level B 24

**(Please refer to the copies of the table of content of the two versions for comparison)**

- The tables of contents of the two versions are almost 85% aligned by lessons, lesson titles and translations of titles.

- In every chapter in the Arabic version, there are extra sections:

- أتهياً للقراءة
- دليل مراجعة الفصل
- مراجعة الفصل
- مسرد المصطلحات
- إستقصاء من واقع الحياة

- These sections appear in the table of content of the Arabic version only. However, they are found in the original book as well but not included within the table of content of the original book. However, the section إستقصاء من واقع الحياة may also include the same lab activities that are found in the English version of the book (but in the original book, these labs are not found in the table of content).

- The lab activities that are within the original version of the book outnumber those in the Arabic version. (Please refer to the lab table of content in the two versions to see the overlap that is found within the table of contents of the two)

- Pictures that are found in the original English version are not found (nor any other pictures) in the Arabic version of the book.



<b>Book Evaluation Form</b>	Subject: Science				
	Grade: Second Intermediate				
	Semester: TWO				
	Textbook Title: Science				
	Chapter Title: Chapter 12: Waves, Sound and Light				
Criterion/Indicator	Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>1. Agreement of the translated Arabic book with that of the English book</b>					
<i>1.1. Definitions and explanations in the chapter</i>					X
<i>1.2. Activities included in the chapter</i>			X		
<i>1.3. Learning objectives</i>					X
<i>1.4. Practice exercises</i>					X
<i>1.5. Assessment exercises</i>					X
<i>1.6 Figures, pictures and illustrations</i>				X	

### ***1.1 Definitions and explanations in the chapter***

There exists no difference when it comes to definitions and explanations of the concepts within the two chapters. I have found the two chapters almost completely aligned except for the uncovered lessons (that already appear within the table of content)

### ***1.2 Activities included in the chapter***

There exists little difference when it comes to the activities and lab experiments within the two versions of the chapter. However, the difference is not major. For example, there is an omission of one lab activity that is found in the original book but not in the Arabic book (See page Science Level Blue p. 706)

### ***1.3 Learning objectives***

Learning objectives are exactly the same in the two versions of the books.

### ***1.4 Practice exercises***

Practice exercises are exactly the same in the two versions of the books.

### ***1.5 Assessment exercises***

Assessment exercises are exactly the same in the two versions of the books.



### **1.6 Figures, pictures and illustrations**

Figures and illustrations in the Arabic version of the book are quite different that those in the original book mainly due to cultural considerations. For example, ALL pictures of females (dancing, jumping, or swimming) are replaced by males doing that. One more interesting thing is that all pictures (including inanimate pictures of walls, mountains and such) are replaced with other (but similar) pictures. See all pages for examples.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Second Intermediate			
		Textbook Title: Science			
		Chapter Title: Chapter 3: States of Matter			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>2. Alignment of the translated texts to the philosophy of the original textbook</b>					
2.1. Content of the Chapter					X
2.2. Activities included in the chapter					X
2.3. Learning objectives		X			
2.4. Practice exercises				X	
2.5. Assessment exercises				X	
2.6. Skills					X
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.1 objectives in the chapter include only Bloom levels 1 and 2. They are not aligned neither with the philosophy of the book nor with the content of the chapter. These objectives include the rote recitation and recall of the science concepts within the chapter.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
2.1. Length of sentences					X
2.2. Complexity of sentences					X
2.3. Diversity of language structures				X	
2.4. Number of concepts per chapter					X
2.5. Reuse of technical terms in subsequent lessons and chapters				X	
2.6. Clarity of definitions of technical terms				X	
2.7. Using concrete examples to illustrate concepts					X
2.8. Redundancy of terms and sentences with no educational benefit.				X	
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 3</p>					



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>3.1. Illustrations</i>				X
<i>3.2. Content</i>			X	
<i>3.3. Activities</i>				X
<i>3.4. Practice Exercises</i>				X
<i>3.5. Assessment exercises</i>				X
<i>3.6. Skills</i>			X	
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>4. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>4.1. Illustrations</i>				X
<i>4.2. Content</i>				X
<i>4.3. Activities</i>			X	
<i>4.4. Practice Exercises</i>			X	
<i>4.5. Assessment exercises</i>			X	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Second Intermediate			
		Textbook Title: Science			
		Chapter Title: Chapter 4: Energy and Energy			
		Resources			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>3. Alignment of the translated texts to the philosophy of the original textbook</b>					
3.1. <i>Content of the Chapter</i>					X
3.2. <i>Activities included in the chapter</i>				X	
3.3. <i>Learning objectives</i>					X
3.4. <i>Practice exercises</i>					X
3.5. <i>Assessment exercises</i>				X	
3.6. <i>Skills</i>				X	
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>3. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
3.1. <i>Length of sentences</i>					X
3.2. <i>Complexity of sentences</i>				X	
3.3. <i>Diversity of language structures</i>				X	
3.4. <i>Number of concepts per chapter</i>					X
3.5. <i>Reuse of technical terms in subsequent lessons and chapters</i>					X
3.6. <i>Clarity of definitions of technical terms</i>					X
3.7. <i>Using concrete examples to illustrate concepts</i>					X
3.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				X	
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3					



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>5. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>5.1. Illustrations</i>			X	
<i>5.2. Content</i>			X	
<i>5.3. Activities</i>				X
<i>5.4. Practice Exercises</i>				X
<i>5.5. Assessment exercises</i>			X	
<i>5.6. Skills</i>				X
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>6. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>6.1. Illustrations</i>			X	
<i>6.2. Content</i>			X	
<i>6.3. Activities</i>				X
<i>6.4. Practice Exercises</i>				X
<i>6.5. Assessment exercises</i>				X
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



<b>Book Evaluation Form</b>	Subject: Science			
	Grade: Second Intermediate			
	Textbook Title: Science			
	Chapter Title: Chapter 6: Digestion, Respiration and Bowel Movements			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>4. Alignment of the translated texts to the philosophy of the original textbook</b>				
4.1. <i>Content of the Chapter</i>				
			X	
4.2. <i>Activities included in the chapter</i>				
		X		
4.3. <i>Learning objectives</i>				
			X	
4.4. <i>Practice exercises</i>				
			X	
4.5. <i>Assessment exercises</i>				
			X	
4.6. <i>Skills</i>				
		X		
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3				
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>4. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
4.1. <i>Length of sentences</i>				
				X
4.2. <i>Complexity of sentences</i>				
			X	
4.3. <i>Diversity of language structures</i>				
				X
4.4. <i>Number of concepts per chapter</i>				
			X	
4.5. <i>Reuse of technical terms in subsequent lessons and chapters</i>				
				X
4.6. <i>Clarity of definitions of technical terms</i>				
			X	
4.7. <i>Using concrete examples to illustrate concepts</i>				
				X
4.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				
				X
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>7. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>7.1. Illustrations</i>				X
<i>7.2. Content</i>				X
<i>7.3. Activities</i>				X
<i>7.4. Practice Exercises</i>				X
<i>7.5. Assessment exercises</i>			X	
<i>7.6. Skills</i>				X
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>8. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>8.1. Illustrations</i>				X
<i>8.2. Content</i>			X	
<i>8.3. Activities</i>				X
<i>8.4. Practice Exercises</i>				X
<i>8.5. Assessment exercises</i>				X
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



## Science Report

**Subject:** Science

Semester 1

**Class:** Second Intermediate

**Chapters:** 3, 4 & 6

The following report is an evaluation of physics books in Second Intermediate (1<sup>st</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into two chapters. Three out of six chapters were selected. The chapters are, chapter 3: States of Matter, Chapter 4: Energy and Energy Resources, and Chapter 6: Digestion, Respiration and Bowel Movements.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **Philosophy of the book (Second Intermediate)**

- Presenting the scientific content in an interesting manner
- Activating student's scientific mind
- Encourages the student to examine events and natural phenomena, and distinguish their characteristics
- **Teacher's role:** guide and supportive of the teaching and learning process
- The book includes a large number of activities that aid in constructing the scientific concepts
- The book also includes a lot of critical thinking questions that drives the student's scientific curiosity and let him/her link knowledge with the scientific life, and encourages him/her to learn science properly
- **The student's lab manual** includes many experiments of a variety of levels that aim to build and promote the practical as well as the scientific concepts among the students.
- The experiments aim at acquiring students intellectual as well as practical skills, and improving his attitudes towards research, inquiry and group work.

### **1. Alignment of the translated texts to the philosophy of the original textbook.**



The book is very well aligned with the philosophy of the original book. In fact, the book includes plenty of daily life examples that encourage students to engage in active learning activities, plan and conduct their own experiments. The books include good ideas for the teacher (within the teacher's guide) that supports the active process of learning. Moreover, the activities included in the student's book as well as within the student's lab manual are very engaging and contain higher orders of inquiry.

## **2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

The books are translated in such a way that takes into account the students' educational levels regarding the length as well as complexity of sentences. Concepts are organized and fully explained and examples of everyday life are clearly presented. Moreover, figures, pictures and illustrations serve to further explain the science concepts in a suitable way.

## **3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**

All items clearly explain the science concepts. Moreover, teacher's guide offers extra guidance for content, activities and projects that enrich the scientific elaboration of the concepts at hand.

The science concepts are supported with figures and illustrations from around the world and those figures are well explained to serve the science concepts under study.

## **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

The book is well aligned with the Gulf context. The book contains pictures within the KSA culture only and the pictures include boys (only boys) at similar ages of the students at this level. The figures are taken within students' everyday life and integrated with the science concepts under study.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Second Intermediate			
		Textbook Title: Science			
		Chapter Title: Chapter 9: Plants and Environment			
		Resources			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>5. Alignment of the translated texts to the philosophy of the original textbook</b>					
5.1. Content of the Chapter				X	
5.2. Activities included in the chapter				X	
5.3. Learning objectives			X		
5.4. Practice exercises			X		
5.5. Assessment exercises					X
5.6. Skills					X
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 Although the philosophy of the original book does not mention anything about the objectives, the general image of the philosophy implies that the objectives (i.e. students' outcomes by the end of the chapter) are expected to be of higher order thinking skills. The objectives of this chapter are all Bloom levels 1 and 2 with no higher order thinking skills and nothing of what the philosophy aims to prepare of the students. More specifically, the content of the chapter carries a lot more than what the objectives state. So the objectives are not aligned with the content of the chapter as well.</p> <p>1.4 Despite the fact that assessment exercises as well as activities include higher order thinking skills, practice exercises fall short in this matter as they only include basic recall questions of scientific ideas that have been just mentioned. For example, in page 93, a drill exercise asks the question about "the roles of stems in plants" (what are the role of stems in plants) and the answer is just above this question. Furthermore, in page 95, a similar questions asks "what is the importance of cones in non-seed plants", a question whose answer is right next to the question. Such questions are not aligned with the philosophy of the book regarding questioning the students in an aim to promote their scientific skills and knowledge.</p>					

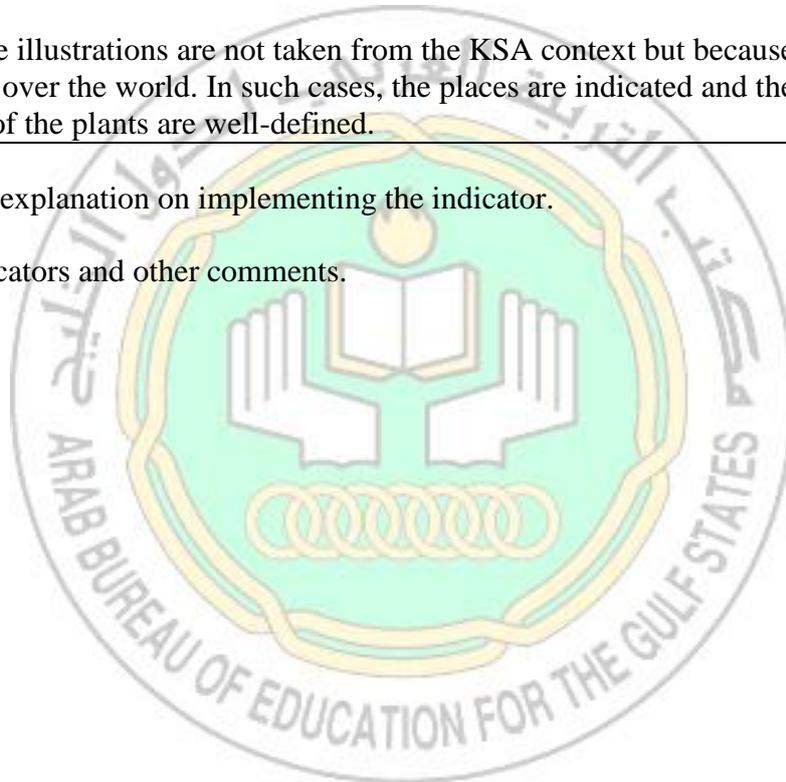
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>5. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>5.1. Length of sentences</i>				X
<i>5.2. Complexity of sentences</i>			X	
<i>5.3. Diversity of language structures</i>			X	
<i>5.4. Number of concepts per chapter</i>			X	
<i>5.5. Reuse of technical terms in subsequent lessons and chapters</i>				X
<i>5.6. Clarity of definitions of technical terms</i>			X	
<i>5.7. Using concrete examples to illustrate concepts</i>				X
<i>5.8. Redundancy of terms and sentences with no educational benefit.</i>			X	
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>9. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>9.1. Illustrations</i>				X
<i>9.2. Content</i>			X	
<i>9.3. Activities</i>			X	
<i>9.4. Practice Exercises</i>				X
<i>9.5. Assessment exercises</i>			X	
<i>9.6. Skills</i>				X
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>10. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>10.1. Illustrations</i>		X		
<i>10.2. Content</i>			X	
<i>10.3. Activities</i>			X	
<i>10.4. Practice Exercises</i>				X
<i>10.5. Assessment exercises</i>			X	
<p>Illustrate by at least one example any indicator of criterion 4 given a score of less than 3</p> <p>4.1 Many on the illustrations are not taken from the KSA context but because the lesson is about plants all over the world. In such cases, the places are indicated and the climate characteristics of the plants are well-defined.</p>				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Second Intermediate			
		Textbook Title: Science			
		Chapter Title: Chapter 10: Protecting Environment Resources			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>6. Alignment of the translated texts to the philosophy of the original textbook</b>					
6.1. Content of the Chapter					X
6.2. Activities included in the chapter					X
6.3. Learning objectives		X			
6.4. Practice exercises					X
6.5. Assessment exercises					X
6.6. Skills					X
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 This chapter is very much related to controversial issues in science, to students' everyday life and to other ethical issues in science (as it includes issues of pollution and global warming); however, objectives of the chapter require students to “distinguish between renewable and non-renewable resources”, “prepare a list of the uses of fossil fuels”, and “indicate the alternatives of fossil fuels”.</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>6. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
6.1. Length of sentences					X
6.2. Complexity of sentences				X	
6.3. Diversity of language structures					X
6.4. Number of concepts per chapter				X	
6.5. Reuse of technical terms in subsequent lessons and chapters					X
6.6. Clarity of definitions of technical terms					X
6.7. Using concrete examples to illustrate concepts				X	
6.8. Redundancy of terms and sentences					X



*with no educational benefit.*

Illustrate by at last one example any indicator of criterion 2 given a score of less than 3

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>11. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>11.1. Illustrations</i>				X
<i>11.2. Content</i>			X	
<i>11.3. Activities</i>			X	
<i>11.4. Practice Exercises</i>			X	
<i>11.5. Assessment exercises</i>			X	
<i>11.6. Skills</i>				X

Illustrate by at last one example any indicator of criterion 3 given a score of less than 3

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>12. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>12.1. Illustrations</i>		X		
<i>12.2. Content</i>			X	
<i>12.3. Activities</i>				X
<i>12.4. Practice Exercises</i>			X	
<i>12.5. Assessment exercises</i>				X

Illustrate by at last one example any indicator of criterion 4 given a score of less than 3

3.1 There are very few pictures taken from KSA and a lot of other pictures taken from other parts of the world but they are well expressive and they could not be replaced with other pictures (within KSA).

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: Second Intermediate			
		Textbook Title: Science			
		Chapter Title: Chapter 12: Waves, Sound and Light			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>7. Alignment of the translated texts to the philosophy of the original textbook</b>					
7.1. <i>Content of the Chapter</i>					X
7.2. <i>Activities included in the chapter</i>				X	
7.3. <i>Learning objectives</i>		X			
7.4. <i>Practice exercises</i>				X	
7.5. <i>Assessment exercises</i>				X	
7.6. <i>Skills</i>					X
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 objectives are almost all didactic and of bloom levels 1 and 2. There is no objectives that expect students to think on higher order skills or to link what they learn in this chapter with their daily life (although, again, the content includes plenty of such skills).</p>					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>7. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
7.1. <i>Length of sentences</i>					X
7.2. <i>Complexity of sentences</i>					X
7.3. <i>Diversity of language structures</i>				X	
7.4. <i>Number of concepts per chapter</i>					X
7.5. <i>Reuse of technical terms in subsequent lessons and chapters</i>				X	
7.6. <i>Clarity of definitions of technical terms</i>					X
7.7. <i>Using concrete examples to illustrate concepts</i>				X	
7.8. <i>Redundancy of terms and sentences with no educational benefit.</i>					X
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 3</p>					



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>13. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
13.1. <i>Illustrations</i>			X	
13.2. <i>Content</i>			X	
13.3. <i>Activities</i>				X
13.4. <i>Practice Exercises</i>			X	
13.5. <i>Assessment exercises</i>			X	
13.6. <i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>14. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
14.1. <i>Illustrations</i>		X		
14.2. <i>Content</i>			X	
14.3. <i>Activities</i>				X
14.4. <i>Practice Exercises</i>			X	
14.5. <i>Assessment exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				
4.1 There are a couple of instances where examples of waves are given out of context when they can be replaced with so other examples that are within the context of KSA. For example, Page 168 picture of wave surfing				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



## Science Report

**Subject:** Science

Semester 2

**Class:** Second Intermediate

**Chapters:** 9, 10 & 12

The following report is an evaluation of physics books in Second Intermediate (2<sup>nd</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into two chapters. Three out of six chapters were selected. The chapters are, chapter 9: Plants and Environment Resources, Chapter 10: Protecting Environment Resources, and Chapter 12: Waves, Sound and Light.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### Philosophy of the book (Second Intermediate)

- Presenting the scientific content in an interesting manner
- Activating student's scientific mind
- Encourages the student to examine events and natural phenomena, and distinguish their characteristics
- **Teacher's role:** guide and supportive of the teaching and learning process
- The book includes a large number of activities that aid in constructing the scientific concepts
- The book also includes a lot of critical thinking questions that drives the student's scientific curiosity and let him/her link knowledge with the scientific life, and encourages him/her to learn science properly
- **The student's lab manual** includes many experiments of a variety of levels that aim to build and promote the practical as well as the scientific concepts among the students.
- The experiments aim at acquiring students intellectual as well as practical skills, and improving his attitudes towards research, inquiry and group work.



### **1. Alignment of the translated texts to the philosophy of the original textbook.**

Activities at the beginning of each chapter are very much aligned with the philosophy of the book as they promote critical thinking and invite students to inquire about reasons for discrepant events that are mostly within their daily lives.

However, objectives of the chapter, although not mentioned in the philosophy of the book, are too narrow and focused on mere academic concepts that the content of the chapters offer a lot more than that. For example, in chapter 9, objectives are very rote and recall memory type of pure scientific facts; despite the fact that the content of this chapter is very much related to students' everyday life.

The content of the book is presented in an excellent and an exciting way that is very much linked with students' everyday life and issues that matter to the students (within the world such as controversial issues and other issues in the media).

The activities as well as the assessment exercises promote students' scientific skills quite well with the teacher's assistance.

### **2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

The books are translated in such a way that takes into account the students' educational levels regarding the length as well as complexity of sentences. Concepts are organized and fully explained and examples of everyday life are clearly presented. Moreover, figures, pictures and illustrations serve to further explain the science concepts in a suitable way.

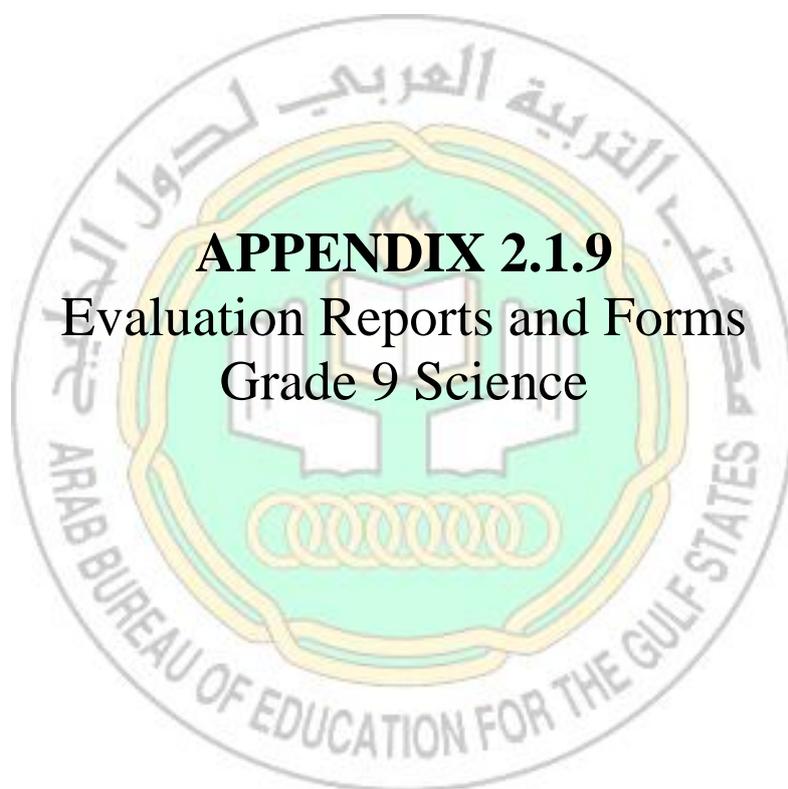
### **3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**

All items clearly explain the science concepts. Moreover, teacher's guide offers extra guidance for content, activities and projects that enrich the scientific elaboration of the concepts at hand.

The science concepts are supported with figures and illustrations from around the world and those figures are well explained to serve the science concepts under study.

### **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

The book is well aligned with the Gulf context. Where possible, the authors do include pictures and examples of the lessons under study that are found in their culture. However, and since the chapters evaluated in this book are not directly relevant to students' everyday life (at KSA), there are a plenty of figures, pictures and illustrations that are taken from around the world. These pictures are well explained and elaborated so they do not fail to deliver a clear explanation of the desired concept.



**APPENDIX 2.1.9**  
Evaluation Reports and Forms  
Grade 9 Science



**Important:** A chapter from the two versions (the English as well as the Arabic versions of the books) should be translated. The codes and notes are to be written on the Arabic version of the book with an exception of notes on the original book (when an item appears in the original book but is missing in the Arabic version of the book).

Difference is due mainly to **QUALITY** difference and not just the number of missing, extra, or different items. Sometimes, a small difference in a sentence is a big difference in the meaning (i.e. large difference even if few occurrences).

<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 9		Semester:1		
		Textbook Title:				
		Chapter Title: Atoms consistency				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<i>Criterion/Indicator</i>						
<b>8. Agreement of the translated Arabic book with that of the English book</b>						
8.1. Definitions and explanations in the chapter						✓
8.2. Activities included in the chapter						✓
8.3. Learning objectives						✓
8.4. Practice exercises						✓
8.5. Assessment exercises				✓		
8.6. Figures, pictures and illustrations						✓
<b>9. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
9.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

**Guidelines for filling this form (Item 1 only):**

11. One form is to be filled for each of the three books (student, practice, teacher) for each semester
12. You need to have a copy of the Table of Content of each book and of one chapter of the book chosen from the chapters you have already selected



13. For the chapter, for each item (for example, definition, explanation, activity...) one of the four scale points:
  - a. '1' for completely different
  - b. '2' for large difference
  - c. '3' for little difference
  - d. '4' difference due only to cultural context
  - e. '5' no difference
14. Check the appropriate box in the rubric based on the frequency of each value
15. Write a short report under the headings 1.1 to 1.5 and attach to it the copies of the coded selected chapter.

**- In addition to the scale points, three colors are used to do the coding: The yellow color indicates no difference (scale point is 5), the green color indicates a difference between the original and translated textbook (scale point is 2, 3 or 4) and the pink color indicates that the original and translated textbook are completely different (scale point is 1).**

**- This analysis is based on the comparison just between the student's textbooks because it is the only English manual that is available. The practice and teacher textbook are not available.**

### 1.3 Definitions and explanations in the chapter

*The analysis showed similar definitions and explanations. Few examples are missed due to cultural difference. In addition, the sentences in the English version are short and express one idea. Whereas in some paragraphs of the Arabic version, the sentences are long and express more than one idea.*

### 1.2 Activities included in the chapter

The activities found in the translated textbook are similar to the ones in the original textbook with no difference.

### 1.3 Learning objectives

The same objectives appear in both books. These objectives are aligned and similar.

### 1.4 Practice exercises

The practice exercises found in both books are similar. On the other hand, there is an additional practice book in the translated collection of books related to each student textbook

### 1.5 Assessment

The assessment activities in this chapter are similar especially the assessment at the end of each lesson. However some assessment exercises, at the end of the chapter, are found in the original book and not found in the translated textbook.

### 1.6 Figures, pictures and illustrations

The figures and illustration are not typically the same, sometimes due to cultural difference, but they show the same idea or concept in the Arabic and English version.

## 2.1 Table of contents



The lessons of grade 9, first semester, are found in the Science Blue book. Even though the order of the chapters is not the same as the original book, the title for the chapters and lessons are the same. Except for chapter 1 (English and Arabic version) where the title is different: “What is science?” (English textbook) and “Science style” (Arabic version). In addition, little difference is also noticed in title of the first lesson of chapter 16 (English version): “Why do atoms combine?” (English textbook) and “Atoms combination” (Arabic version).





**Important:** A chapter from the two versions (the English as well as the Arabic versions of the books) should be translated. The codes and notes are to be written on the Arabic version of the book with an exception of notes on the original book (when an item appears in the original book but is missing in the Arabic version of the book).

Difference is due mainly to **QUALITY** difference and not just the number of missing, extra, or different items. Sometimes, a small difference in a sentence is a big difference in the meaning (i.e. large difference even if few occurrences).

<b>Book Evaluation Form</b>		Subject: Science				
		Grade: 9		Semester: 2		
		Textbook Title:				
		Chapter Title: Atoms consistency				
<i>Criterion/Indicator</i>		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>10. Agreement of the translated Arabic book with that of the English book</b>						
10.1. Definitions and explanations in the chapter						✓
10.2. Activities included in the chapter						✓
10.3. Learning objectives						✓
10.4. Practice exercises						✓
10.5. Assessment exercises				✓		
10.6. Figures, pictures and illustrations				✓		
<b>11. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
11.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

**Guidelines for filling this form (Item 1 only):**

16. One form is to be filled for each of the three books (student, practice, teacher) for each semester
17. You need to have a copy of the Table of Content of each book and of one chapter of the book chosen from the chapters you have already selected
18. For the chapter, for each item (for example, definition, explanation, activity...) one of the four scale points:



- a. '1' for completely different
  - b. '2' for large difference
  - c. '3' for little difference
  - d. '4' difference due only to cultural context
  - e. '5' no difference
19. Check the appropriate box in the rubric based on the frequency of each value
20. Write a short report under the headings 1.1 to 1.5 and attach to it the copies of the coded selected chapter.

**- In addition to the scale points, three colors are used to do the coding: The yellow color indicates no difference (scale point is 5), the green color indicates a difference between the original and translated textbook (scale point is 2, 3 or 4) and the pink color indicates that the original and translated textbook are completely different (scale point is 1).**

**- This analysis is based on the comparison just between the student's textbooks because it is the only English manual that is available. The practice and teacher textbook are not available.**

#### 1.4 Definitions and explanations in the chapter

The analysis showed similar definitions and explanations. Few examples are missed due to cultural difference. In addition, the sentences in the English version are short and express one idea. Whereas in some paragraphs of the Arabic version, the sentences are long and express more than one idea.

#### 1.2 Activities included in the chapter

The activities found in the translated textbook are similar to the ones in the original textbook with no difference.

#### 1.3 Learning objectives

The same objectives appear in both books. These objectives are aligned and similar.

#### 1.4 Practice exercises

The practice exercises found in both books are similar. On the other hand, there is an additional practice book in the translated collection of books related to each student textbook

#### 1.5 Assessment

The assessment activities in this chapter are similar especially the assessment at the end of each lesson. However some assessment exercises, at the end of the chapter, are found in the original book and not found in the translated textbook.

#### 1.6 Figures, pictures and illustrations

The figures and illustration are not typically the same, most of the time due to cultural difference, but they show the same idea or concept in the Arabic and English version.

#### 2.1 Table of contents



The lessons of grade 9, second semester, are found in the Science Blue and Green book. Even though the order of the chapters is not the same as the original book, the title for the chapters and lessons are almost the same. Part of the lessons in chapters 7 and 8 (Arabic version) are similar to the lessons in chapters 9, 10 and 11 in the Green book. However, some lessons are missed and not included in the same chapter as it is in the original book.

The chapters 8, 9, 10, 11 and 12 (Arabic textbook), grade 9, are found in the Blue level.

In the Science Blue level book, 12 chapters are missed from grade 9 (first and second semester). Those chapters are not found in another grade level. As for the science Green book, 11 chapters are missed from the Arabic version. Those chapters are not found in another grade level. However, there are 9 chapters found in grade 8 (Second intermediate level).





<b>Book Evaluation Form</b>	Subject: Science			
	Grade: 9			
	Textbook Title: Science			
	Chapter Title: Atoms and chemical bonds			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>12. Alignment of the translated texts to the philosophy of the original textbook</b>				
12.1. Content of the Chapter		✓		
12.2. Activities included in the chapter		✓		
12.3. Learning objectives	✓			
12.4. Practice exercises		✓		
12.5. Assessment exercises	✓			
12.6. Skills			✓	
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Presenting the scientific content in an interesting way.</li> <li>- Encouraging students observe and interpret events by using science</li> <li>- Activating students' prior knowledge and encouraging them to become critical and creative thinkers</li> <li>- Providing students with opportunities to build their own knowledge by relating science to everyday life and providing them with opportunities to be active learners.</li> <li>- Empathizing hands-on and minds-on science activities to enhance student learning and develop positive attitudes to science.</li> </ul> <p>1.1: The concepts in the two lessons are well explained but not related to real life examples or activities. The student has to accept theory because the content of the chapter is not explained through real life applications or examples except for few questions at the end of each lesson. This is not aligned with the book philosophy.</p> <p>1.2: Only one real life activity per lesson is presented in the student book even though illustrations and real life examples are more used in this chapter. Also one type of activity is proposed: to <b>build a model</b> that explain the arrangement of electrons in atoms and bonds between atoms...</p> <p>1.3: The learning objectives are focused on content with no attention to skills (skills are emphasized in the philosophy of the original textbooks). Moreover, the objectives are at lower cognitive levels.</p> <p>1.4: The presence of a preparation activity at the beginning of the chapter is very useful because it can help the student to think about the concepts in the chapter. But in the lessons</p>				

*the practice exercises are only direct applications.*

*1.5: The assessment exercises and the "revision exercises" at the end of the chapter are almost all closed, limited to the content of the chapters and direct applications without any concrete examples. Therefore they do not respect the philosophy of the original textbook.*

*1.6: Questions related to real life are asked at the end of each lesson (such as designing models to explain theory). This can enhance students' skills and critical thinking.*

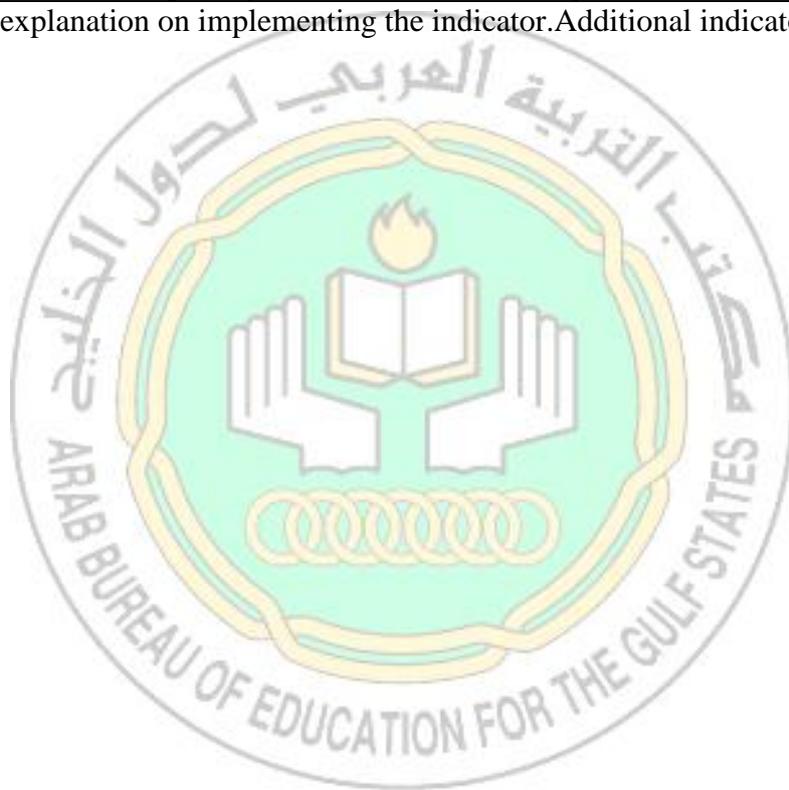
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>8. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>8.1. Length of sentences</i>				✓
<i>8.2. Complexity of sentences</i>				✓
<i>8.3. Diversity of language structures</i>				✓
<i>8.4. Number of concepts per chapter</i>				✓
<i>8.5. Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>8.6. Clarity of definitions of technical terms</i>				✓
<i>8.7. Using concrete examples to illustrate concepts</i>				✓
<i>8.8. Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>15. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>15.1. Illustrations</i>				✓
<i>15.2. Content</i>				✓
<i>15.3. Activities</i>				✓
<i>15.4. Practice Exercises</i>				✓
<i>15.5. Assessment exercises</i>				✓
<i>15.6. Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>16. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
16.1. <i>Illustrations</i>				✓
16.2. <i>Content</i>				✓
16.3. <i>Activities</i>				✓
16.4. <i>Practice Exercises</i>				✓
16.5. <i>Assessment exercises</i>				✓
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator. Additional indicators and other comments.





<b>Book Evaluation Form</b>	Subject: Science			
	Grade: 9			
	Textbook Title: Science			
	Chapter Title: Atoms consistency			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>13. Alignment of the translated texts to the philosophy of the original textbook</b>				
13.1. Content of the Chapter				
13.2. Activities included in the chapter				
13.3. Learning objectives				
13.4. Practice exercises				
13.5. Assessment exercises				
13.6. Skills				
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3 The book philosophy is based on:</p> <ul style="list-style-type: none"> <li>- Presenting the scientific content in an interesting way.</li> <li>- Encouraging students observe and interpret events by using science</li> <li>- Activating students' prior knowledge and encouraging them to become critical and creative thinkers</li> <li>- Providing students with opportunities to build their own knowledge by relating science to everyday life and providing them with opportunities to be active learners.</li> <li>- Empathizing hands-on and minds-on science activities to enhance student learning and develop positive attitudes to science.</li> </ul> <p>1.1: The concepts in the two lessons of this chapter are presented in a historical context (The development of the model of the atom starting with William Crookes's model followed by Thomson's model and Rutherford and his student's model.) These models are presented along with the experiments conducted by the scientists when they developed the models, thus giving students the opportunity to "see" science as it is developing. However, while this method is interesting, the presence of detailed information may create confusion for grade 9 students if the teacher is not careful in presenting it. Therefore the content is almost aligned with the philosophy of the original textbook</p> <p>1.2: One real life activity per lesson is presented in the student book whereas illustrations and real life examples are more used in this chapter. However, the activities in the practice book are based on real life examples.</p> <p>1.3: 1.3: The learning objectives are focused on content with no attention to skills (skills are emphasized in the philosophy of the original textbooks). Moreover, the objectives are at lower cognitive levels.</p>				

1.4: The presence of a preparation activity at the beginning of the chapter is very useful because it can help the student to think about the concepts in the chapter before the chapter is presented and thus may possibly activate prior knowledge.

1.5: The assessment exercises and the "revision exercises" at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. Therefore they do not respect the philosophy of the original textbook. But some exercises in the lesson (student book) are based on real life examples and critical thinking.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>9. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
9.1. Length of sentences				✓
9.2. Complexity of sentences				✓
9.3. Diversity of language structures				✓
9.4. Number of concepts per chapter			✓	
9.5. Reuse of technical terms in subsequent lessons and chapters				✓
9.6. Clarity of definitions of technical terms				✓
9.7. Using concrete examples to illustrate concepts				✓
9.8. Redundancy of terms and sentences with no educational benefit.				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>17. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
17.1. Illustrations				✓
17.2. Content				✓
17.3. Activities				✓
17.4. Practice Exercises				✓
17.5. Assessment exercises				✓
17.6. Skills				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>18. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
18.1. <i>Illustrations</i>				✓
18.2. <i>Content</i>				✓
18.3. <i>Activities</i>				✓
18.4. <i>Practice Exercises</i>				✓
18.5. <i>Assessment exercises</i>				✓
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				
Comments and explanation on implementing the indicator.				
Additional indicators and other comments.				





<b>Book Evaluation Form</b>	Subject: Science			
	Grade: 9			
	Textbook Title: Science			
	Chapter Title: Nature of science			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>14. Alignment of the translated texts to the philosophy of the original textbook</b>				
14.1. <i>Content of the Chapter</i>				
14.2. <i>Activities included in the chapter</i>				
14.3. <i>Learning objectives</i>				
14.4. <i>Practice exercises</i>				
14.5. <i>Assessment exercises</i>				
14.6. <i>Skills</i>				
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3 The book philosophy is based on:</p> <ul style="list-style-type: none"> <li>- Presenting the scientific content in an interesting way.</li> <li>- Encouraging students observe and interpret events by using science</li> <li>- Activating students' prior knowledge and encouraging them to become critical and creative thinkers</li> <li>- Providing students with opportunities to build their own knowledge by relating science to everyday life and providing them with opportunities to be active learners.</li> <li>- Empathizing hands-on and minds-on science activities to enhance student learning and develop positive attitudes to science.</li> </ul> <p>1.1: The concepts are presented through concrete examples in the three lessons of this chapter. A dialog between the student and his teacher is used to present the scientific method through a research project about cholera and E. Coli. Also new inventions like DVD, remote control, computer... are shown in order to highlight the role of science in the society.</p> <p>1.2: Only one real life activity per lesson is presented in the student book whereas illustrations and real life examples are more used in this chapter. However, the activities in the practice book are based on real life examples.</p> <p>1.3: 1.3: The learning objectives are focused on content with no attention to skills (skills are emphasized in the philosophy of the original textbooks). Moreover, the objectives are at lower cognitive levels.</p> <p>1.4: The presence of a preparatory activity at the beginning of the chapter is very useful because it can help the student to think about the concepts in the chapter before he studies the chapter, thus it could act as an activity to activate prior learning and link it to what being</p>				

covered in the chapter.

1.5: The assessment exercises and the "revision exercises" at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. Therefore they are not aligned with the philosophy of the original textbook. But some exercises in the lesson (student book) and the ones in the practice book are based on real life examples and require critical thinking.

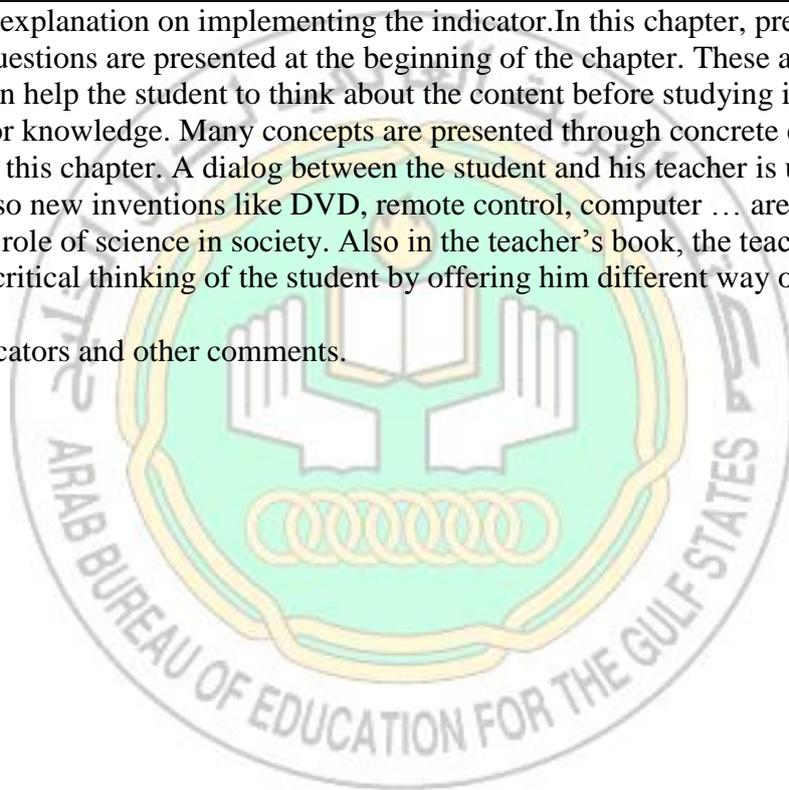
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>10. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
10.1.Length of sentences				✓
10.2.Complexity of sentences				✓
10.3.Diversity of language structures				✓
10.4.Number of concepts per chapter				✓
10.5.Reuse of technical terms in subsequent lessons and chapters				✓
10.6.Clarity of definitions of technical terms				✓
10.7.Using concrete examples to illustrate concepts				✓
10.8.Redundancy of terms and sentences with no educational benefit.				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>19. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
19.1. Illustrations				✓
19.2. Content				✓
19.3. Activities				✓
19.4. Practice Exercises				✓
19.5. Assessment exercises				✓
19.6. Skills				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>20. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
20.1. <i>Illustrations</i>				✓
20.2. <i>Content</i>				✓
20.3. <i>Activities</i>				✓
20.4. <i>Practice Exercises</i>				✓
20.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator. In this chapter, preparation activities and questions are presented at the beginning of the chapter. These are very useful because they can help the student to think about the content before studying it and possible activate his prior knowledge. Many concepts are presented through concrete examples in the three lessons of this chapter. A dialog between the student and his teacher is used to present the concept. Also new inventions like DVD, remote control, computer ... are shown in order to highlight the role of science in society. Also in the teacher's book, the teacher is oriented to enhance the critical thinking of the student by offering him different way of teaching.

Additional indicators and other comments.





## REPORT ON SCIENCE TEXTBOOKS IN GRADE 9- FIRST TERM

The following report is an evaluation of science books in grade 9 (first semester). Each of the student textbook, practice book and teacher guidebook is divided into six chapters. Three chapters: (1) " Nature of science ", (2) "Consistency of Atoms "and (3) " Atoms and chemical bonds" were analyzed. The following results are based on the three evaluation forms.

The analysis concerning the **alignment of the translated texts to the philosophy of the original textbook** showed that the **contentsof chapters 1 and 2** are well aligned with the philosophy due to the presence of real life activities and examples and photos that help students to better understand the concepts. However, in chapter 3 there are a few **activities** and examples that are not related to real life. In chapter 1, for example, the concepts are presented by using concrete examples to illustrate the scientific method, the work of scientists, and the relationships between science, technology and society. Also new inventions like DVD, remote control, computer... are presented to highlight the role of science in society. In chapter 2, a lot of detailed information is provided possibly leading to some confusion for grade 9 students especially that few real life activities are presented in the student's book. In chapter 3, the concepts in the two lessons explained appropriately but not related to real life through examples or activities, consequently the student has to accept theory without really being provided with sufficient evidence. However, extra instructions and information are provided in the teacher's manual that might help the teacher to involve the students in the learning and make the materials more relevant to them. Additionally, the presence of preparation activities at the beginning of the three chapters is very useful because it can help the student to be better prepared for the lesson.

One of the problems, however, is that the learning objectives were not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive skills. Another problem is that the assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. It is worth noting that in chapters 1 and 2, some exercises in the lessons in the student book and the practice book are based on real life examples and enhance the critical thinking of the students.

**Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students:** The analysis showed that the chapters are suitable for the grade level of the students with a few exceptions which indicate that some chapters contain too many concepts on a number of pages of the chapter.

**Suitability of the Arabization of the translated textbooks to serve the math and science concepts:** Satisfactory evidence was found with respect to the 6 criteria in this rubric: (1) illustrations; (2) content; (3) activities; (4) practice exercises; (5) assessment exercises and (6) skills.

**Suitability of the translated textbooks to the cultural context of The Gulf States:** Satisfactory evidence was found with respect to the 5 criteria in this rubric: (2) content, (3) activities, (4) practice exercises and (5) assessment for chapters 1, 2 and 3.



<b>Book Evaluation Form</b>	Subject: Science			
	Grade: 9			
	Textbook Title: Science			
	Chapter Title: Activities and operations in the cell			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b><i>Criterion/Indicator</i></b>				
<b>15. Alignment of the translated texts to the philosophy of the original textbook</b>				
15.1. Content of the Chapter			✓	
15.2. Activities included in the chapter		✓		
15.3. Learning objectives	✓			
15.4. Practice exercises				✓
15.5. Assessment exercises	✓			
15.6. Skills			✓	
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Presenting the scientific material in an interesting way.</li> <li>- Encouraging the students to look and think about new events and to examine it.</li> <li>- Activities and questions that stimulate the student knowledge and he's critical thinking.</li> <li>- Activities related to real life examples and written with an enthusiasm style allowing a better understanding for students.</li> <li>- Practice exercises related to real life examples that allow to build and to develop the scientific knowledge of the students and their mental and practical skills.</li> </ul> <p>1.1: The concepts in the two lessons: The activities in the cell and cells division and multiplication are well explained and each concept is preceded by a daily life example like explaining how our organism get energy through the need of a football player to get food. However the definitions are very condensed with a lot of detailed information.</p> <p>1.2: Only one real life activity per lesson is presented in the student book whereas illustrations and real life examples are more used in this chapter.</p> <p>1.3: The focus of the objectives is on the scientific concepts and they are not written with an enthusiasm style. Therefore they do not respect the philosophy of the original textbook. For example: "Compare the mitosis process in vegetables' cell and in animals' cell".</p> <p>1.4: The presence of a preparation activity at the beginning of the chapter is very useful because it can help the student to think previously about the concepts in the chapter.</p>				

1.5: The assessment exercises and the "revision exercises" in the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. Therefore they do not respect the philosophy of the original textbook.

1.6: Questions related to real life are asked in the end of each lesson by designing models to explain theory. This can enhance the students' skills and critical thinking.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>11. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>11.1.Length of sentences</i>				✓
<i>11.2.Complexity of sentences</i>			✓	
<i>11.3.Diversity of language structures</i>				✓
<i>11.4.Number of concepts per chapter</i>			✓	
<i>11.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>11.6.Clarity of definitions of technical terms</i>				✓
<i>11.7.Using concrete examples to illustrate concepts</i>				✓
<i>11.8.Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3 2.2 and 2.4: <i>The number of concepts per chapter is almost satisfactory because it is related. However under one concept we can find at least 6 definitions with a lot of detailed information that can create confusion for the student.</i>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>21. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>21.1. Illustrations</i>				✓
<i>21.2. Content</i>				✓
<i>21.3. Activities</i>				✓
<i>21.4. Practice Exercises</i>				✓
<i>21.5. Assessment exercises</i>				✓
<i>21.6. Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>22. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
22.1. <i>Illustrations</i>				✓
22.2. <i>Content</i>				✓
22.3. <i>Activities</i>				✓
22.4. <i>Practice Exercises</i>				✓
22.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

In this chapter, the concepts are well presented in the three books in term of level, critical thinking and enthusiasm style especially that the concepts are explained through real life examples included in the text (student book, practice book). The experiments and the practice exercise in the practice book enhance the student's critical thinking by investing the concepts through real example or by building models.

Also in the teacher book, the teacher is oriented to enhance the critical thinking of the student by offering him different way of teaching like: "Ask the students to build 3D models of the mitosis on a board and presented to other students".

Additional indicators and other comments.



<b>Book Evaluation Form</b>	Subject: Science			
	Grade: 9			
	Textbook Title: Science			
	Chapter Title: Electricity			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>16. Alignment of the translated texts to the philosophy of the original textbook</b>				
16.1. Content of the Chapter				
16.2. Activities included in the chapter				
16.3. Learning objectives				
16.4. Practice exercises				
16.5. Assessment exercises				
16.6. Skills				
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Presenting the scientific material in an interesting way.</li> <li>- Encouraging the students to look and think about new events and to examine it.</li> <li>- Activities and questions that stimulate the student knowledge and he's critical thinking.</li> <li>- Activities related to real life examples and written with an enthusiasm style allowing a better understanding for students.</li> <li>- Practice exercises related to real life examples that allow to build and to develop the scientific knowledge of the students and their mental and practical skills.</li> </ul> <p>1.1: The concepts in the two lessons: Electricity and Electric field are well explained and each concept is preceded by a daily life example like using the variation of the water flow with height to explain electrons flow in a circuit.</p> <p>1.2: Only one real life activity per lesson is presented in the student book but some examples are related to real life activities.</p> <p>1.3: The focus of the objectives is on the scientific concepts and they are not written with an enthusiasm style. Therefore they do not respect the philosophy of the original textbook. For example: "Find the relation between electric potential and the electricity power".</p> <p>1.4: The presence of a preparation activity at the beginning of the chapter is very useful because it can help the student to think previously about the concepts in the chapter.</p> <p>1.5: The assessment exercises in the lessons are almost based on real life situations with questions that enhance the critical thinking of the students but the "revision exercises" and</p>				



some exercises in the end of the chapter are closed and limited questions with direct applications are also present.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>12. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>12.1.Length of sentences</i>				✓
<i>12.2.Complexity of sentences</i>				✓
<i>12.3.Diversity of language structures</i>				✓
<i>12.4.Number of concepts per chapter</i>				✓
<i>12.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>12.6.Clarity of definitions of technical terms</i>				✓
<i>12.7.Using concrete examples to illustrate concepts</i>				✓
<i>12.8.Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

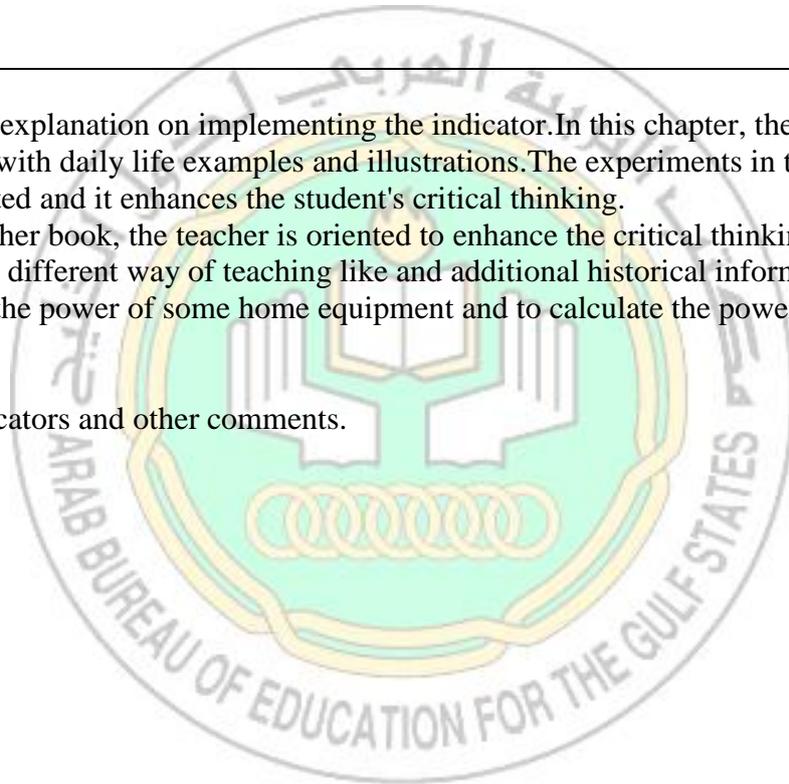
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>23. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>23.1. Illustrations</i>				✓
<i>23.2. Content</i>				✓
<i>23.3. Activities</i>				✓
<i>23.4. Practice Exercises</i>				✓
<i>23.5. Assessment exercises</i>				✓
<i>23.6. Skills</i>				✓
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>24. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
24.1. <i>Illustrations</i>				✓
24.2. <i>Content</i>				✓
24.3. <i>Activities</i>				✓
24.4. <i>Practice Exercises</i>				✓
24.5. <i>Assessment exercises</i>				✓
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator. In this chapter, the concepts are well explained with daily life examples and illustrations. The experiments in the practice book are well presented and it enhances the student's critical thinking.

Also in the teacher book, the teacher is oriented to enhance the critical thinking of the student by offering him different way of teaching like and additional historical information: "Ask the student to find the power of some home equipment and to calculate the power it used during one month".

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 9			
		Textbook Title: Science			
		Chapter Title: Force and Newton's law			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>17. Alignment of the translated texts to the philosophy of the original textbook</b>					
17.1.	Content of the Chapter			✓	
17.2.	Activities included in the chapter			✓	
17.3.	Learning objectives	✓			
17.4.	Practice exercises				✓
17.5.	Assessment exercises			✓	
17.6.	Skills				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Presenting the scientific material in an interesting way.</li> <li>- Encouraging the students to look and think about new events and to examine it.</li> <li>- Activities and questions that stimulate the student knowledge and he's critical thinking.</li> <li>- Activities related to real life examples and written with an enthusiasm style allowing a better understanding for students.</li> <li>- Practice exercises related to real life examples that allow to build and to develop the scientific knowledge of the students and their mental and practical skills.</li> </ul> <p>1.1: The concepts in the two lessons: First and second Newton law and Third Newton law are well explained with daily life examples and illustrations but a lot of small definitions within the same concept may create confusion for the students like presenting different kind of rubbing force: "الاحتكاك السكوني، الاحتكاك الانزلاقي، الاحتكاك التدرجي"</p> <p>1.2: Only one real life activity per lesson is presented in the student book but some examples are based on real life activities so the student can benefit to do his own experiment like presenting the movement of a basketball player to explain curve movement.</p> <p>1.3: The focus of the objectives is on the scientific concepts and they are not written with an enthusiasm style. Therefore they do not respect the philosophy of the original textbook. For example: "Distinguish between the stable force and the resultant force".</p> <p>1.4: The presence of a preparation activity at the beginning of the chapter is very useful because it can help the student to think previously about the concepts in the chapter.</p>					

1.5: The assessment exercises and the "revision exercises" in the end of the chapter are almost based on real life situations with questions that enhance the critical thinking of the students but closed and limited questions with direct applications are also present like : "What is the difference between gravity and non gravity"

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>13. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
13.1.Length of sentences			✓	
13.2.Complexity of sentences			✓	
13.3.Diversity of language structures				✓
13.4.Number of concepts per chapter			✓	
13.5.Reuse of technical terms in subsequent lessons and chapters				✓
13.6.Clarity of definitions of technical terms			✓	
13.7.Using concrete examples to illustrate concepts				✓
13.8.Redundancy of terms and sentences with no educational benefit.			✓	
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 32.1 and 2.2: Few length sentences are present but each new sentence begins with preposition words (فانذا، واذاء، وهذا، و) in order to related to the previous one which make the text complex.</p> <p>2.4 and 2.6: The first lesson in this chapter present a lot of concepts and definition with a lot of description. Some definitions are not clear enough unless an example is presented.</p> <p>2.8: Concept redundancy in the same paragraph like: 'The air rubbing against the earth's surface causes friction', this idea was explained by different sentences more than twice in the same paragraph.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>25. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
25.1. Illustrations			✓	
25.2. Content			✓	
25.3. Activities				✓
25.4. Practice Exercises				✓
25.5. Assessment exercises				✓



25.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 3 given a score of less than 33.1: Some illustrations do not reflect the concept like drawing the resultant force but not the rubbing force to explain the acceleration decreases.</p> <p>3.2: The content seems in some paragraph to be difficult due to (1) the redundancy of concepts by different sentences in the same paragraph and (2) the huge number of information in the paragraph.</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>26. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
26.1. <i>Illustrations</i>			✓	
26.2. <i>Content</i>				✓
26.3. <i>Activities</i>				✓
26.4. <i>Practice Exercises</i>				✓
26.5. <i>Assessment exercises</i>				✓
<p>Illustrate by at last one example any indicator of criterion 4 given a score of less than 3</p> <p>4.1: one photo do not reflect the Gulf States culture is present: an ice skating machine.</p>				

Comments and explanation on implementing the indicator. In this chapter, the concepts are well explained with daily life examples and illustrations but a lot of small definitions within the same concept may create confusion for the students. The experiments in the practice book are well presented and it enhances the student's critical thinking by giving them real life activities and exercises.

Also in the teacher book, the teacher is oriented to enhance the critical thinking of the student by offering him different way of teaching like and additional historical information: "Galileo was the first one to know about the gravity effect".

Additional indicators and other comments.



## REPORT ON SCIENCE TEXTBOOKS IN GRADE 9- SECOND TERM

The following report is an evaluation of science books in grade 9 (Second semester). Each of the student textbook, practice book and teacher guidebook is divided into six chapters. Three chapters: (1) "Activities and operations in the cell ", (2) "Force and Newton's law" and (3) "Electricity" were analyzed. The following results are based on the three evaluation forms.

The analysis concerning the **alignment of the translated texts to the philosophy of the original textbook** showed that the **content showed** almost satisfactory to satisfactory alignment with the philosophy of the original textbook. This is due to the fact that the three chapters include daily life examples (For example explaining how organisms get energy by using the need of a football player to get food as an example (chapter 1) or using the variation of the water flow with height to explain flow of electrons in a circuit (chapter 3).

The activities included in chapters 2 and 3 show almost satisfactory alignment with the philosophy because focus on life examples. However, in chapter 1, few activities are presented and it is more based on description and illustrations than real life activities and examples.

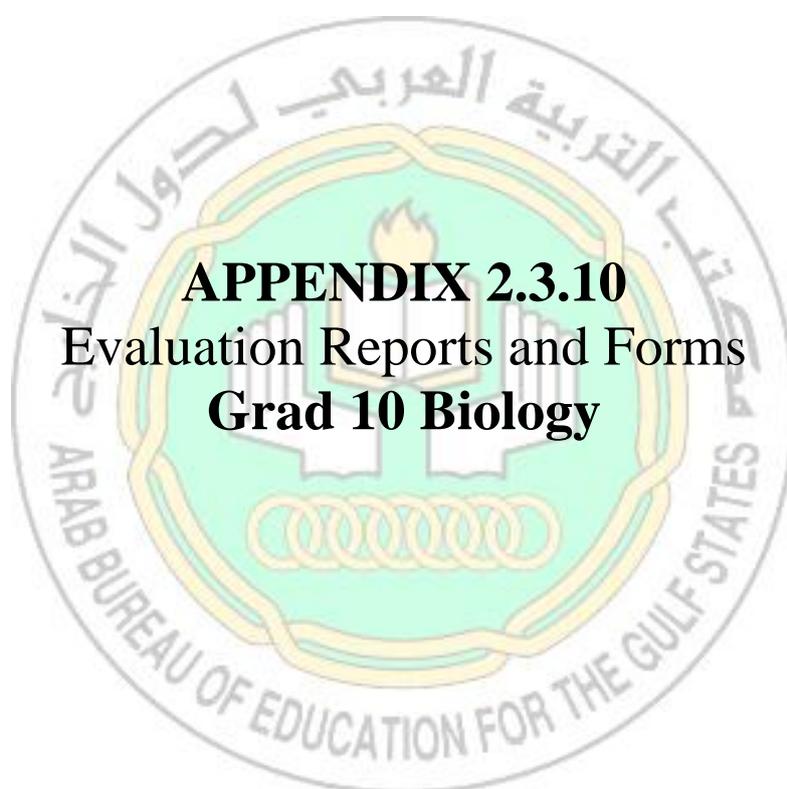
One of the problems, however, is that the learning objectives were not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive levels. Another problem is that the assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. It is worth noting that in chapters 1 and 2, some exercises in the lessons in the student book and the practice book are based on real life examples and enhance the critical thinking of the students.

**Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students:** The analysis showed that chapter 3 is suitable for the educational level of Gulf students except for chapters 1 and 2 in which there is evidence that some sentences are complex and that in some sections of the chapter there are too many concepts per page. The other criterion showed satisfactory evidence for suitability to The Gulf States students.

**Suitability of the Arabization of the translated textbooks to serve the math and science concepts:** Satisfactory evidence was found with respect to the 6 criteria in this rubric: (1) illustrations; (2) content; (3) activities; (4) practice exercises; (5) assessment exercises and (6) skills in chapters 1 and 3. In chapter 2, the illustrations and content showed almost satisfactory evidence because of the presence of some illustrations that do not reflect the concept like drawing the resultant force but not the rubbing force to explain the decrease in acceleration.

Also the content seems in some paragraph to be difficult due to the huge amount of information in some paragraphs. The other criteria showed satisfactory evidence of suitability.

**Suitability of the translated textbooks to the cultural context of The Gulf States:** Satisfactory evidence was found with respect to the 5 criteria in this rubric: (2) content, (3) activities, (4) practice exercises and (5) assessment for chapters 1, 2 and 3. As for the illustration, it shows satisfactory evidence for chapters 1 and 3 but in chapter 2 one of the photos comes from a cultural context other than The Gulf States and thus may not be meaningful to all students.





**Table of Contents for Grades 10, 11 and 12, Biology**

Unit	English Version	Arabic Version
	<i>Student Guide</i>	دليل الطالب
Chapter 1: The Study of Life	<i>Section 1: Introduction to Biology</i> Minilab	<i>Section 1: الأحياء علم إلى مدخل</i> Minilab
	<i>Section 2: The Nature of Science</i> Data Analysis Lab	<i>Section 2: وطرائقه العلم طبيعة</i> Data Analysis Lab
	<i>Section 3: Methods of Science</i> Minilab	
	Biodiscoveries	Biodiscoveries
	Biolab	
	Chapter 1 assessment	Chapter 1 assessment
	Standardized Test Practice	Standardized Test Practice
<b>Unit 1: Ecology</b>	<i>Section 1: Organisms and their Relationships</i> Data Analysis Lab	
	<i>Section 2: Flow of Energy in an Ecosystem</i> Minilab	
	<i>Section 3: Cycling of Matter</i> Minilab	
	Biology and Society	
	Biolab	
	Chapter 2 assessment	
	Standardized Test Practice	
	<i>Section 1: Community Ecology</i> Data Analysis Lab	
	<i>Section 2: Terrestrial Biomes</i> Minilab	
	<i>Section 3: Aquatic Ecosystems</i> Minilab	
	In the Field	
	Biolab	
	Chapter 3 assessment	
	Standardized Test Practice	
	<i>Section 1: Population Dynamics</i> Data Analysis Lab	
	<i>Section 2: Human population</i> Minilab	
	Cutting Edge Biology	
	Biolab	
	Chapter 4 assessment	
	Standardized Test Practice	
	<i>Section 1: Biodiversity</i> Minilab	
	<i>Section 2: Threats to Biodiversity</i> Minilab	
	<i>Section 3: Conserving Biodiversity</i> Data Analysis Lab	
	In the Field	



		Biolab		
		Chapter 5 assessment		
		Standardized Test Practice		

Unit	English Version	Arabic Version
Unit 2: The Cell	Chapter 6: Chemistry in Biology	
	Section 1: Atoms, Elements & Compounds Minilab	
	Section 2: Chemical Reactions Minilab	
	Section 3: Water and Solutions Data Analysis Lab	
	Section 4: The Building Blocks of Life Data Analysis Lab	
	In the Field	
	Biolab	
	Chapter 6 assessment Standardized Test Practice	
Chapter 7: Cellular Structure and Function	Section 1: Cell Discovery and Theory Minilab	
	Section 2: The Plasma Membrane Data Analysis Lab	Chapter 22: تركيب الخلية ووظائفها
	Section 3: Structure and Organelles Data Analysis Lab	Section 2: الخلية كيميائية Data Analysis Lab
	Section 4: Cellular Transport Minilab	Section 1: العضيات الخلوية التراكيب Data Analysis Lab
	Cutting Edge Biology	Cutting Edge Biology
	Biolab	Biolab
	Chapter 7 assessment	Chapter 22 assessment
	Standardized Test Practice	Standardized Test Practice
Chapter 8: Cellular Energy	Section 1: How Organisms Obtain Energy Minilab	Chapter 23: الطاقة الخلوية
	Section 2: Photosynthesis Minilab	Section 1: الطاقة على الحياة المخلوقات تحصل كيف Minilab
	Section 3: Cellular Respiration Data Analysis Lab	Section 2: الضوئي البناء Minilab
	Cutting Edge Biology	Section 3: الخلوي التنفس Data Analysis Lab
	Biolab	Cutting Edge Biology
	Chapter 8 assessment	Biolab
	Standardized Test Practice	Chapter 23 assessment Standardized Test Practice
Chapter 9: Cellular Reproduction	Section 1: Cellular Growth Minilab	Chapter 24: التكاثر الخلوي
	Section 2: Mitosis & Cytokinesis Data Analysis Lab	Section 1: الخلوي النمو Minilab
	Section 3: Cell Cycle Regulation Minilab	Section 2: السيتوبلازم وانقسام المتساوي الانقسام Data Analysis Lab
	Biology and Society	Section 3: الخلية دور تنظيم Minilab
	Biolab	Biology and Society
	Chapter 9 assessment	Biolab Chapter 24 assessment



	Standardized Test Practice		Standardized Test Practice
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Unit	English Version	Arabic Version
<b>Unit 3: Genetics</b>	Chapter 10: Sexual Reproduction and Genetics	Chapter 25: التكاثر الجنسي والوراثة
	<i>Section 1: Meiosis</i> Data Analysis Lab	<i>Section 1: المنصف الانقسام</i> Data Analysis Lab
	<i>Section 2: Mendelian Genetics</i> Minilab	<i>Section 2: المندلية الوراثة</i> Minilab
	<i>Section 3: Gene Linkage and Polyploidy</i> Minilab	<i>Section 3: الكروموسومية المجموعه وتعدد الجينات ارتباط</i> Minilab
	In the Field	In the Field
	Biolab	Biolab
	Chapter 10 assessment Standardized Test Practice	Chapter 25 assessment Standardized Test Practice
Chapter 11: Complex Inheritance and Human Heredity	Chapter 26: الوراثة المعقدة و الوراثة البشرية	Chapter 26: الوراثة المعقدة و الوراثة البشرية
	<i>Section 1: Basic Patterns of Human Inheritance</i> Minilab	<i>Section 1: الإنسان لوراثة الأساسية الأنماط</i> Minilab
	<i>Section 2: Complex Patterns of Inheritance</i> Data Analysis Lab	<i>Section 2: المعقدة الوراثة الأنماط</i> Data Analysis Lab
	<i>Section 3: Chromosomes &amp; Human Heredity</i> Minilab	<i>Section 3: الإنسان ووراثة الكروموسومات</i> Minilab
	In the Field	In the Field
	Biolab	Biolab
	Chapter 11 assessment Standardized Test Practice	Chapter 26 assessment Standardized Test Practice
Chapter 12: Molecular Genetics	Chapter 27: الوراثة الجزيئية	Chapter 27: الوراثة الجزيئية
	<i>Section 1: DNA: The Genetic Material</i> Minilab	<i>Section 1: الوراثة المادة</i> Minilab
	<i>Section 2: Replication of DNA</i> Minilab	<i>Section 2: تضاعف DNA</i> Minilab
	<i>Section 3: DNA, RNA and Protein</i> Data Analysis Lab	<i>Section 3: DNA, RNA والبروتين</i> Data Analysis Lab
	<i>Section 4: Gene Regulation and Mutation</i> Data Analysis Lab	<i>Section 4: والطفرة الجيني التنظيم</i> Data Analysis Lab
	Biodiscoveries	Biodiscoveries
	Biolab	Biolab
	Chapter 12 assessment Standardized Test Practice	Chapter 27 assessment Standardized Test Practice
Chapter 13: Genetics and Biotechnology	<i>Section 1: Applied Genetics</i> Minilab	
	<i>Section 2: DNA Technology</i> Minilab	
	<i>Section 3: The Human Genome</i> Data Analysis Lab	
	In the Field	
	Biolab	
	Chapter 13 assessment	
	Standardized Test Practice	



Unit	English Version		Arabic Version	
Unit 4: History of Biological Diversity	Chapter 14: The History of Life	Section 1: Fossil Evidence of Change Minilab		
		Section 2: The Origin of Life Data Analysis Lab		
		In the Field		
		Biolab		
		Chapter 14 assessment		
		Standardized Test Practice		
	Chapter 15: Evolution	Section 1: Darwin's Theory of Evolution by Natural Selection Data Analysis Lab		
		Section 2: Evidence of Evolution Minilab		
		Section 3: Shaping Evolutionary Theory Data Analysis Lab		
		Cutting Edge Biology		
		Biolab		
		Chapter 15 assessment		
		Standardized Test Practice		
	Chapter 16: Primate Evolution	Section 1: Primates Data Analysis Lab		
		Section 2: Hominoids to Hominins Minilab		
		Section 3: Human Ancestry Minilab		
		Biodiscoveries		
		Biolab		
		Chapter 16 assessment Standardized Test Practice		
	Chapter 17: Organizing Life's Diversity	Section 1: The History of Classification Minilab	Chapter 2: تنظيم تنوع الحياة	Section 1: التصنيف تاريخ
		Section 2: Modern Classification Data Analysis Lab		Section 2: الحديث التصنيف Minilab
		Section 3: Domains and Kingdoms Minilab		
		Cutting Edge Biology		Cutting Edge Biology
		Biolab		
Chapter 17 assessment		Chapter 2 assessment		
Standardized Test Practice		Standardized Test Practice		

Unit	English Version		Arabic Version	
Unit 5: Bacteria,	Chapter 18:	Section 1: Bacteria Minilab	Chapter 3: البكتيريا	Section 1: البكتيريا Minilab
		Section 2: Viruses and Prions Data Analysis Lab		Section 2: والبريونات الفيروسات Data Analysis Lab



<b>Protists and Fungi</b>	Bacteria and Viruses	Cutting Edge Biology	والفيروسات	Cutting Edge Biology
		<b>Biolab</b>		
		Chapter 18 assessment		Chapter 3 assessment
		Standardized Test Practice		Standardized Test Practice
	Chapter 19: Protists	<i>Section 1: Introduction to Protists</i>	Chapter 4: الطلائعيات	<i>Section 1: الطلائعيات إلى مدخل</i>
		Data Analysis Lab		Data Analysis Lab
		<i>Section 2: Protozoans- Animal-Like Protists</i>		<i>Section 2: الطلائعيات أنواع</i>
		Data Analysis Lab		Data Analysis Lab
		<i>Section 3: Algae- Plant- Like Protists</i>		
		<b>Minilab</b>		
		<i>Section 4: Funguslike Protists</i>		
		<b>Minilab</b>		
	In the Field	In the Field		
	<b>Biolab</b>			
	Chapter 19 assessment	Chapter 19 assessment		
	Standardized Test Practice	Standardized Test Practice		
	Chapter 20: Fungi	<i>Section 1: Introduction to Fungi</i>	Chapter 5: الفطريات	<i>Section 1: الفطريات إلى مدخل</i>
		<b>Minilab</b>		<b>Minilab</b>
		<i>Section 2: Diversity of Fungi</i>		<i>Section 2: وبيئتها الفطريات تنوع</i>
		<b>Minilab</b>		<b>Minilab</b>
		<i>Section 3: Ecology of Fungi</i>		
		<b>Data Analysis Lab</b>		
		Biology and Society		Biology and Society
	<b>Biolab</b>			
Chapter 20 assessment	Chapter 5 assessment			
Standardized Test Practice	Standardized Test Practice			

Unit	English Version	Arabic Version
<b>Unit 6: Plants</b>	Chapter 21: Introduction to Plants	<i>Section 1: Plant Evolution and Adaptations</i>
		<b>Minilab</b>
		<i>Section 2: Nonvascular Plants</i>
		Data Analysis Lab
		<i>Section 3: Seedless Vascular Plants</i>
		<b>Data Analysis Lab</b>
		<i>Section 4: Vascular Seed Plants</i>
		<b>Minilab</b>
	In the Field	
	<b>Biolab</b>	
	Chapter 21 assessment	
	Standardized Test Practice	
	Chapter 22: Plant Structure and Function	<i>Section 1: Plant Cells and Tissues</i>
		<b>Minilab</b>
<i>Section 2: Roots, Stems and Leaves</i>		
<b>Data Analysis Lab</b>		
<i>Section 3: Plant Hormones and Responses</i>		
<b>Minilab</b>		
Biodiscoveries		
<b>Biolab</b>		
Chapter 22 assessment		



		Standardized Test Practice		Standardized Test Practice
Chapter 23: Reproduction in Plants		<b>Section 1: Introduction to Plant Reproduction</b> Minilab	Chapter 21: التكاثر في النباتات	
		Section 2: Flowers Minilab		Section 1: الأزهار Minilab
		Section 3: Flowering Plants Data Analysis Lab		Section 2: الزهرية النباتات Data Analysis Lab
		Biology and Society		Biology and Society
		Biolab		Biolab
		Chapter 23 assessment		Chapter 21 assessment
		Standardized Test Practice		Standardized Test Practice

Unit	English Version	Arabic Version			
<b>Unit 7: Invertebrates</b>	Chapter 24: Introduction to Animals	Section 1: Animal Characteristics Minilab	Section 1: الحيوانات خصائص Minilab		
		Section 2: Animal Body Plans Minilab	Section 2: الحيوان جسم بناء مستويات Minilab		
		Section 3: Sponges and Cnidarians Data Analysis Lab	Section 3: واللاسعات الإسفنجيات والرخويات		
		Biodiscoveries	Biodiscoveries		
		Biolab			
		Chapter 24 assessment	Chapter 6 assessment		
		Standardized Test Practice	Standardized Test Practice		
	Chapter 25: Worms and Mollusks	Section 1: Flatworms Minilab	Chapter 6: إلى مدخل الحيوانات	Chapter 6: إلى مدخل الحيوانات	
		Section 2: Roundworms and Rotifers Data Analysis Lab	Section 1: المفلطحة الديدان Minilab	Section 1: المفلطحة الديدان Minilab	
		Section 3: Mollusks Data Analysis Lab	Section 2: والدورات الأسطوانية الديدان Data Analysis Lab	Section 2: والدورات الأسطوانية الديدان Data Analysis Lab	
		Section 4: Segmented Worms Minilab	Section 3: الرخويات Data Analysis Lab	Section 3: الرخويات Data Analysis Lab	
		Biodiscoveries	Section 4: الحلقيّة الديدان Minilab	Section 4: الحلقيّة الديدان Minilab	
		Biolab	Biodiscoveries	Biodiscoveries	
		Chapter 25 assessment	Chapter 7 assessment	Chapter 7 assessment	
	Standardized Test Practice	Standardized Test Practice	Standardized Test Practice		
	Chapter 26: Arthropods	Section 1: Arthropod Characteristics Minilab	Chapter 7: الديدان والرخويات	Chapter 7: الديدان والرخويات	
		Section 2: Arthropod Diversity Minilab			Section 1: المفصليات خصائص Minilab
		Section 3: Insects and their Relatives Data Analysis Lab			Section 2: المفصليات تنوع Minilab
		In the Field			Section 3: وأشباها الحشرات Data Analysis Lab
		Biolab			In the Field
		Chapter 26 assessment			Chapter 8 assessment
		Standardized Test Practice			Standardized Test Practice
	Chapter 27: Echinoderms and	Section 1: Echinoderm Characteristics Minilab	Chapter 8: المفصليات	Chapter 8: المفصليات	
		Section 2: Invertebrate Chordates Data Analysis Lab			Section 1: الجلد شوكيات خصائص Minilab
Cutting Edge Biology		Section 2: الحلبيّة اللافقريات Data Analysis Lab			
		Chapter 9: شوكيات الجلد	Chapter 9: شوكيات الجلد		



	Invertebrate Chordates	<b>Biolab</b>	واللافقریات	
		Chapter 27 assessment	الحبلية	Chapter 9 assessment
		Standardized Test Practice		Standardized Test Practice

Unit	English Version	Arabic Version		
<b>Unit 8: Vertebrates</b>	Chapter 28: Fishes and Amphibians	<i>Section 1: Fishes</i> Minilab	Chapter 10: الأسماك والبرمائيات	<i>Section 1: الأسماك</i> Minilab
		<i>Section 2: Diversity of Today's Fishes</i> <b>Data Analysis Lab</b>		<i>Section 2: البرمائيات</i> Data Analysis Lab
		<i>Section 3: Amphibians</i> Data Analysis Lab		Biodiscoveries
		Biodiscoveries		Biolab
		Chapter 28 assessment		Chapter 10 assessment
		Standardized Test Practice		Standardized Test Practice
		Chapter 29: Reptiles and Birds		<i>Section 1: Reptiles</i> Data Analysis Lab
	<i>Section 2: Birds</i> Minilab		<i>Section 2: الطيور</i> Minilab	
	Biology and Society		Biology and Society	
	Biolab		Biolab	
	Chapter 29 assessment		Chapter 11 assessment	
	Standardized Test Practice	Standardized Test Practice		
	Chapter 30: Mammals	<i>Section 1: Mammalian Characteristics</i> Minilab	Chapter 12: الثدييات	<i>Section 1: الثدييات خصائص</i> Minilab
		<i>Section 2: Diversity of Mammals</i> Data Analysis Lab		<i>Section 2: الثدييات تنوع</i> Data Analysis Lab
		Biology and Society		Biology and Society
		Biolab		Biolab
		Chapter 30 assessment		Chapter 12 assessment
	Standardized Test Practice	Standardized Test Practice		
Chapter 31: Animal Behavior	<i>Section 1: Basic Behaviors</i> Minilab			
	<i>Section 2: Ecological Behaviors</i> Data Analysis Lab			
	Biodiscoveries			
	Biolab			
	Chapter 31 assessment			
	Standardized Test Practice			

Unit	English Version	Arabic Version	
<b>Unit 9: The Human Body</b>	<i>Section 1: The Integumentary System</i> Minilab	Chapter 13: الجهازان الهيكلية والعضلية	<i>Section 1: الهيكلية الجهاز</i> Minilab
	<i>Section 2: The Skeletal System</i> Minilab		<i>Section 2: العضلية الجهاز</i> Data Analysis Lab
	<i>Section 3: The Muscular System</i> Data Analysis Lab		Cutting Edge Biology
	Cutting Edge Biology		Biolab
	Biolab		



		Chapter 32 assessment Standardized Test Practice	----->	Chapter 13 assessment Standardized Test Practice	
Chapter 33: Nervous System		<i>Section 1: Structure of the Nervous System</i> Minilab	Chapter 14: الجهاز العصبي	<i>Section 1: الجهاز العصبي تركيب</i> Minilab	
		<i>Section 2: Organization of the Nervous System</i> Data Analysis Lab		<i>Section 2: الجهاز العصبي تنظيم</i> Data Analysis Lab	
		<i>Section 3: The Senses</i> Minilab			
		<i>Section 4: Effects of Drugs</i> Data Analysis Lab		<i>Section 3: تأثير العقاقير</i> Data Analysis Lab	
		Cutting Edge Biology		Cutting Edge Biology	
		Biolab		Biolab	
		Chapter 33 assessment Standardized Test Practice		----->	Chapter 14 assessment Standardized Test Practice
	Chapter 34: Circulatory, Respiratory and Excretory Systems			<i>Section 1: Circulatory System</i> Minilab	Chapter 15: أجهزة الدوران والتنفس والإخراج
		<i>Section 2: Respiratory System</i> Minilab	<i>Section 2: التنفس جهاز</i> Minilab		
		<i>Section 3: Excretory System</i> Data Analysis Lab	<i>Section 3: الإخراج جهاز</i> Data Analysis Lab		
		Biology and Society	Biology and Society		
		Biolab	Biolab		
		Chapter 34 assessment Standardized Test Practice	----->	Chapter 15 assessment Standardized Test Practice	
Chapter 35: Digestive and Endocrine Systems			<i>Section 1: The Digestive System</i> Minilab	Chapter 16: الجهازان الهضم والغدد الصم	
		<i>Section 2: Nutrition</i> Data Analysis Lab	<i>Section 2: التغذية</i> Data Analysis Lab		
		<i>Section 3: The Endocrine System</i> Minilab	<i>Section 3: الصم الغدد جهاز</i> Minilab		
		Biodiscoveries	Biodiscoveries		
		Biolab	Biolab		
		Chapter 35 assessment Standardized Test Practice	----->		Chapter 16 assessment Standardized Test Practice
	Chapter 36: Human Reproduction and Development		<i>Section 1: Reproductive Systems</i> Minilab		Chapter 17: التكاثر والنمو في الإنسان
		<i>Section 2: Human Development Before Birth</i> Minilab	<i>Section 2: نمو الجنين قبل الولادة مراحل</i> Minilab		
		<i>Section 3: Birth, Growth and Aging</i> Data Analysis Lab			
		Cutting Edge Biology	Cutting Edge Biology		
		Biolab	Biolab		
		Chapter 36 assessment Standardized Test Practice	----->	Chapter 17 assessment Standardized Test Practice	

Unit	English Version	Arabic Version
Unit 9:	Chapter 37: <i>Section 1: Infectious Diseases</i> Minilab	Chapter 18:





### Report for Table of Contents (Grades 10, 11 and 12)

Overall, the Arabic version of the table of contents for all three grade levels is very much aligned with that of the English version. However, there are some minor differences. In chapters 1-9 (corresponding to Grade 10), the activity found at the end of every chapter in the English version entitled “Biolab” is **not found** at all in the Arabic version, but it is found in the chapters for grades 11 and 12.

There are a few chapters that are omitted in the Arabic version. For instance, Unit 1 “Ecology” which consists of chapters 2, 3, 4 and 5 is completely missing in the Arabic version. Also, Unit 4 “History of Biological Diversity” is almost completely missing. More specifically chapters 14, 15 and 16 which deal with issues of evolution do not exist, only chapter 17 entitled “Organizing Life’s Diversity” is found in the Arabic version. Other missing chapters include chapter 13 “Genetics and Biotechnology” and chapter 31 “Animal Behavior”. It should be noted that the Grade 12 Semester 2 was not available, so these missing chapters might be included in this particular book.

In addition, a few sections were also omitted in the Arabic version some of which include:

- Section 2 “Infectious Diseases” and section 3 “Noninfectious Diseases” from chapter 37 “The Immune System”.
- Section 1 “Plant Evolution and Adaptations” of chapter 21
- Section 2 “Roots, Stems and Leaves” of chapter 22
- Section 1 “Introduction to Plants” of chapter 23
- Section 3 “Birth, growing and aging” of chapter 36

Finally, there are a couple of sections in the Arabic version which consist of an integration of *two or more* sections from the English version. Some examples of these include:

- Chapter 22 “Cell Structure and Function” where the section entitled “Cellular Structures and Organelles” is an integration of section 2 “The Plasma Membrane” and section 3 “Structures and Organelles” from the English version.
- Chapter 1 “The Study of Life” where the section entitled “Nature of Science and its Methods” is an integration of section 2 “Nature of Science” and section 3 “Methods of Science” from the English version.
- Chapter 4 “Protists” the section entitled “Types of Protists” is an integration of section 2 “Animal-like protists”, section 3 “Plant-like protists” and section 4 “Fungus-like protists” of the English version.

Also, since each section contains either a “minilab” or “data analysis lab” activity, when two or more lessons are integrated into one, only **one** of the activities is chosen to be included in the Arabic version.



## Book Evaluation Form

Subject: Biology

Grade: 10

Semester: 1

Textbook Title: الأحياء: ثانوي الصف الأول  
الفصل الدراسي الأول

Chapter Title: الأول الفصل  
دراسة الحياة

Criterion/Indicator	Completely different	Large difference	Little difference	Difference due only to culture	No difference
<b>18. Agreement of the translated Arabic book with that of the English book</b>					
18.1. Definitions and explanations in the chapter		X		X	
18.2. Activities included in the chapter			X		
18.3. Learning objectives			X		
18.4. Practice exercises (N/A)					
18.5. Assessment exercises			X		
18.6. Figures, pictures and illustrations			X	X	

### Note:

Anything highlighted in the photocopied chapters (whether English or Arabic) represents *differences* between the English and Arabic versions. The following is a key for the color coding in the chapters:

- *Pink* highlights: difference in learning objectives
- *Blue* highlights: difference in content or explanation
- *Yellow* highlights: difference in activities
- *Orange* highlights: difference in illustrations

### 1.1 Definitions and explanations in the chapter

In general, there were a lot of differences in the content between the English and Arabic versions especially in the lessons that correspond to lesson 1 “Introduction to Biology” and lesson 2 “The Nature of Science”. Some of these differences were due to culture. For instance, there were several references to the works of foreign scientists in the English version which are not found in the Arabic version such as Jane Goodall (page 4), Mary-Claire King (page 5), Lee Anne Martinez (page 6) and Joanne Chory (page 6). In the explanation of the Arabic version, some of these scientists were replaced with the works of Arab scientists such as Ibn Sina (page 11) and Ibn Bitar (page 11).

In addition to cultural differences, there were a few sections and details found in the English version that were not mentioned at all in the Arabic version. Below are some examples:



- On page 10 of the English version there is a section entitled “connection to earth science” and on page 12 there is a section entitled “connection to history” which both do not exist in the Arabic version.
- Throughout the first lesson, there are frequent references to “pseudoscience” which is not mentioned at all in the Arabic version.
- A section on lab safety on page 21 of the English version is completely omitted from the Arabic version.

There were some instances where the meaning in the Arabic version did not adequately portray what was mentioned in the English version:

- The word “scientific inquiry” is used in the Arabic version as “البحث العلمي” which translates to “scientific research”.
- In the English version on page 12 it is stated that “**Most** scientific fields are guided by research that results in a constant **reevaluation of what is known**. This reevaluation often leads to **new** knowledge that scientists then evaluate”. The Arabic version (page 18) states that “scientific fields are guided by research that leads to new knowledge that other scientists evaluate”.
- The phrase “tests claims” (page 14 of English version) is translated to “الإستنتاجات يختبر” which literally translates into “tests results/conclusions”. Even the explanation found under this heading is different in both versions.

Finally, there were several differences in terms of the scientific words used. In the English version “organism” is defined as “anything that has or **once had** [the] characteristics [of living things]” (page 6) while the Arabic version defines it as “anything that has the characteristics of living things” (page 12). Also, scientific inquiry is defined as “...a process rooted in **unbiased** observations...” (page 11) while in the Arabic version the term “unbiased” is not used in the definition. There were two scientific terms mentioned in the English version but were nonexistent in the Arabic one which were “development” and “serendipity”. In addition, two of the terms found in the Arabic version were not defined such as “reproduction” (page 14) and “theory” (page 17).

### 1.2. Activities included in the chapter

Most of the activities found in the English version were found as exactly the same activities in the Arabic version. There were only **two** activities that were found in the English version but not in the Arabic one namely the minilab activity on page 19 that has to do with manipulating variables and the Biolab activity on page 23 which has to do with designing an experiment

### 1.3. Learning Objectives

The learning objectives in the Arabic version are exactly identical to that of the English version except for one objective where there was a very minor difference in the wording. More specifically, the English version stated “Differentiate among **control**, independent variable and dependent variable” (page 16) while the Arabic version stated “Differentiate between independent variable and dependent variable” (page 17).

### 1.4. Practice exercises (N/A)

There are no practice exercises in this book.

### 1.5. Assessment exercises



The assessment exercises found at the end of each lesson and at the end of the chapter are exactly identical in the English and Arabic versions. Only two small exercises were found in the end of the chapter exercises in the English version but were omitted in the Arabic version. However, these represent very minor omissions. They are the following:

- Page 25 “The science of life involves learning about the natural world.”
- Page 25, “Differentiate between pseudoscience and science”.

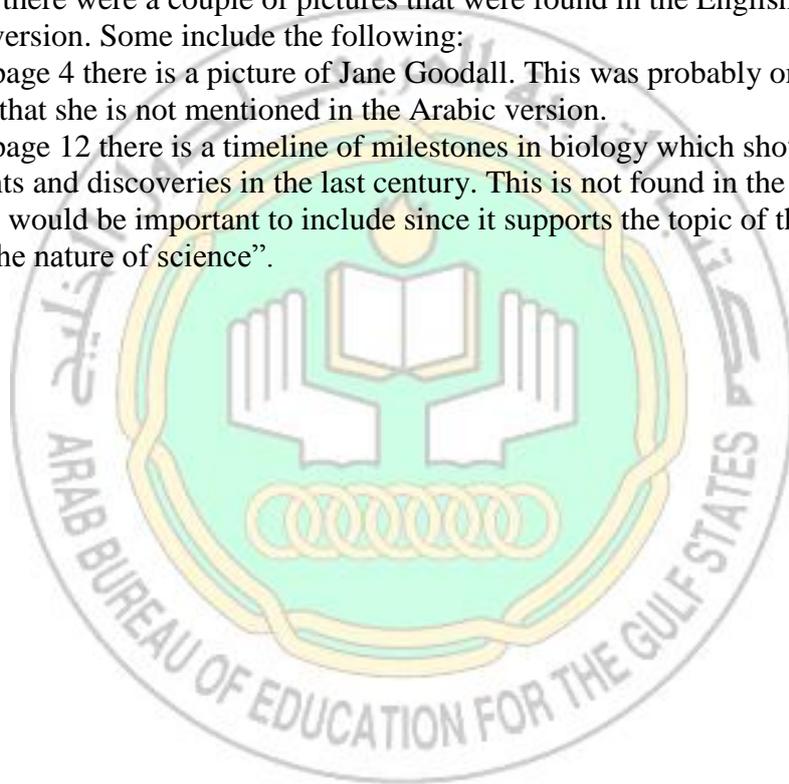
It should be noted that the second exercise was probably omitted due to the fact that the topic of pseudoscience is not dealt with in the Arabic version.

#### 1.6. Figures, pictures and illustrations

Differences between the illustrations in the English version and the Arabic version are mainly due to cultural relevance. For instance, the picture of an American scientist on page 14 of the English version is replaced with a picture of a *The Gulf States* scientist on page 11 of the Arabic version.

In addition, there were a couple of pictures that were found in the English version but not the Arabic version. Some include the following:

- On page 4 there is a picture of Jane Goodall. This was probably omitted due to the fact that she is not mentioned in the Arabic version.
- On page 12 there is a timeline of milestones in biology which shows the major events and discoveries in the last century. This is not found in the Arabic version. This would be important to include since it supports the topic of the lesson which is “the nature of science”.





<b>Book Evaluation Form</b>		Subject: Biology				
		Grade: 10	Semester: 2			
		Textbook Title: الأحياء: ثانوي الصف الأول الفصل الدراسي الثاني				
		Chapter Title: التاسع الفصل شوكيات الجلد واللافقر يات الحبلية				
		Completely different	Large difference	Little difference	Difference due only to culture	No difference
<b>Criterion/Indicator</b>						
<b>19. Agreement of the translated Arabic book with that of the English book</b>						
19.1.	<i>Definitions and explanations in the chapter</i>			X	X	
19.2.	<i>Activities included in the chapter</i>			X		
19.3.	<i>Learning objectives</i>			X		
19.4.	<i>Practice exercises (N/A)</i>					
19.5.	<i>Assessment exercises</i>			X		
19.6.	<i>Figures, pictures and illustrations</i>					X

**Note:**

Anything highlighted in the photocopied chapters (whether English or Arabic) represents *differences* between the English and Arabic versions. The following is a key for the color coding in the chapters:

- *Pink* highlights: difference in learning objectives
- *Blue* highlights: difference in content or explanation
- *Yellow* highlights: difference in activities
- *Orange* highlights: difference in illustrations

*1.1 Definitions and explanations in the chapter*

In general, all the definitions and explanations found in the Arabic version were aligned with those found in the English version. There was one major difference in the content which is that any reference to the concept of **evolution** made throughout the chapter of the English version was completely omitted in the Arabic version. In addition, there is a section entitled “Evolution of Echinoderms and Invertebrate Chordates” (pages 806-807) does not exist in the Arabic version. This difference is probably due to cultural reasons.

Another minor difference was that a couple of analogies made in the English version were not mentioned in the Arabic one. One example includes the analogy given on page 795 where the analogy of squeezing a balloon filled with water is used to explain the mechanism of action of an ampulla.



### 1.2. Activities included in the chapter

The activities found in both the English and Arabic versions are exactly identical. However, there is one activity in the English version that is not found in the Arabic one which is the Biolab activity on page 809.

### 1.3. Learning Objectives

The learning objectives in the Arabic version are exactly identical to that of the English version except for one objective where there is a difference in the action verb used. More specifically, the English version stated “**Interpret** the features of invertebrate chordates that place them in the phylum Chordata” (page 802) while the Arabic version used the verb “**Explain**” (page 108).

### 1.4. Practice exercises (N/A)

There are no practice exercises in this book.

### 1.5. Assessment exercises

The assessment exercises found at the end of each lesson and at the end of the chapter are exactly identical in the English and Arabic versions. Only two small exercises were in the English version but were omitted in the Arabic version due to the fact that the topic of evolution was not dealt with in the Arabic textbook. They are the following:

- Page 807, #6 “Interpret: Use Figure 27.21 to determine which subphylum of chordates evolved next after the cephalochordates.”
- Page 813, #33 “Use the internet: Make a visual report of the newest information, both molecular and fossil evidence, gathered by scientists on the origins of chordates”.

### 1.6. Figures, pictures and illustrations

All the illustrations and figures in the Arabic version are exactly identical to those of the English version.



## Philosophy for Grade 10 Biology Book (Terms 1 and 2)

This is the first/second book in the Biology series for the high school level and we hope that it will cater to our students' needs in terms of **knowledge and skills acquisition**. This book is part of a comprehensive project that aims at a substantial improvement of the science curriculum. One of the features of this improvement is to provide students with **opportunities to acquire information on their own using a variety of different methods including: reading passages, summaries, side margins or paragraphs relating to other science subjects, looking at pictures and concept maps or performing hands-on activities**.

This book is characterized by **fluidity in the way things are presented**. In addition, it **provides many examples that make the presented ideas clearer to students**. At the same, the book **avoids repetition without being too concise so as to avoid loss of meaning or vagueness of ideas**.

The **role of the teacher is to offer guidance** in the educational process without losing his/her role in **providing students with supplementary examples to clarify the presented ideas**. The teacher also has a role in **following up with students' understanding and learning and with providing support for students' creative abilities**.

**(Term 1)** This book consists of five chapters. The first chapter deals with the science of Biology and its benefits. Throughout this chapter and after knowing **how this science contributes to our society**, we hope that students will be able to choose Biology as a possible future career path. This chapter also includes a description of the steps of the scientific method which we hope will **allow students to be able to differentiate between information that is scientific and information that is false**. In addition, students will learn how they can use the scientific method to determine whether what they hear is true or false and what steps to follow in order to do so. The second chapter deals with taxonomy and how organisms are classified. As for the third, fourth and fifth chapters, they discuss different types of living organisms. These chapters provide examples of organisms of each type and the criteria for classifying them into those particular categories. It also provides the student with **everything they need to know about how these organisms relate to their daily lives and to the society in general whether positively, i.e. nutrition, medicine, environment or negatively, i.e. diseases they cause to humans, plants or animals**.

**(Term 2)** This book consists of four chapters which are a continuation of the book in the first term which deals with the taxonomical classification of living organisms. Chapter six of this book deals with animals, specifically invertebrates. The rest of chapter six and chapters seven, eight and nine discuss Sponges and Cnidarians, Worms and Mollusks, Arthropods and Echinoderms and Chordates respectively. The information presented in this book progresses from the simple to the complex and takes into consideration the relationships between the different living organisms. This book aims to provide students with a solid background about invertebrates. In addition it aims to developing their skills of linking structure to function, classifying organisms and using scientific knowledge in their daily life. Finally, the book also aims to introduce students to careers related to Biology, recent scientific developments and innovations related to invertebrates and the importance and influence of these organisms to humans and the environment.



<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: 10 –Term 1			
		Textbook Title: الأحياء: ثانوي الصف الأول الفصل الدراسي الأول			
		Chapter Title: Chapter 1 The Study of Life دراسة الحياة			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>20. Alignment of the translated texts to the philosophy of the original textbook</b>					
20.1.	<i>Content of the Chapter</i>				X
20.2.	<i>Activities included in the chapter</i>				X
20.3.	<i>Learning objectives</i>		X		
20.4.	<i>Practice exercises (N/A)</i>				
20.5.	<i>Assessment exercises</i>				X
20.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
<p><b>1.3. Learning objectives</b></p> <p>The philosophy states that this book aims to provide students with the necessary “knowledge and skills” in science. Although there was no specification of what these skills actually are, it can be inferred that they include higher order thinking skills. However, the learning objectives found at the beginning of every chapter in the student’s book and in the teacher’s guide focus on <i>lower level thinking</i> skills (i.e. they mainly emphasize knowledge and comprehension of the material). To illustrate, the following learning objectives were taken from the first lesson in this chapter which is entitled “Introduction to Biology” (p.10):</p> <ul style="list-style-type: none"> <li>• Define Biology.</li> <li>• Specify the potential benefits of studying Biology.</li> <li>• Summarize the characteristics of living things.</li> </ul>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>14. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
14.1. Length of sentences				X
14.2. Complexity of sentences				X
14.3. Diversity of language structures				X
14.4. Number of concepts per chapter		X		
14.5. Reuse of technical terms in subsequent chapters				X
14.6. Clarity of definitions of technical terms				X
14.7. Using concrete examples to illustrate concepts				X
14.8. Absence of terms and sentences with no educational benefit (redundancy)				X
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><b>2.4. Number of concepts per chapter</b></p> <p>This chapter consists of two lessons. Although the number of concepts presented in the first lesson “Introduction to Biology” is acceptable, the number of concepts in the second lesson “The Nature of Science and its Methods” is quite large. Presented below are the concepts dealt with in this lesson (pp 17-26):</p> <p>I. What is science? (what are the characteristics of science)</p> <ol style="list-style-type: none"> <li>1. Evidence-based</li> <li>2. Expands scientific knowledge</li> <li>3. Generates questions</li> <li>4. Challenges theory</li> <li>5. Verifies conclusions</li> <li>6. Requires collaboration with other scientists</li> <li>7. Employs the metric system</li> </ol> <p>II. Science in our daily lives (ethical issues and scientific knowledge)</p> <p>III. The Scientific Method</p> <ol style="list-style-type: none"> <li>1. Ask a question</li> <li>2. Form a hypothesis</li> <li>3. Collect the data               <ol style="list-style-type: none"> <li>a. Controlled experiments</li> <li>b. Experiment design</li> <li>c. Data gathering</li> <li>d. Investigations</li> </ol> </li> <li>4. Analyze the data</li> <li>5. Report conclusions</li> <li>6. Scientific inquiry</li> </ol>				



It would be suggested to separate these concepts into two separate lessons in order to reduce the amount of information found in the lesson. For example, numbers “I” and “II” can be presented in one lesson, while number “III” can be presented in another.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>27. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
27.1. <i>Illustrations</i>				X
27.2. <i>Content</i>				X
27.3. <i>Activities</i>				X
27.4. <i>Practice Exercises (N/A)</i>				
27.5. <i>Assessment Exercises</i>				X
27.6. <i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>31. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
31.1. <i>Illustrations</i>				X
31.2. <i>Content</i>				X
31.3. <i>Activities</i>			X	
31.4. <i>Practice Exercises (N/A)</i>				
31.5. <i>Assessment Exercises</i>				X

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

Extra Note:

4.3. *Activities*

The activity presented on page 20 (analysis of lab data) gives the temperature in Fahrenheit. However, the unit of measurement of temperature in The Gulf States is Celsius.

Comments and explanation on implementing the indicator.

(Please see synthesis report)

Additional indicators and other comments.

(Please see synthesis report)



<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: 10 –Term 1			
		Textbook Title: الأحياء: ثانوي الصف الأول الفصل الدراسي الأول			
		Chapter Title: Chapter 2 Organizing Life's Diversity تنظيم تنوع الحياة			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>21. Alignment of the translated texts to the philosophy of the original textbook</b>					
21.1.	<i>Content of the Chapter</i>			X	
21.2.	<i>Activities included in the chapter</i>			X	
21.3.	<i>Learning objectives</i>		X		
21.4.	<i>Practice exercises (N/A)</i>				
21.5.	<i>Assessment exercises</i>			X	
21.6.	<i>Skills</i>			X	
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><i>1.3. Learning objectives</i>            This chapter is divided into two lessons: Lesson 1 (The History of Classification) and Lesson 2 (Modern Classification). The learning objectives of this lesson mainly focus on knowledge and comprehension of the material, although the book's philosophy states that <i>skills acquisition</i> are also targeted. The following learning objectives taken from the first lesson illustrate this point (p.34):</p> <ul style="list-style-type: none"> <li>• Compare between Aristotle's and Linnaeus's classification of living organisms.</li> <li>• Clarify how to write the scientific name using binomial nomenclature.</li> <li>• Summarize the different taxonomical levels in the classification of living organisms.</li> </ul>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>15. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
15.1. Length of sentences				X
15.2. Complexity of sentences				X
15.3. Diversity of language structures				X
15.4. Number of concepts per chapter			X	
15.5. Reuse of technical terms in subsequent chapters				X
15.6. Clarity of definitions of technical terms		X		
15.7. Using concrete examples to illustrate concepts				X
15.8. Absence of terms and sentences with no educational benefit (redundancy)			X	
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p>2.6. Clarity of definition of technical terms            Although the terms <i>بدائية النوى</i> and <i>حقيقة النوى</i> were used throughout both lessons, there was no clear distinction or definition made between the two concepts. It is very important to clarify the meanings of both of these terms since they are necessary for understanding the taxonomical classification of living organisms. In addition, on page 39, the terms Order, Class, Phylum, Kingdom and Domain were all presented without definitions. It should also be noted that the term “morphology” was presented in the “review words” section at the beginning of the first lesson (p. 34) even though this word was never used throughout the whole lesson. Finally, on page 44 in the teacher’s book the word “cellulose” was used as an answer to a question in the students’ book; however, the term “cellulose” was never mentioned in the text of the student book.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>28. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
28.1. Illustrations			X	
28.2. Content		X		
28.3. Activities			X	
28.4. Practice Exercises (N/A)				
28.5. Assessment Exercises				X



28.6.	<i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 3 given a score of less than 3</p> <p><b>3.2 Content</b></p> <p>There are a couple of issues that are worth noting with regards to the content of this chapter. First of all, the content is somewhat disorganized in the way it is presented making the concepts unclear and confusing. For instance, on page 36, the binomial nomenclature is introduced and is described as being composed of two parts: the Genus and Species. However, at this point no definition of these terms had been made yet. The meanings of Genus and Species were given <i>afterwards</i>. In addition, the <i>order</i> in which the concepts were presented is confusing. For instance, as just mentioned, the concept of binomial nomenclature should be mentioned <i>after</i> explaining the taxonomical classification of organisms into: Domain, Kingdom, Phylum, Class, Order, Family, Genus and Species. This is due to the fact that in order to comprehend the concept of the binomial nomenclature, the concepts of Genus and Species should be understood first. Also, the order in which the taxonomical classification of organisms was presented went from the specific to the general (i.e. the concepts of Genus and Species were explained first and the concepts of Domain and Kingdom were explained last). This makes the concepts difficult to understand and could create misconceptions amongst students. In addition, the concept of “taxon” was explained under the title of “Genus and Species”; however, this is a general introduction to the classification system and should be placed in a paragraph on its own <i>before</i> explaining “Genus and Species”. Finally, on page 41 (in the second lesson), the Archaeobacteria and Bacteria were presented as <i>domains</i>. However, they are also the names of two of the <i>kingdoms</i> in the classification system. This was not made clear in the content of the lesson.</p> <p><b>3.3. Activities (extra note)</b></p> <p>The Arabization of the activities in both lessons was appropriate; however, there is one thing worth mentioning: in the teacher’s guide (on page 36) the students are asked to do an activity that is not relevant at this stage of the chapter. More specifically, they were asked to come up with a scientific name for an animal they created using the binomial nomenclature. However, at this stage they had not yet learned what a Genus or Species is. Also, it could be suggested to allow students to make a table similar to the one presented on page 45 instead of reading the table directly.</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>32. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
32.1. <i>Illustrations</i>				X
32.2. <i>Content</i>				X
32.3. <i>Activities</i>				X
32.4. <i>Practice Exercises (N/A)</i>				
32.5. <i>Assessment Exercises</i>				X
<p>Illustrate by at least one example any indicator of criterion 4 given a score of less than 3</p> <p>Comments and explanation on implementing the indicator.</p> <p>Additional indicators and other comments.</p>				



<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: 10 –Term 1			
		Textbook Title: الأحياء: ثانوي الصف الأول الفصل الدراسي الأول			
		Chapter Title: Chapter 3 Bacteria & Viruses البكتيريا والفيروسات			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>22. Alignment of the translated texts to the philosophy of the original textbook</b>					
22.1.	<i>Content of the Chapter</i>				X
22.2.	<i>Activities included in the chapter</i>			X	
22.3.	<i>Learning objectives</i>		X		
22.4.	<i>Practice exercises (N/A)</i>				
22.5.	<i>Assessment exercises</i>				X
22.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
<p><b>1.3. Learning Objectives</b></p> <p>The learning objectives in this chapter focus on knowledge and comprehension of the material without any emphasis on skills acquisition, which is something mentioned in the philosophy of the book. This is illustrated by the following learning objectives taken from the first lesson of this chapter “Bacteria” (p.52):</p> <ul style="list-style-type: none"> <li>• Differentiate between prokaryotes and eukaryotes.</li> <li>• Describe the mechanisms in which bacteria remains isolated or in groups.</li> <li>• Describe the ways in which bacteria is useful to humans.</li> </ul>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>16. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
16.1. Length of sentences				X
16.2. Complexity of sentences				X
16.3. Diversity of language structures				X
16.4. Number of concepts per chapter		X		
16.5. Reuse of technical terms in subsequent chapters			X	
16.6. Clarity of definitions of technical terms			X	
16.7. Using concrete examples to illustrate concepts			X	
16.8. Absence of terms and sentences with no educational benefit (redundancy)				X
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p>2.4. Number of concepts per chapter</p> <p>This chapter is composed of two lessons: the first dealing with the topic of “bacteria” and the second dealing with the topic of “viruses”. Although there were an acceptable number of concepts presented in the virus lesson, there were a very large number of concepts presented in the bacteria lesson. For the sake of illustration, the following presents some of the major topics and subtopics dealt with in this lesson (pp. 52-61):</p> <ol style="list-style-type: none"> <li>1. Diversity of Prokaryotes <ol style="list-style-type: none"> <li>a. Archaeobacteria</li> <li>b. Eubacteria</li> </ol> </li> <li>2. Prokaryote structure <ol style="list-style-type: none"> <li>a. Chromosomes</li> <li>b. Capsule</li> <li>c. Pili</li> <li>d. Size</li> </ol> </li> <li>3. Identifying Prokaryotes <ol style="list-style-type: none"> <li>a. Shape</li> <li>b. Cell walls</li> <li>c. Movement</li> </ol> </li> <li>4. Reproduction of Prokaryotes <ol style="list-style-type: none"> <li>a. Binary fission</li> <li>b. Conjugation</li> </ol> </li> <li>5. Metabolism of Prokaryotes <ol style="list-style-type: none"> <li>a. Autotrophic bacteria</li> <li>b. Heterotrophic bacteria</li> </ol> </li> <li>6. Survival of Bacteria <ol style="list-style-type: none"> <li>a. Endospores</li> </ol> </li> </ol>				

- b. Mutations
- 7. Ecology of Bacteria
  - a. Nitrogen fixing role
  - b. Normal flora
  - c. Food and medicine
  - d. Disease-causing bacteria

It could be suggested to divide the concepts into different lessons (two lessons) if decreasing the number of concepts is not plausible.

### 2.5. Reuse of technical terms in subsequent chapters

Overall, there is a consistent use of technical terms throughout lessons and chapters; however, in the second lesson entitled “viruses” there is an inconsistent use of the term “host cell”. On page 63 it was used once as *المضيقة الخلية* while on page 64 it started being referred to as *العائلخلية*

It should also be mentioned here, that no definition of either term was provided.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>29. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
29.1. <i>Illustrations</i>			X	
29.2. <i>Content</i>			X	
29.3. <i>Activities</i>				X
29.4. <i>Practice Exercises (N/A)</i>				
29.5. <i>Assessment Exercises</i>				X
29.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.1. Illustrations (extra note)

The illustration provided on page 65 depicting the lytic and lysogenic cycles of a virus is somewhat confusing. More specifically, it is unclear where the cycle actually begins. It would probably be more ideal if the different steps of the cycle were numbered in the illustration. This would also make the alignment between the text on page 64 and the illustration much more clear.

### 3.2. Content (extra note)

There are a few instances in the first lesson in which the concepts are presented too briefly without any elaboration. This prevents students from getting a comprehensive understanding of the concept. Some examples of this include the following:

- On page 53, the paragraph on archaebacteria stated “salt-loving bacteria have many adaptations that allow it to survive in this environment”. After this statement there was no elaboration as to *what* those adaptations are.
- The following statement was mentioned in the first lesson “suitable growth conditions for bacteria” but there was no explanation of *what* those conditions are.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>33. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>33.1. Illustrations</i>				X
<i>33.2. Content</i>				X
<i>33.3. Activities</i>				X
<i>33.4. Practice Exercises (N/A)</i>				
<i>33.5. Assessment Exercises</i>				X
<p>Illustrate by at least one example any indicator of criterion 4 given a score of less than 3</p> <p>The nature of this chapter doesn't allow much room for cultural relevance especially in terms of illustrations, since they are pictures of different types of bacteria and viruses (which is something not culturally dependent). Thus, the illustrations, content, activities and assessment exercises in this chapter are mainly culturally neutral. However, it can be argued that the content can be made more culturally relevant by discussing the most common types of bacteria and viruses found in the Gulf States environment. Also, for example, a website was suggested for more information about the types of bacterial infections in the KSA (p. 61). This information can be used for activity or assessment purposes.</p>				

Comments and explanation on implementing the indicator.  
 (please see synthesis report)  
 Additional indicators and other comments.  
 (please see synthesis report)



<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: 10 –Term 2			
		Textbook Title: الأحياء: ثانوي الصف الأول الفصل الدراسي الثاني			
		Chapter Title: Chapter 6 Introduction to Animals مدخل إلى الحيوانات			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>23. Alignment of the translated texts to the philosophy of the original textbook</b>					
23.1.	<i>Content of the Chapter</i>			X	
23.2.	<i>Activities included in the chapter</i>				X
23.3.	<i>Learning objectives</i>			X	
23.4.	<i>Practice exercises (N/A)</i>				
23.5.	<i>Assessment exercises</i>			X	
23.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>17. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
17.1.	<i>Length of sentences</i>				X
17.2.	<i>Complexity of sentences</i>				X
17.3.	<i>Diversity of language structures</i>				X
17.4.	<i>Number of concepts per chapter</i>	X			
17.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
17.6.	<i>Clarity of definitions of technical terms</i>			X	
17.7.	<i>Using concrete examples to illustrate concepts</i>			X	
17.8.	<i>Absence of terms and sentences with no educational benefit</i>			X	

( <i>redundancy</i> )				
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><b>2.4. Number of concepts per chapter</b>          This chapter consists of three lessons: “Animal Characteristics”, “Animal Body Plans” and “Sponges and Cnidarians”. Each of these lessons contains a large amount of information making the number of concepts in the whole chapter very overwhelming. For the sake of illustration, the concepts dealt with in the first lesson (pp. 8-20) are presented below:</p> <ul style="list-style-type: none"> <li>A. Feeding and Digestion</li> <li>B. Support (vertebrates vs invertebrates)</li> <li>C. Habitats</li> <li>D. Animal Cell Structure</li> <li>E. Movement</li> <li>F. Reproduction:             <ul style="list-style-type: none"> <li>1. Sexual and asexual reproduction</li> <li>2. Hermaphrodites</li> <li>3. Internal and external fertilization</li> <li>4. Formation of a zygote (Blastula and gastrula)</li> <li>5. Tissue development (endoderm, ectoderm, mesoderm)</li> </ul> </li> </ul> <p>The remaining two lessons in this chapter contain the same amount of information, if not more. It would be suggested to reduce the amount of information in this chapter by reducing the number of concepts presented. In addition, it would be more ideal if the last lesson in this chapter (Sponges and Cnidarians) was made into a chapter on its own. This is due to the fact that this lesson deals with a different topic than the rest of chapter: the whole chapter is an introduction to animals, whereas the last lesson discusses the characteristics of a specific group of animals.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>30. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
30.1. <i>Illustrations</i>			X	
30.2. <i>Content</i>		X		
30.3. <i>Activities</i>		X		
30.4. <i>Practice Exercises (N/A)</i>				
30.5. <i>Assessment Exercises</i>				X
30.6. <i>Skills</i>			X	

<p>Illustrate by at least one example any indicator of criterion 3 given a score of less than 3</p> <p><b>3.1. Illustrations (extra note)</b>          On page 23 there is an explanation of the different methods in which sponges asexually reproduce; however, this explanation is not accompanied with an illustration. Providing a picture of these processes would make the concept of asexual reproduction much more tangible and understandable.</p>				
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### 3.2. Content

There were some instances in which the content wasn't presented comprehensively. In other words, some of the concepts were presented incompletely and not enough elaboration was made. Some of these instances include the following:

- In the introduction of the chapter (page 8) there is no overview of the different types of organisms that fall under the animal kingdom. It would provide students with a better background of the animal kingdom if it was explained first that the animal kingdom is divided into the phyla vertebrates and invertebrates and that vertebrates consist of the classes of mammals, birds...etc and invertebrates consist of the classes of worms, sponges...etc After having given this introduction, students would have a clearer picture of the animal kingdom and would thus be better equipped to study each of the phyla individually. It is in fact important to mention the distinction between vertebrate and invertebrates in the animal kingdom because it is one of the main criteria for classification.
- On page 8 where feeding and digestion of animals was being explained it was stated that “the structure of the mouth determines the mouth's function”. However, no examples were given to elaborate on this. This part should provide a link between autotrophy and heterotrophy and the types of mouth structures associated with each.
- On page 11 where habitats of animals were being explained it was stated that “animals have different adaptations that allow them to live in diverse environments”. Again, there was no elaboration made to indicate what those adaptations were.
- Finally, on page 28 an illustration of the reproductive cycle of Cnidarians is given, but there is no description in the text to explain the process.

### 3.3. Activities

Although the activities in this chapter were aligned with the philosophy of the book (i.e. included the use of inquiry, research skills...etc), some of the activities were weak in terms of catering for the science concepts mentioned in the chapter. First of all, a lot of the activities focused on small minor details found in the chapter or on certain definitions rather than on the bigger picture. For instance, the “المطويات” activity mentioned at the beginning of the chapter deals with one of the minor details in lesson 2 which is comparing the three different types of body cavities (coelomates, pseudocoelomates and acoelomates). The “المطويات” activity should focus on a broader concept that encompasses the major ideas in the whole chapter. In addition, some of the activities were repeated more than once. For instance, a similar activity to the “المطويات” activity was suggested on page 19 in the teacher's book in which students are asked to make a diagram comparing the different types of body cavities. A list of suggested activities that can be done in this chapter is presented below:

1. Since, as mentioned earlier the “feeding and digestion” concept was presented very briefly, students could be asked to research the different types of animal mouths and which mouth structures best serve particular feeding functions.
2. Since, as also mentioned earlier, the “habitat” section wasn't elaborated enough, students can be asked to research on how different animals adapt to their environments.
3. Students can be asked to link chapter 2 (in term 1) to this chapter by giving them a group of animals that they have to classify using their own classification system that is based on grouping organisms based on similarities in their characteristics. From this activity, students can deduce the general characteristics of animals rather than just

reading the material as is from the book.

4. On page 27 students are presented with a table that includes a comparison between Sponges and Cnidarians. Students can be asked to make their own table *before* reading the table directly from the page. (This could be a suitable activity for the “المطويات” activity).
5. Finally, students can be asked to write a paragraph explaining the reproductive cycle presented on page 28 since a text explanation isn’t given in the book.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>34. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
34.1. <i>Illustrations</i>				X
34.2. <i>Content</i>				X
34.3. <i>Activities</i>				X
34.4. <i>Practice Exercises (N/A)</i>				
34.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

(Please see synthesis report)

Additional indicators and other comments.

(Please see synthesis report)



<b>Book Evaluation Form</b>	Subject: Biology			
	Grade: 10 –Term 2			
	Textbook Title: الأحياء: ثانوي الصف الأول الفصل الدراسي الثاني			
	Chapter Title: Chapter 6 Introduction to Animals مدخل إلى الحيوانات			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>24. Alignment of the translated texts to the philosophy of the original textbook</b>				
24.1. <i>Content of the Chapter</i>			X	
24.2. <i>Activities included in the chapter</i>				X
24.3. <i>Learning objectives</i>			X	
24.4. <i>Practice exercises (N/A)</i>				
24.5. <i>Assessment exercises</i>			X	
24.6. <i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>18. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
18.1. <i>Length of sentences</i>				X
18.2. <i>Complexity of sentences</i>				X
18.3. <i>Diversity of language structures</i>				X
18.4. <i>Number of concepts per chapter</i>	X			
18.5. <i>Reuse of technical terms in subsequent chapters</i>				X
18.6. <i>Clarity of definitions of technical terms</i>			X	
18.7. <i>Using concrete examples to illustrate concepts</i>			X	
18.8. <i>Absence of terms and sentences</i>			X	

<i>with no educational benefit (redundancy)</i>				
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><b>2.4. Number of concepts per chapter</b>            This chapter consists of three lessons: “Animal Characteristics”, “Animal Body Plans” and “Sponges and Cnidarians”. Each of these lessons contains a large amount of information making the number of concepts in the whole chapter very overwhelming. For the sake of illustration, the concepts dealt with in the first lesson (pp. 8-20) are presented below:</p> <ul style="list-style-type: none"> <li>G. Feeding and Digestion</li> <li>H. Support (vertebrates vs invertebrates)</li> <li>I. Habitats</li> <li>J. Animal Cell Structure</li> <li>K. Movement</li> <li>L. Reproduction:               <ul style="list-style-type: none"> <li>6. Sexual and asexual reproduction</li> <li>7. Hermaphrodites</li> <li>8. Internal and external fertilization</li> <li>9. Formation of a zygote (Blastula and gastrula)</li> <li>10. Tissue development (endoderm, ectoderm, mesoderm)</li> </ul> </li> </ul> <p>The remaining two lessons in this chapter contain the same amount of information, if not more. It would be suggested to reduce the amount of information in this chapter by reducing the number of concepts presented. In addition, it would be more ideal if the last lesson in this chapter (Sponges and Cnidarians) was made into a chapter on its own. This is due to the fact that this lesson deals with a different topic than the rest of chapter: the whole chapter is an introduction to animals, whereas the last lesson discusses the characteristics of a specific group of animals.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>31. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>31.1. Illustrations</i>			X	
<i>31.2. Content</i>		X		
<i>31.3. Activities</i>		X		
<i>31.4. Practice Exercises (N/A)</i>				
<i>31.5. Assessment Exercises</i>				X
<i>31.6. Skills</i>			X	
<p>Illustrate by at least one example any indicator of criterion 3 given a score of less than 3</p> <p><b>3.1. Illustrations (extra note)</b>            On page 23 there is an explanation of the different methods in which sponges asexually reproduce; however, this explanation is not accompanied with an illustration. Providing a picture of these processes would make the concept of asexual reproduction much more tangible and understandable.</p>				

### 3.2. Content

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6. Since, as mentioned earlier the “feeding and digestion” concept was presented very briefly, students could be asked to research the different types of animal mouths and which mouth structures best serve particular feeding functions.
7. Since, as also mentioned earlier, the “habitat” section wasn't elaborated enough, students can be asked to research on how different animals adapt to their environments.
8. Students can be asked to link chapter 2 (in term 1) to this chapter by giving them a group of animals that they have to classify using their own classification system that is based on grouping organisms based on similarities in their characteristics. From

this activity, students can deduce the general characteristics of animals rather than just reading the material as is from the book.

9. On page 27 students are presented with a table that includes a comparison between Sponges and Cnidarians. Students can be asked to make their own table *before* reading the table directly from the page. (This could be a suitable activity for the “المطويات” activity).

10. Finally, students can be asked to write a paragraph explaining the reproductive cycle presented on page 28 since a text explanation isn’t given in the book.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>35. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
35.1. <i>Illustrations</i>				X
35.2. <i>Content</i>				X
35.3. <i>Activities</i>				X
35.4. <i>Practice Exercises (N/A)</i>				
35.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

(Please see synthesis report)

Additional indicators and other comments.

(Please see synthesis report)



<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: 10 –Term 2			
		Textbook Title: الأحياء: ثانوي الصف الأول الفصل الدراسي الثاني			
		Chapter Title: Chapter 9 Echinoderms and Invertebrate Chordates شوكيات الجلد واللافقاريات الحبلية			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>25. Alignment of the translated texts to the philosophy of the original textbook</b>					
25.1.	<i>Content of the Chapter</i>			X	
25.2.	<i>Activities included in the chapter</i>				X
25.3.	<i>Learning objectives</i>		X		
25.4.	<i>Practice exercises (N/A)</i>				
25.5.	<i>Assessment exercises</i>			X	
25.6.	<i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><b>1.3. Learning Objectives</b>            Although the philosophy of the book emphasizes skills acquisition, the learning objectives found in the student and teacher books focus on knowledge and comprehension of the material. This is illustrated in the following example of the learning objectives found in the first lesson of this chapter entitled “Echinoderm Character” (p. 106):</p> <ul style="list-style-type: none"> <li>• Summarize the general characteristics of echinoderms.</li> <li>• Differentiate between the different types of echinoderms.</li> </ul>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>19. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
19.1. <i>Length of sentences</i>				X
19.2. <i>Complexity of sentences</i>				X
19.3. <i>Diversity of language structures</i>				X
19.4. <i>Number of concepts per chapter</i>		X		
19.5. <i>Reuse of technical terms in subsequent chapters</i>				X
19.6. <i>Clarity of definitions of technical terms</i>				X
19.7. <i>Using concrete examples to illustrate concepts</i>			X	
19.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>				X
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><b>2.4. Number of concepts per chapter</b>            This chapter consists of two lessons: the first is called “Echinoderm Character” and the second is called “Invertebrate Chordates”. Although the number of concepts in the second lesson is acceptable, the number of concepts in the first lesson is somewhat large. This is especially true since the lesson presents a lot of new technical terms that are difficult to study; it includes the names of many different types of organisms and the names of their corresponding structures. For the sake of illustration, the concepts found in the first lesson are presented below (pp 98-107):</p> <ol style="list-style-type: none"> <li>1. Echinoderms are deuterostomes</li> <li>2. Body structure</li> <li>3. Vascular system               <ol style="list-style-type: none"> <li>a. Madreporite</li> <li>b. Tube feet</li> <li>c. Ampulla</li> </ol> </li> <li>4. Feeding and digestion</li> <li>5. Respiration and circulation</li> <li>6. Response to stimuli</li> <li>7. Movement</li> <li>8. Reproduction and growth</li> <li>9. Echinoderm Diversity               <ol style="list-style-type: none"> <li>a. Sea star</li> <li>b. Brittle star</li> <li>c. Sea urchin and sand dollar</li> <li>d. Sea lilies and feather star</li> </ol> </li> </ol>				

- e. Sea cucumber
- f. Sea daisies
- 10. Ecology of echinoderms
  - a. Benefits of echinoderms
  - b. Harms of echinoderms

It should also be noted here that in each of the types of echinoderms found under “echinoderm diversity” there is an explanation about the shape, structure, feeding habits...etc of each. It would be ideal to either divide the information into two separate lessons or to reduce the amount of information in the first lesson. For instance, the types of echinoderms do not have to be mentioned. Instead, as a suggested activity, students can be asked to do a research project on a type of echinoderm that they choose.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>32. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
32.1. <i>Illustrations</i>			X	
32.2. <i>Content</i>				X
32.3. <i>Activities</i>				X
32.4. <i>Practice Exercises (N/A)</i>				
32.5. <i>Assessment Exercises</i>			X	
32.6. <i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>36. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
36.1. <i>Illustrations</i>				X
36.2. <i>Content</i>				X
36.3. <i>Activities</i>				X
36.4. <i>Practice Exercises (N/A)</i>				
36.5. <i>Assessment Exercises</i>				X

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

Extra note:

The nature of this chapter renders the concepts being presented as culturally neutral since they deal with different types of organisms. However, some relevance to the Gulf States culture may be integrated in the content. For instance, the different types of echinoderms and chordates that are abundantly found in KSA could be mentioned.



Comments and explanation on implementing the indicator.  
Additional indicators and other comments.





## Synthesis Report for Biology Book Grade 10- Term 1

The following is an evaluation report which summarizes the strengths and weaknesses of a set of Biology textbooks for Grade 10 (first term). This set of books, consisting of the teacher's guide, the student's textbook and the student lab manual, was translated to Arabic from the McGraw Hill Glencoe Biology secondary science series. The textbooks comprise of five chapters which deal with diverse topics in Biology. In order to obtain an adequate representation of the set of textbooks, three chapters were chosen for evaluation. This report provides a synthesis of the evaluation of the following three chapters: chapter 1 "The Study of Life"; chapter 2 "Organizing Life's Diversity"; and chapter 3 "Bacteria and Viruses".

Prior to this report, an evaluation form was filled out for each of the aforementioned chapters. The evaluation forms consisted of four rubrics that corresponded to four different evaluation criteria: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the science concepts; and (4) suitability of the translated textbooks to the cultural context of The Gulf States. Each criterion comprised of a set of indicators which were evaluated based on the following scale: 1 (no evidence), 2 (little evidence), 3 (almost satisfactory evidence) and 4 (satisfactory evidence). The following report capitalizes on the strengths and weaknesses of each of the four criteria found in the evaluation forms for all the three evaluated chapters.

### Criterion 1: Alignment of the translated texts to the philosophy of the original textbook

Overall, the set of textbooks were mostly aligned with the book's philosophy, whether through its content, activities, skills and assessment exercises. In fact, there were several areas of strengths with regards to this criterion. The philosophy of the book emphasizes the fact that students should acquire their own knowledge through the use of different methods such as hands-on activities, reading text and illustrations...etc This was something that was clearly evident throughout all three chapters and this was especially obvious in the teacher's guide. All the activities involved the students' own efforts at reading the text to extract information or performing an activity to come up with their own conclusions or even doing research projects for further knowledge acquisition. The role of the teacher in the learning process is merely to guide students and monitor their understanding, which is also something emphasized in the philosophy of the book. This actually presents another major strength which is that teachers are provided with various assessment opportunities in which they can monitor students' understanding. More specifically, there is an evaluation section at the end of every lesson in each chapter and then a summative evaluation at the end of each chapter. In addition, the teacher's guide provides additional methods to assess students' understanding at the end of each lesson. Students are also provided with an opportunity to monitor their own understanding through intermittent "reading checks" that are found throughout the chapters. The purpose of this is for students to be aware of their understanding of concepts as they read the text. It is worth noting here, however, that the "reading checks" are not used consistently or as often as they should be used. For instance, only one reading check was used throughout the whole of chapter 2. Finally, the chapters provide students with links of Biology to their daily lives through content and activities, which is something that is also mentioned in the philosophy.



One major area of weakness with respect to this criterion was the focus on lower level thinking in the learning objectives. The philosophy of the book states that one of the aims of this book is to help students acquire knowledge and *skills*. Although the skills weren't specified, it can be inferred from the content and types of activities presented, that the book aims for developing higher order thinking in science. However, the learning objectives in the three chapters only focus on the knowledge and comprehension level which is apparent from the use of verbs such as “compare”, “summarize”, “describe”, and “define” (see evaluation reports for more details). Nevertheless, this drawback is counterbalanced by the fact that the other components, namely the content, activities, assessment exercises and skills, address higher order thinking skills such as posing questions, drawing conclusions, making hypotheses, designing experiments, evaluating scientific information and engaging in inquiry. This is especially true in the first chapter where the issue of the scientific method is dealt with. Thus, all that is needed for the learning objectives is to integrate those that deal with the higher order thinking skills that are used in the lessons.

A final comment worth mentioning here is that the book's philosophy should provide a more accurate description of what skills the book aims to develop in students. It merely states “we hope that it will cater to our students' needs in terms of knowledge and skills acquisition” (translated from Arabic). Although the skills can be inferred from the types of teaching methods and activities used throughout the chapters, an explicit specification of the skills would make it easier to determine the degree of alignment between the book's philosophy and the content, activities and assessment exercises.

***Criterion 2: Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students***

A major positive point with respect to this criterion was that the Arabic language used in the three chapters was characterized by its simplicity and straightforwardness. The sentences used vocabulary of appropriate difficulty and their length was very suitable for Grade 10 students of various aptitude levels. In addition, there was no redundancy or presence of unnecessary information. This really facilitated the readability of the text which in turn facilitated comprehension of the concepts. In addition, there was consistency in the use of scientific technical terms within the lessons themselves, across the different lessons in a chapter and across the different chapters. Finally, with the exception of some terms found in the “Organizing Life's Diversity” chapter (for instance, *بدائية النوى* and *حقيقة النوى*), all the scientific terms were adequately defined.

One major drawback with respect to this criterion was the large number of concepts which was evident in two of the three chapters. For instance, the lesson entitled “Bacteria” in the “Bacteria and Viruses” chapter deals with all of the following concepts in one lesson (see pages 52-61):

8. Diversity of Prokaryotes
  - c. Archaeobacteria
  - d. Eubacteria
9. Prokaryote structure
  - e. Chromosomes
  - f. Capsule
  - g. Pili
  - h. Size
10. Identifying Prokaryotes



- d. Shape
  - e. Cell walls
  - f. Movement
11. Reproduction of Prokaryotes
- c. Binary fission
  - d. Conjugation
12. Metabolism of Prokaryotes
- c. Autotrophic bacteria
  - d. Heterotrophic bacteria
13. Survival of Bacteria
- c. Endospores
  - d. Mutations
14. Ecology of Bacteria
- e. Nitrogen fixing role
  - f. Normal flora
  - g. Food and medicine
  - h. Disease-causing bacteria

It should be noted that the concepts are all presented in a limited number of pages and consequently most of the concepts are not dealt with in-depth. Two possible modifications to this shortcoming could be made. One suggestion would be to decrease the number of concepts by eliminating some of them; if this is not plausible, the lessons in the chapters could be divided into smaller separate lessons.

*Criterion 3: Suitability of the Arabization of the translated textbooks to serve the math and science concepts*

Generally speaking, in terms of illustrations, activities, skills and assessment exercises, the Arabization was suitable for the science concepts presented in the three chapters. There were a few positive points with regards to this criterion. First, the activities encouraged a lot of scientific writing and extracting information from texts. In addition, the activities provided students with a variety of ways for obtaining scientific information. Also, the assessment exercises and activities emphasized application of higher order thinking skills and going beyond the information presented in the text. Finally, the illustrations served their purpose of clarifying the content presented in the text.

There was one major shortcoming in this criterion which was the *content* in chapters 2 and 3. The shortcoming in the content of chapter 3 “Bacteria and Viruses” was evident in a few instances whereby there was an incomplete presentation of some of the concepts. For instance, on page 53, the paragraph on archaeobacteria stated “salt-loving bacteria have many adaptations that allow it to survive in this environment”. After this statement there was no elaboration as to *what* those adaptations are. This was a minor setback in this particular chapter, which was why “almost satisfactory evidence” was chosen as a ranking. Also, this setback might have a lot to do with the fact that a large number of concepts are presented in this chapter (discussed earlier).

On the other hand, the area of weakness in the content of chapter 2 “Organizing Life’s Diversity” is completely different to that of chapter 3. In this chapter, issues in the content have to do with its *organization* and the *order* in which it was presented. This rendered some of the information as somewhat confusing which could in turn create misconceptions



amongst students. A major issue was the order in which the different levels of taxonomical classifications was explained which was from the specific to the general (i.e. the concepts of Genus and Species were explained first and the concepts of Domain and Kingdom were explained last). For a student who will be reading the information for the first time, this makes the concepts much more difficult to grasp. More importantly, it makes it difficult for students to imagine the “bigger picture” of the classification of living organisms.

Another major drawback with respect to this criterion has to do with the lack of links amongst the three chapters that were evaluated. The first two chapters of this book can actually be considered as foundational chapters: the first chapter deals with the nature of science, the use of the scientific method and the characteristics of living things while the second chapter deals with classification of living organisms. Since these chapters are foundation chapters (especially chapter 1), making a regular reference to them in the remaining chapters of the book would be very pertinent and necessary. This can be done throughout the content, the activities themselves or even as a discussion made by the teacher in passing. However, such links were not evident at all. For instance, in chapter 2 during the explanation of how the classification system came to be, mentioning the nature of science here would have been very relevant. Another example of integrating the chapters together would be to have students come up with a question having to do with bacteria and viruses (chapter 3) based on a particular observation they made in their daily lives, and then have them apply the scientific method to answer the question (chapter 1).

Criterion 4: Suitability of the translated textbooks to the cultural context of The Gulf States

All in all, the content, illustrations, assessment exercises and activities are all culturally relevant, with the exception of one minor case in chapter 1 (see evaluation report). In fact, most of the topics found in these three chapters are culturally *neutral*. Nevertheless, attempts were made to integrate the Gulf States context, for instance through illustrations (a picture of a desert habitat is shown on page 32), content (the names of Arab scientists that have discovered or contributed something to research in science are mentioned on page 11) and even activities (on page 21 of the teacher’s guide, an activity is suggested in which students are asked to look in their local newspapers for current issues in science). Perhaps the only chapter in which there was no particular reference to the Gulf States context was in chapter 3 “Bacteria and Viruses”. Although the nature of this chapter doesn’t allow much room for cultural relevance, especially in terms of illustrations, it can be argued that the *content* can be made more culturally relevant by discussing the most common types of bacteria and viruses found in the Gulf States. Also, for example, a website was suggested for more information about the types of bacterial infections in the KSA (p. 61). This information can also be used for activity or assessment purposes.

Additional comments:

There are a few other positive and negative aspects of the book which were not addressed earlier and which are worth mentioning. Some constructive things that are done in the chapters are:

- inclusion of a list of interesting factual information at the beginning of each chapter relating to the content of the chapter
- making relations between the content of the chapter to some aspect of students’ life at the beginning of each chapter
- inclusion of a revision guide at the end of each chapter which contains all the summaries and new technical words found throughout the lessons.

A negative point includes the following:



- The scientific terms provided in the study guide are presented *without* definitions. It would be more ideal if the scientific terms were given with their definitions as a reference for students.





## Synthesis Report for Biology Book Grade 10- Term 2

*NB. Most of the information presented in this report is identical to the report for Grade 10 Term 1. Any differences in the two reports are marked in red.*

The following is an evaluation report which summarizes the strengths and weaknesses of a set of Biology textbooks for Grade 10 (first term). This set of books, consisting of the teacher's guide, the student's textbook and the student lab manual, was translated to Arabic from the McGraw Hill Glencoe Biology secondary science series. The textbooks comprise of four chapters which deal with diverse topics in Biology. In order to obtain an adequate representation of the set of textbooks, two chapters were randomly chosen for evaluation. This report provides a synthesis of the evaluation of the following two chapters: chapter 6 "Introduction to Animals" and chapter 9 "Echinoderms and Invertebrate Chordates".

Prior to this report, an evaluation form was filled out for each of the aforementioned chapters. The evaluation forms consisted of four rubrics that corresponded to four different evaluation criteria: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the science concepts; and (4) suitability of the translated textbooks to the cultural context of The Gulf States. Each criterion comprised of a set of indicators which were evaluated based on the following scale: 1 (no evidence), 2 (little evidence), 3 (almost satisfactory evidence) and 4 (satisfactory evidence). The following report capitalizes on the strengths and weaknesses of each of the four criteria found in the evaluation forms for the two evaluated chapters.

### Criterion 1: Alignment of the translated texts to the philosophy of the original textbook

Overall, the set of textbooks were mostly aligned with the book's philosophy, whether through its content, activities, skills and assessment exercises. In fact, there were several areas of strengths with regards to this criterion. The philosophy of the book emphasizes the fact that students should acquire their own knowledge through the use of different methods such as hands-on activities, reading text and illustrations...etc This was something that was clearly evident throughout the two chapters and this was especially obvious in the teacher's guide. All the activities involved the students' own efforts at reading the text to extract information, performing an activity to come up with their own conclusions or even doing research projects for further knowledge acquisition. The role of the teacher in the learning process is merely to guide students and monitor their understanding, which is something also emphasized in the philosophy of the book. This actually presents another major strength which is that teachers are provided with various assessment opportunities in which they can monitor students' understanding. More specifically, there is an evaluation section at the end of every lesson in each chapter and then a summative evaluation at the end of each chapter. In addition, the teacher's guide provides additional methods for assessing students' understanding at the end of each lesson. Students are also provided with an opportunity to monitor their own understanding through intermittent "reading checks" that are found throughout the chapters. The purpose of this is for students to be aware of their understanding of concepts as they read the text.

One major area of weakness with respect to this criterion was the focus on lower level thinking in the learning objectives in chapter 9 (this was not a problem in chapter 6). The philosophy of the book states that one of the aims of this book is to help students acquire



knowledge and *skills*. Although the skills weren't specified, it can be inferred from the content and types of activities presented, that the book aims for developing higher order thinking in science. The learning objectives in chapter 9 only focus on knowledge and comprehension of the material. For instance, the learning objectives stated in the first lesson of the chapter are: “summarize the general characteristics of echinoderms” and “differentiate between the different types of echinoderms”. Nevertheless, as was the case in the chapters of the first term, this drawback is counterbalanced by the fact that the other components, namely the content, activities, assessment exercises and skills, do in fact address higher order thinking skills such as posing questions, drawing conclusions, making hypotheses and engaging in inquiry. Thus, all that is needed for the learning objectives is to integrate those that deal with higher order thinking skills that are used in the chapter.

A final comment worth mentioning here is that the book's philosophy should provide a more accurate description of what skills the book aims to develop in students. It merely states “we hope that it will cater to our students' needs in terms of knowledge and skills acquisition” (translated from Arabic). Although the skills can be inferred from the types of teaching methods and activities used throughout the chapters, an explicit specification of the skills would make it easier to determine the degree of alignment between the book's philosophy and the content, activities and assessment exercises.

*Criterion 2: Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students*

A major positive point with respect to this criterion was that the Arabic language used in the two chapters was characterized by its simplicity and straightforwardness. The sentences used vocabulary of appropriate difficulty and their length was very suitable for Grade 10 students of various aptitude levels. In addition, there was no redundancy or presence of unnecessary information. This really facilitated the readability of the text which in turn facilitated comprehension of the concepts. In addition, there was consistency in the use of scientific technical terms within the lessons themselves, across the different lessons in a chapter and across the different chapters.

One major drawback with respect to this criterion was the large number of concepts presented in both chapters. For instance, the lesson entitled “Echinoderm Character” in chapter 9 deals with all of the following concepts (see pages 98-107):

11. Echinoderms are deuterostomes
12. Body structure
13. Vascular system
  - d. Madreporite
  - e. Tube feet
  - f. Ampulla
14. Feeding and digestion
15. Respiration and circulation
16. Response to stimuli
17. Movement
18. Reproduction and growth
19. Echinoderm Diversity
  - g. Sea star
  - h. Brittle star



- i. Sea urchin and sand dollar
  - j. Sea lilies and feather star
  - k. Sea cucumber
  - l. Sea daisies
20. Ecology of echinoderms
- c. Benefits of echinoderms
  - d. Harms of echinoderms

It should be noted that the concepts are all presented in a limited number of pages and consequently most of the concepts are not dealt with in-depth. Two possible modifications to this shortcoming could be made. One suggestion would be to decrease the number of concepts by eliminating some of them; if this is not plausible, the lessons in the chapters could be divided into smaller separate lessons.

*Criterion 3: Suitability of the Arabization of the translated textbooks to serve the math and science concepts*

Generally speaking, in terms of illustrations, skills and assessment exercises, the Arabization was suitable for the science concepts presented in the two chapters. However, the evaluation of chapters 6 and 9 differ in this criterion with respect to the *content* and *activities*. While the latter presented certain drawbacks in chapter 6, they were satisfactory in chapter 9. With respect to the content, some of the information presented in chapter 6 was provided in an incomplete manner whereby not enough elaboration was made. The evaluation report for this chapter provides a detailed description of this; however, for the sake of illustration, one example from the chapter will be presented here. For example, on page 11 where the habitats of animals were being explained it was stated that “animals have different adaptations that allow them to live in diverse environments”. Here no elaboration was made to indicate *what* those adaptations were. With regards to the activities in chapter 6, some of them did not adequately serve the science concepts dealt with in the chapter. In fact, many of the activities focused on minor details or definitions found in the text without taking into consideration the bigger picture. For instance, the “المطويات” activity mentioned at the beginning of the chapter deals with one of the details found in lesson 2 which is comparing the three different types of body cavities (coelomates, pseudocoelomates and acoelomates). The purpose of the “المطويات” activity is to provide some kind of overview or summary of the content of the chapter, not focus on one particular aspect of it. In addition, some of the activities were repeated more than once. For instance, a similar activity to the “المطويات” activity was suggested on page 19 in the teacher’s book in which students are asked to make a diagram comparing the different types of body cavities. A more detailed description of this and a list of suggested activities that can be done are given in the evaluation report.

Another major drawback with respect to this criterion has to do with the lack of links made between the content in the chapters 6 and 9 and the content of chapters 1 and 2 in the book from the first term. As stated in the previous report, the first two chapters in the Term 1 book are basic chapters that are supposed to pave the way for the upcoming chapters in the Biology series. The first chapter deals with the nature of science, the use of the scientific method and the characteristics of living things while the second chapter deals with classification of living organisms. Thus, constant reference to them should always be made whether through content, activities or even as a class discussion initiated by the teacher.

*Criterion 4: Suitability of the translated textbooks to the cultural context of The Gulf States*



All in all, the content, illustrations, assessment exercises and activities were all culturally relevant. In fact, the nature of the topics discussed in these two chapters is very culturally *neutral*. However, some attempts of including the Gulf States context were made. For instance, on page 113 of the teacher's guide, an activity is suggested in which students are taken on a field trip to observe how different types of echinoderms eat. However, this was done very minimally.

Additional comments:

There are a few other positive and negative aspects of the book which were not addressed earlier and which are worth mentioning. Some constructive things that are done in the chapters are:

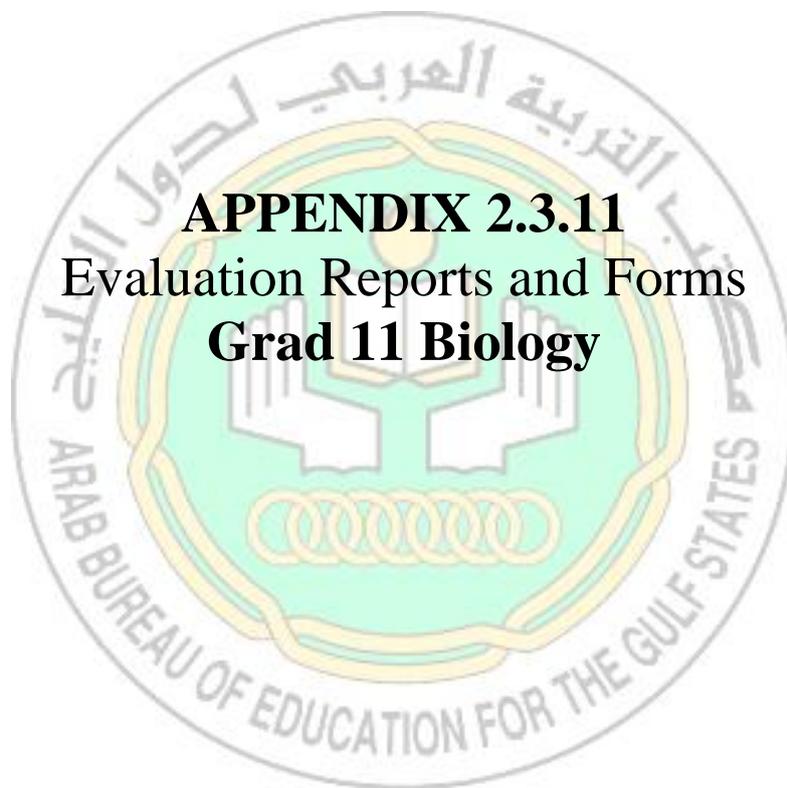
- inclusion of a list of interesting factual information at the beginning of each chapter relating to the content of the chapter
- making relations between the content of the chapter to some aspect of students' life at the beginning of each chapter
- inclusion of a revision guide at the end of each chapter which contains all the summaries and new technical words found throughout the lessons.

A couple of negative points include the following:

- The summaries provided at the end of each lesson and/or chapter are too brief and do not reflect all the main ideas found in text. For instance, the following is the summary found at the end of the first lesson in chapter 9 (p. 119):
  1. Echinoderms can be recognized according to four main structures.
  2. Echinoderms have a water vascular system and tube feet.
  3. Echinoderms have adapted different ways of eating and moving.
  4. There are six main species of Echinoderms that exist today.

This summary leaves out some important ideas found in the lesson. For instance, the reproduction of Echinoderms is not mentioned. In addition, bullet point #2 leaves out the other two important structures of Echinoderms which are the ampulla and madreporite. If students wanted to use the summary for revision purposes, this summary wouldn't provide them with a very accurate picture about the main points of the lesson.

- The scientific terms provided in the study guide are presented *without* definitions. It would be more ideal if the scientific terms were given with their definitions as a reference for students.



**APPENDIX 2.3.11**  
**Evaluation Reports and Forms**  
**Grad 11 Biology**



<b>Book Evaluation Form</b>		Subject: Biology				
		Grade: 11		Semester: 1		
		Textbook Title: الأحياء: ثانوي الصف الثاني الفصل الدراسي الأول				
		Chapter Title: الخامس الفصل الجهاز العصبي				
		Completely different	Large difference	Little difference	Difference due only to culture	No difference
<b>Criterion/Indicator</b>						
<b>26. Agreement of the translated Arabic book with that of the English book</b>						
26.1. Definitions and explanations in the chapter				X	X	
26.2. Activities included in the chapter						X
26.3. Learning objectives				X		
26.4. Practice exercises (N/A)						
26.5. Assessment exercises						X
26.6. Figures, pictures and illustrations					X	

**Note:**

Anything highlighted in the photocopied chapters (whether English or Arabic) represents *differences* between the English and Arabic versions. The following is a key for the color coding in the chapters:

- *Pink* highlights: difference in learning objectives
- *Blue* highlights: difference in content or explanation
- *Yellow* highlights: difference in activities
- *Orange* highlights: difference in illustrations

*1.1 Definitions and explanations in the chapter*

The definitions and explanations in the Arabic version were actually identical to those found in the English version. One instance in which there was a minor difference is found on page 117 of the Arabic version where it is stated that “**Interneurons** also carry the impulse to glands or muscles” which is an inaccurate portrayal of the meaning found in the English version where it is stated that “**Interneurons carry the impulse to motor neurons**, which carry impulses...to a gland or muscle” (page 963).

Also, there was a minor difference due to culture where the sections dealing with alcohol (page 979) and illegal drugs (page 980) found in the English version were completely omitted from the Arabic version.

*1.2. Activities included in the chapter*



The activities found in the Arabic version are exactly identical to that of the English version.

### 1.3. Learning Objectives

The learning objectives in the Arabic version are exactly identical to that of the English version except for one minor detail in the wording of one of the objectives in lesson 3 of the Arabic version. More specifically, the learning objective states “Explain how a person can become addicted to drugs” (page 128) while the English version states “Explain how, **at the cellular level**, a person can become addicted to a drug” (page 977).

### 1.4. Practice exercises (N/A)

There are no practice exercises in this book.

### 1.5. Assessment exercises

The assessment exercises found at the end of each lesson and at the end of the chapter in the Arabic version are exactly identical to that of the English version.

### 1.6. Figures, pictures and illustrations

All the figures and illustrations are the exactly the same in both the English and Arabic versions with the exception of a few pictures which were modified or deleted for cultural purposes:

- The picture of a *woman* diving on page 960 of the English version is replaced with a picture of a *boy* on page 114 of the Arabic version.
- The picture of Wollstonecraft Shelley (a woman) on page 968 of the English version is omitted from the Arabic version.
- The picture of a group of American boys on page 983 of the English version is replaced with a picture of a group of The Gulf States boys on page 134 of the Arabic version.



<b>Book Evaluation Form</b>		Subject: Biology				
		Grade: 11		Semester: 2		
		Textbook Title: الأحياء: ثانوي الصف الثاني الفصل الدراسي الثاني				
		Chapter Title: التاسع الفصل جهاز المناعة				
		Completely different	Large difference	Little difference	Difference due only to culture	No difference
<b>Criterion/Indicator</b>						
<b>27. Agreement of the translated Arabic book with that of the English book</b>						
27.1. Definitions and explanations in the chapter				X		
27.2. Activities included in the chapter						X
27.3. Learning objectives						X
27.4. Practice exercises (N/A)						
27.5. Assessment exercises				X	X	
27.6. Figures, pictures and illustrations					X	

**Note:**

Anything highlighted in the photocopied chapters (whether English or Arabic) represents *differences* between the English and Arabic versions. The following is a key for the color coding in the chapters:

- *Pink* highlights: difference in learning objectives
- *Blue* highlights: difference in content or explanation
- *Yellow* highlights: difference in activities
- *Orange* highlights: difference in illustrations

*1.1 Definitions and explanations in the chapter*

Overall, the definitions and explanations in the Arabic version were very much aligned with those found in the English version. However, there were a few instances in which the Arabic translation did not accurately portray the meaning found in the English version, which in turn affected the accuracy of the scientific meaning. A few examples of these instances are presented below:

- On page 68 of the Arabic version defines the nonspecific immune response as one that “protects against invading pathogens” while the English version defines it as one that “protects against **any** pathogen” (page 1084).
- Page 1088 of the English version states “the **activated** helper T-cell reproduces” while the Arabic version states “the helper T-cell reproduces” (page 71).
- During the explanation of the antibody formation it is stated in the English version (page 1088) that “DNA...**codes for the production** of various heavy and light protein



chains” while the Arabic version states “DNA **produces** various heavy and light protein chains” (page 73).

In addition, there were a couple of very minor details that were omitted but this was done very minimally and did not affect the overall scientific meaning. For instance, statistics about the spread of AIDS in the USA found on page 1090 in the English version are not found in the Arabic version.

### 1.2. Activities included in the chapter

The activities found in the Arabic version are exactly identical to that of the English version.

### 1.3. Learning Objectives

The learning objectives in the Arabic version are exactly identical to that of the English version.

### 1.4. Practice exercises (N/A)

There are no practice exercises in this book.

### 1.5. Assessment exercises

The formative assessment exercises and the end of the chapter exercises in the Arabic version are almost exactly identical to that of the English version. Only two minor differences are evident:

- On page 76 of the Arabic version, the first question of the formative assessment states “**Specify** the cells that are involved in the specific and non-specific immune responses” while the English version (page 1091) states “**compare** specific and non-specific immune responses”.
- Question 24 of the end of the chapter exercises in the English version (page 1100) is omitted from the Arabic version for cultural reasons since the question states “Form a hypothesis to why the proportion of unvaccinated Americans is increasing”.

### 1.6. Figures, pictures and illustrations

All the figures and illustrations are the exactly the same in both the English and Arabic versions with the exception of **two** pictures which were modified for cultural purposes:

- The picture of an *American* boy on page 1074 of the English version is replaced with a picture of a *The Gulf States* boy on page 66 of the Arabic version.
- The diagram of the lymphatic system shown on the body of a *girl* (page 1086 of the English version) is replaced with the body of a *boy* in the Arabic version (page 70).



## Philosophy for Grade 11 Biology Book (Terms 1 and 2)

This is the third/fourth book in the Biology series at the high school level and we hope that it will cater to our students' needs in terms of **knowledge and skills acquisition**. This book is part of a comprehensive project that aims at a substantial improvement of the science curriculum. One of the features of this improvement is that students will be provided with **opportunities to acquire information using a variety of different methods including: reading passages, summaries, side margins or paragraphs relating to other science subjects, looking at pictures and concept maps or performing lab activities.**

This book is characterized by **fluidity in the way things are presented**. In addition, it **provides many examples that make the presented ideas clearer to students**. At the same, the book **avoids repetition without being too concise so as to avoid loss of meaning or vagueness of ideas**.

The **role of the teacher is to offer guidance** in the educational process without losing his/her role in **providing students with supplementary examples to clarify the presented ideas**. The teacher also has a role in **following up with students' understanding and learning and with providing support for students' creative abilities**.

**(Term 1)** This book consists of six chapters. The first three chapters deal with vertebrates in terms of their **structure and function, characteristics, their adaptations for living in different environments and their significance to humans**. The first chapter is about fish and amphibians. The second chapter discusses reptiles and birds. Finally, the third chapter discusses mammals. The last three chapters deal with the human bodily systems in terms of their **structure, function and health-related issues**. These chapters aim at providing students with the **concepts and skills** necessary to understand the **structures of these living organisms and the human bodily systems, how they carry out their functions, how they adapt to their environments and how the different functions relate to each other**.

**(Term 2)** This book consists of six chapters. The first three chapters deal with the human bodily systems in terms of their **structure, function and health-related issues**. These chapters aim at providing students with the **concepts and skills** necessary for understanding the structures of human systems, how each system functions separately and **how the different systems function together**. As for the last three chapters, they deal with the study of plants in terms of their structure, adaptations for living in different environments and their **significance to humans**. The fourth chapter discusses the different types of plants. The fifth chapter deals with the structure and function of the different parts of a plant. Finally, the sixth chapter deals with plant reproduction.

This book contains **scientific information presented in a well coordinated way such that it is easy to refer back to the information** (which deals with vertebrates and the structures of some of the bodily systems, along with explanatory details about their functions). This book consists of **clear pictures** to help understand how vertebrates adapt to their environment and how the human body is structured. This book contains **inquiry activities and experiments** and relates **to society and technology issues**. In addition, each chapter is provided with a **scientific enrichment page**. Finally, information about **issues related to human health** such as how to **take care of one's health and prevent disease and the role that bodily systems play in that** is also provided.



<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: Grade 11- Term 1			
		Textbook Title: الأحياء: ثانوي الصف الثاني الفصل الدراسي الأول قسم العلوم الطبيعية			
		Chapter Title: Chapter 2 Reptiles & Birds الزواحف والطيور			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>28. Alignment of the translated texts to the philosophy of the original textbook</b>					
28.1.	<i>Content of the Chapter</i>			X	
28.2.	<i>Activities included in the chapter</i>				X
28.3.	<i>Learning objectives</i>		X		
28.4.	<i>Practice exercises(NA)</i>				
28.5.	<i>Assessment exercises</i>			X	
28.6.	<i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><b>1.3 Learning objectives</b>            The learning objectives found in both lessons in this chapter focus on lower level thinking (i.e. mostly at the knowledge and comprehension level). The following objectives are those found in the first lesson entitled “reptiles” (p. 38):</p> <ul style="list-style-type: none"> <li>• <u>Clarify</u> the characteristics that allow the amniotic egg to completely adapt on land.</li> <li>• <u>Summarize</u> the characteristics of reptiles.</li> <li>• <u>Differentiate</u> between different classes of reptiles.</li> </ul> <p>In addition to emphasizing lower level thinking, the objectives do not cover all the topics dealt with in the lesson, specifically the section called “ecology of reptiles” (p. 45).</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>20. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>20.1.Length of sentences</i>				X
<i>20.2.Complexity of sentences</i>				X
<i>20.3.Diversity of language structures</i>				X
<i>20.4.Number of concepts per chapter</i>	X			
<i>20.5.Reuse of technical terms in subsequent lessons and chapters</i>				X
<i>20.6.Clarity of definitions of technical terms</i>			X	
<i>20.7. Using concrete examples to illustrate concepts</i>				X
<i>20.8.Redundancy of terms and sentences with no educational benefit.</i>				X

Illustrate by at least one example any indicator of criterion 2 given a score of less than 3

### 2.3 Number of concepts per chapter

Within each lesson in the chapter there is a large amount of concepts and ideas. For instance, the reptiles lesson includes the following headings and subheadings (pp38-46):

1. Characteristics of reptiles
  - a. Amniotic eggs
  - b. Dry, scaly skin
  - c. Respiration
  - d. Circulation
  - e. Feeding and digestion
  - f. Excretion
  - g. Brain and senses
  - h. Temperature control
  - i. Movement
  - j. Reproduction
2. Diversity of reptiles
  - a. Lizards and snakes
  - b. Turtles
  - c. Crocodiles and alligators
  - d. Tuataras
  - e. Dinosaurs
3. Ecology of reptiles
  - a. Habitat loss
  - b. Introduction of exotic species

These headlines do not include the number of ideas that are included within each subsection, which is also a huge number.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>33. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
33.1. <i>Illustrations</i>		X		
33.2. <i>Content</i>				X
33.3. <i>Activities</i>				X
33.4. <i>Practice Exercises(N/A)</i>				
33.5. <i>Assessment exercises</i>			X	
33.6. <i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 3 given a score of less than 3</p> <p><i>3.1 Illustrations</i></p> <p>On page 41, the picture shown of the snake's Jacobson's organ (figure 2-6) looks like the organ is on the outer part of the snake's mouth, whereas its actual location is on the roof of the snake's mouth. It also doesn't illustrate what is written in the text: it doesn't make it clear how the tongue of the snake is connected to Jacobson's organ and how this allows the snake to smell. In addition, the illustration on page 40 isn't very clear (figure 1-17). This same illustration was used to explain the circulation, excretion and feeding and digestion of reptiles and thus the different organs of these systems aren't clear. It would have been better to have one picture showing each of the different systems or to include a bigger clearer picture. Also, on page 39 there is an explanation of how reptiles respire, however, this was not accompanied with an illustration which makes the explanation difficult to imagine especially since there was the use of technical words in the text.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>34. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
34.1. <i>Illustrations</i>			X	
34.2. <i>Content</i>			X	
34.3. <i>Activities</i>				X
34.4. <i>Practice Exercises(N/A)</i>				
34.5. <i>Assessment exercises</i>				X
<p>Illustrate by at least one example any indicator of criterion 4 given a score of less than 3</p> <p><u>Extra notes:</u></p> <p><i>4.1. Illustrations</i></p> <p>Some of the types of birds or reptiles shown in the pictures are actually not found in The</p>				



Gulf States such as alligators. However, this was very minimal; the rest of the pictures are culturally relevant.

#### 4.2. Content

Although The Gulf States has a variety of reptiles (including snakes, turtles and lizards), in the section entitled “Diversity of Reptiles” on page 42 this was not mentioned. However, in the supplementary information provided at the end of the chapter, the article discussed the types of exotic birds that were introduced into KSA and the effect that this had on the ecosystem (which was part of the content of the chapter).

Comments and explanation on implementing the indicator.

*(stated above)*

Additional indicators and other comments.

*(mentioned in synthesis report)*





<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: Grade 11- Term 1			
		Textbook Title: الأحياء: ثانوي الصف الثاني الفصل الدراسي الأول قسم العلوم الطبيعية			
		Chapter Title: Chapter 4 Skeletal & Muscular Systems الجهازان الهيكلية والعضلي			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>29. Alignment of the translated texts to the philosophy of the original textbook</b>					
29.1.	<i>Content of the Chapter</i>			X	
29.2.	<i>Activities included in the chapter</i>				X
29.3.	<i>Learning objectives</i>		X		
29.4.	<i>Practice exercises(N/A)</i>				
29.5.	<i>Assessment exercises</i>		X		
29.6.	<i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><b>1.3 Learning objectives</b> The objectives emphasize low level thinking. For instance the learning objectives in “The Muscular System” lesson are (p. 101):</p> <ol style="list-style-type: none"> <li>1. <u>Describe</u> the three types of muscles.</li> <li>2. <u>Explain</u> what happens during muscle contraction.</li> <li>3. <u>Differentiate</u> between slow twitch and fast twitch muscles.</li> </ol> <p><b>1.5 Assessment exercises</b> A majority of the questions found in the end of the chapter exercises (for summative evaluation) focus on only knowledge and comprehension of the information presented in the lessons. For instance, the questions for the skeletal muscle lesson consist of the following items (pp 109-110):</p> <ul style="list-style-type: none"> <li>• Items 1-3: comparison between two scientific terms</li> <li>• Items 4-10: multiple choice</li> <li>• Items 11-13: short answer questions</li> <li>• Item 14: explaining a case study</li> <li>• Item 15: formulating a hypothesis</li> </ul> <p><u>Note:</u> Even items 14 and 15, which are found under the heading “critical thinking”, are not very difficult. For instance item 15 states: Formulate a hypothesis about what would happen if a woman didn’t take calcium supplements during pregnancy.</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>21. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>21.1.Length of sentences</i>				X
<i>21.2.Complexity of sentences</i>				X
<i>21.3.Diversity of language structures</i>			X	
<i>21.4.Number of concepts per chapter</i>	X			
<i>21.5.Reuse of technical terms in subsequent lessons and chapters</i>				X
<i>21.6.Clarity of definitions of technical terms</i>			X	
<i>21.7.Using concrete examples to illustrate concepts</i>			X	
<i>21.8.Redundancy of terms and sentences with no educational benefit.</i>				X
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><i>2.4 Number of concepts per chapter</i></p> <p>There are too many concepts and ideas presented within each of the two lessons in the chapter. There are many subheadings within each lesson, and within each subheading a large amount of information is presented. This is illustrated in the following example of the concepts found in the lesson entitled “The Skeletal System” (pp 94-100):</p> <ol style="list-style-type: none"> <li>1. Structure of the Skeletal System <ol style="list-style-type: none"> <li>a. Compact and spongy bone (this section introduces the following scientific ideas/terms: compact bone, spongy bone, osteocytes, Haversian systems, red bone marrow, yellow bone marrow)</li> <li>b. Formation of bone</li> <li>c. Remodeling of bone</li> <li>d. Repair of bone</li> </ol> </li> <li>2. Joints <ol style="list-style-type: none"> <li>a. Osteoarthritis</li> <li>b. Rheumatoid</li> <li>c. Bursitis</li> <li>d. Sprains</li> </ol> </li> <li>3. Functions of Skeletal System</li> </ol> <p>It should also be noted that all these concepts are presented in a very limited number of pages: “The Skeletal System” lesson is 7 pages while “The Muscular System” lesson is only 4 pages. Thus, not only is there a large amount of information, this information is presented very superficially. For example, on page 96 the formation of bone was explained in only one short paragraph.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>35. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
35.1. <i>Illustrations</i>		X		
35.2. <i>Content</i>			X	
35.3. <i>Activities</i>			X	
35.4. <i>Practice Exercises (N/A)</i>				
35.5. <i>Assessment exercises</i>				X
35.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.1 Illustrations

In some instances, an illustration should have been provided in order to clarify the idea or concept being presented in the text. For instance, on page 96, the process of how bone is formed and remodeled was being explained and some technical terms were being used, such as “osteoblast” and “osteoclast”. However, this was not accompanied with an illustration which makes it difficult to imagine what is being explained in the text. The same holds true for when the different types of fractures were being explained (p. 96).

### 3.2 Content (Extra note)

Although the content was clear throughout the majority of the chapter, the subsection entitled “skeletal muscle contraction” (p. 102) had some ambiguities mainly due to the brevity of the explanation provided. More specifically, the explanation of the roles of actin and myosin during muscular contraction and relaxation was very confusing. In addition, the explanation provided in the text wasn’t very aligned with the accompanied illustration (p. 103; figure 4-6) which made it difficult to follow-up with the steps illustrated in the picture.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>36. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
36.1. <i>Illustrations</i>				X
36.2. <i>Content</i>				X
36.3. <i>Activities</i>				X
36.4. <i>Practice Exercises(N/A)</i>				
36.5. <i>Assessment exercises</i>				X

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

### Note:

With regards to this particular chapter, all the different components of the books (including pictures, content, activities and assessment) were actually very culture neutral; therefore, there was no indication of any of the components being culturally irrelevant.



<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: Grade 11- Term 1			
		Textbook Title: الأحياء: ثانوي الصف الثاني الفصل الدراسي الأول قسم العلوم الطبيعية			
		Chapter Title: Chapter 5 The Nervous System الجهاز العصبي			
<i>Criterion/Indicator</i>		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>30. Alignment of the translated texts to the philosophy of the original textbook</b>					
30.1.	<i>Content of the Chapter</i>				X
30.2.	<i>Activities included in the chapter</i>			X	
30.3.	<i>Learning objectives</i>		X		
30.4.	<i>Practice exercises(N/A)</i>				
30.5.	<i>Assessment exercises</i>		X		
30.6.	<i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p>1.2 Learning objectives The focus is on lower level thinking as evident in the learning objectives taken from the lesson entitled “Effects of Drugs” (p. 128):</p> <ul style="list-style-type: none"> <li>• <u>List</u> the four ways that drugs can affect the nervous system.</li> <li>• <u>Describe</u> the different ways that drugs can harm the human body and lead to death.</li> <li>• <u>Explain</u> how someone can get addicted to drugs.</li> </ul> <p>1.5 Assessment exercises The assessment exercises found at the end of the chapter focus more on knowledge of facts which is apparent from the fact that most of the questions are either multiple choice or short answer (pp. 136-138). It would be better to include questions that require higher level thinking especially since the topic of the nervous system lends itself for this.</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>22. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
22.1. Length of sentences				X
22.2. Complexity of sentences				X
22.3. Diversity of language structures			X	
22.4. Number of concepts per chapter			X	
22.5. Reuse of technical terms in subsequent lessons and chapters				X
22.6. Clarity of definitions of technical terms		X		
22.7. Using concrete examples to illustrate concepts			X	
22.8. Redundancy of terms and sentences with no educational benefit.				X

Illustrate by at least one example any indicator of criterion 2 given a score of less than 3

**2.4 Number of concepts per chapter (extra note)**

The number of concepts in the whole chapter is a lot; however, the chapter is divided into three lessons. Thus, the number of concepts within each lesson is acceptable.

**2.6 Clarity of definitions of technical terms**

The new vocabulary words presented at the beginning of every lesson are adequately defined within the text. However, there are some additional scientific words that are not defined but are necessary for understanding the concepts. Examples of these words include stimulus ( المنبه; p. 116) and active transport ( النقل النشط; p. 118). In addition, the term stimulus is used as “المنبه” in the students’ book, but is used as “المثير” in the teacher’s guide.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>37. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
37.1. Illustrations			X	
37.2. Content		X		
37.3. Activities			X	
37.4. Practice Exercises (N/A)				
37.5. Assessment exercises				X
37.6. Skills				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.2 Content

Overall, there is a major drawback in the organization of the content and the way the concepts are introduced in this chapter which could lead to certain misconceptions.

- One major concept that wasn't adequately addressed was the distinction between a nerve and a neuron. The difference between a nerve and a neuron was actually mentioned in the *second* lesson (page 125) after the concept of a neuron was introduced in the first lesson (page 116). In fact, this distinction should have been made in the first lesson for the following reason: on page 118 of the first lesson the law of "all or none" was described and the sentence stated "the action potential follows the law of all or none". When stated this way, it is understood that the law of "all or none" applies regardless of whether the structure is a nerve or neuron (and this is especially true since in the text it wasn't emphasized that this law only applies to a neuron).
- Another possible source of misconceptions has to do with the type of neurons. The illustration presented on page 116 shows the different parts of a *multipolar* neuron. And the text that corresponds to this picture mentions that neurons have many dendrites as shown by the following statement: "the cell body contains more than one group of dendrites" (p. 116). Then, in the subsequent paragraph, it is immediately mentioned that "there are three types of neurons: sensory neuron, interneuron and motor neuron" (p. 17). This leads to the understanding that *all* neurons have the multipolar structure. It should have been stated that there are different structures for a neuron; i.e. bipolar, unipolar and multipolar and that the sensory neuron is in fact a *unipolar* neuron.
- It would have been better conceptually if the second lesson "Organization of the Nervous System" (p. 122) came *first* before the lesson "Structure of the Nervous System" (p. 116).

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>38. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
38.1. <i>Illustrations</i>				X
38.2. <i>Content</i>				X
38.3. <i>Activities</i>		X		
38.4. <i>Practice Exercises (N/A)</i>				
38.5. <i>Assessment exercises</i>				X

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

#### 4.3 Activities

The activity on page 131 has to do with comparing brain scans of a teenager that drinks alcohol with a teenager that doesn't drink alcohol. Drinking alcohol is something against the Gulf States culture. In fact, the sentence that came immediately before this activity was a statement of an "aya" taken from the "Holy Quran" prohibiting the drinking of alcohol. (The activity could have been included for the purpose of discouraging The Gulf States teenagers to drink.)

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: Grade 11- Term 2			
		Textbook Title: الأحياء: ثانوي الصف الثاني الفصل الدراسي الثاني قسم العلوم الطبيعية			
		Chapter Title: Chapter 9 Immune System جهاز المناعة			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>31. Alignment of the translated texts to the philosophy of the original textbook</b>					
31.1.	<i>Content of the Chapter</i>			X	
31.2.	<i>Activities included in the chapter</i>				X
31.3.	<i>Learning objectives</i>		X		
31.4.	<i>Practice exercises(N/A)</i>				
31.5.	<i>Assessment exercises</i>		X		
31.6.	<i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><i>1.3 Learning objectives</i> The learning objectives for this lesson are of lower level thinking and they are as follows (p. 68):</p> <ul style="list-style-type: none"> <li>• Compare the specific immune response and the non-specific immune response.</li> <li>• Summarize the structures of the lymphatic system and their functions.</li> <li>• Differentiate between passive and active immunity.</li> </ul> <p><i>1.5 Assessment exercises</i> The exercises found at the end of the chapter do not require a high level of critical thinking, although the topic of immunity lends itself for higher level thinking. For example, the questions that are found under the heading “critical thinking” are the following (p. 81):</p> <ul style="list-style-type: none"> <li>• Compare the roles of the T-killer cells and T-helper cells in the specific immune response.</li> <li>• List the steps of an immune response against the invasion of the tetanus bacteria.</li> </ul> <p>More complex assessment exercises could involve issues related to vaccination or primary and secondary immune responses, such as asking students to analyze experiments done on mice or rabbits.</p>					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>23. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>23.1.Length of sentences</i>		X		
<i>23.2.Complexity of sentences</i>			X	
<i>23.3.Diversity of language structures</i>		X		
<i>23.4.Number of concepts per chapter</i>	X			
<i>23.5.Reuse of technical terms in subsequent lessons and chapters</i>	X			
<i>23.6.Clarity of definitions of technical terms</i>		X		
<i>23.7.Using concrete examples to illustrate concepts</i>		X		
<i>23.8.Redundancy of terms and sentences with no educational benefit.</i>			X	
<p>Illustrate by at least one example any indicator of criterion 2 given a score of less than 3</p> <p><i>2.1 Length of sentences</i>            There are many long sentences in this chapter. An example is a sentence found on page 69: “There are about 20 different proteins found in the blood plasma which aid in the process of phagocytosis, and these proteins are called complementary proteins and they facilitate the process of phagocytosis by helping the macrophages bind better to the foreign body which causes activation of the macrophages and facilitates the process of destroying the plasma membrane of the foreign body” (this is a literal translation; the Arabic version was 4.5 lines long).</p> <p><i>2.3 Diversity of language structures</i>            Most of the sentences in this chapter begin with a verb (جمل فعلية). For example, in the last paragraph on page 70, 5 out of 6 of the sentences began with a verb.</p> <p><i>2.4 Number of concepts per chapter</i>            There are too many concepts found in the chapter and they are presented in less than 10 pages. The following is a list of the main headings and subheadings (pp 68- 76):</p> <p>A. Non-specific immunity</p> <ol style="list-style-type: none"> <li>1. Barriers               <ol style="list-style-type: none"> <li>a. Skin barrier</li> <li>b. Chemical barriers</li> </ol> </li> <li>2. Non-specific responses to invasion               <ol style="list-style-type: none"> <li>a. Cellular defense</li> <li>b. Interferons</li> <li>c. Inflammatory response</li> </ol> </li> </ol> <p>B. Specific Immunity</p> <ol style="list-style-type: none"> <li>1. Lymphatic system</li> <li>2. Lymphatic organs</li> <li>3. B-cell response (antibodies, B-cells, helper T cells, antigen)</li> </ol>				

4. T-cell response
- C. Passive and active immunity (including immunization)
- D. Immune system failure (HIV/AIDS)

It would be better if the whole chapter was divided into individual lessons by grouping together the subheadings that deal with the same concept. For instance, the lessons could be as follows: 1) non-specific immunity, 2) specific immunity and 3) passive and active immunity and immune system failure.

#### *2.5 Reuse of technical terms in subsequent lessons and chapters (in this case, within the same chapter) & 2.6 Clarity of definitions of technical terms*

Throughout the course of this chapter, there were about 9 different terms that were used when referring to a “foreign body”. These terms were presented randomly throughout the chapter without the provision of a definition. The terms used were the following:

فيروس , بكتيريا , العدوى , المخلوقات الحية الدقيقة , المخلوقات الدقيقة الغريبة , المخلوقات الغريبة , مسببات المرض , الجسم المضاد , مولدات الضد الغريبة

The term مسببات المرض was used first and then the other variations of the word were used throughout the rest of the chapter with no particular consistent pattern. It would have been ideal if there was a section at the beginning of the chapter that discusses what is meant by “المخلوقات الغريبة”. For example, it could be explained that the term “foreign body” has many synonyms and that it includes organisms such as viruses, bacteria... This way when all the different variations of the term are used, students will know that they are all referring to the same concept.

#### *2.7 Using concrete examples to illustrate concepts*

The concepts presented in this chapter are given in the form of scientific information/facts, without providing examples to illustrate that information. For example, on page 70, during the explanation of the steps of the inflammatory response they could have described each of the steps by referring to what a person actually sees when they are wounded. For example, it could be mentioned that the redness observed is due to the flow of blood to the infected area. Another example of where a concrete example could have been given is when the process of binding of the antigen to the antibody was being explained (p. 71): they could have provided the lock and key analogy to clarify the meaning. Even in the teacher’s guide, there weren’t any tips of how to make the concepts more tangible to students. The use of concrete examples would make the comprehension of this chapter much easier.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>39. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
39.1. <i>Illustrations</i>		X		
39.2. <i>Content</i>		X		
39.3. <i>Activities</i>			X	
39.4. <i>Practice Exercises(N/A)</i>				
39.5. <i>Assessment exercises</i>			X	
39.6. <i>Skills</i>			X	

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.1 Illustrations

There are two shortcomings with regards to the illustrations in this chapter. The first is the *absence* of illustrations: a couple of the concepts would have been much clearer if the explanation in the text had been accompanied with a corresponding picture. One such example is the explanation of the inflammatory response on page 70: the steps of the response would have been made much more comprehensible if there had been an illustration. Another example is on page 69 in which the explanation of the process of phagocytosis should have also included a corresponding picture.

Another shortcoming has to do with the clarity and accuracy of the already existing illustrations. More specifically, on page 75 the graph showing the differences between the primary and secondary responses is very small and is thus not very clear. In addition, the labeling of the illustration shown on page 72 (figure 9-4) is inconsistent with what the text represents; i.e. the text states that the illustration depicts the B-cell response and the T-cell response, however, the labeling on the illustration says “T-cell response” and “Anti-body response” (another example of the interchangeable use of terms). This makes it kind of confusing for one that is trying to read the text and follow up with the illustration. Also, in this same illustration it is shown that B-cells form memory cells while it does not show that T-cells also form memory cells.

### 3.2 Content

One of the issues is related to the use of technical terms as mentioned in part 2.5. Another shortcoming in the content is the fact that the ideas are not systematic and organized which creates a lot of confusion. Also, the way things are worded can create misconceptions. The following is a literal translation of an excerpt taken from page 71 where the B-cell response is being explained:

“Antibodies are proteins that are produced by B-cells found in the plasma which bind specifically to foreign antigens. An antigen is a substance that is foreign to the body (misconception) which leads to an immune response and it can bind to a B-cell or macrophage. B-cells are found all around the lymphatic vessels, and they can be characterized as antibody producing cells. During the presence of any disease causing substance the B-cells start to produce antibodies...etc”

In addition to being disorganized, there is no clear conceptual link between the different parts

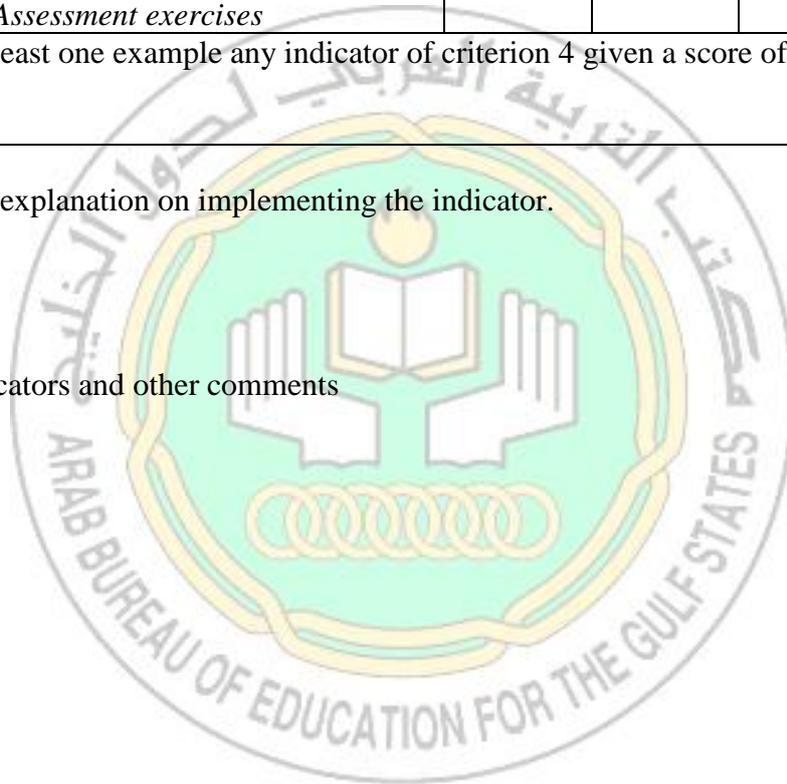
of the chapter and this is mainly due to the fact that the scientific terms weren't defined adequately from the beginning.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>40. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
40.1. <i>Illustrations</i>				X
40.2. <i>Content</i>				X
40.3. <i>Activities</i>				X
40.4. <i>Practice Exercises(N/A)</i>				
40.5. <i>Assessment exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

(stated above)

Additional indicators and other comments





<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: Grade 11- Term 2			
		Textbook Title: الأحياء: ثانوي الصف الثاني الفصل الدراسي الثاني قسم العلوم الطبيعية			
		Chapter Title: Chapter 11 Plant Structure & Function تركيب النبات ووظائف أجزائه			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>32. Alignment of the translated texts to the philosophy of the original textbook</b>					
32.1.	<i>Content of the Chapter</i>				X
32.2.	<i>Activities included in the chapter</i>				X
32.3.	<i>Learning objectives</i>			X	
32.4.	<i>Practice exercises(N/A)</i>				
32.5.	<i>Assessment exercises</i>			X	
32.6.	<i>Skills</i>			X	
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					

		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>24. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
24.1.	<i>Length of sentences</i>				X
24.2.	<i>Complexity of sentences</i>				X
24.3.	<i>Diversity of language structures</i>			X	
24.4.	<i>Number of concepts per chapter</i>			X	
24.5.	<i>Reuse of technical terms in subsequent lessons and chapters</i>				X
24.6.	<i>Clarity of definitions of technical terms</i>				X
24.7.	<i>Using concrete examples to illustrate concepts</i>			X	
24.8.	<i>Redundancy of terms and sentences</i>				X



<i>with no educational benefit.</i>				
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>41. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
41.1. <i>Illustrations</i>				X
41.2. <i>Content</i>				X
41.3. <i>Activities</i>			X	
41.4. <i>Practice Exercises(N/A)</i>				
41.5. <i>Assessment exercises</i>				X
41.6. <i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>42. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
42.1. <i>Illustrations</i>				X
42.2. <i>Content</i>			X	
42.3. <i>Activities</i>			X	
42.4. <i>Practice Exercises(N/A)</i>				
42.5. <i>Assessment exercises</i>			X	

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

(Explanation of why “almost satisfactory evidence” was chosen)

#### 4.2 Content

Although there was no evidence of cultural irrelevance in the content, some references to the types of plants found in The Gulf States could have been made throughout the chapter. For instance, on page 115 there is a discussion about how a plant reserves water. Here there could have been a discussion about the types of desert plants found in The Gulf States and the characteristics of these plants that help them to reserve water (in relation to what was mentioned in the chapter: for example thick cuticle... etc).

#### 4.3 Activities

In an activity mentioned on page 120 of this chapter, there was reference to a type of plant that is most probably not found in The Gulf States which is the “venus fly trap”; students were asked to determine the mechanism in which this plant detects the presence of an insect on its leaves.



#### 4.5. Assessment exercises

In the end of the chapter exercises, the last exercise on page 129 refers to a pine tree, which is also a tree that is most probably not found in The Gulf States.

Comments and explanation on implementing the indicator.

(stated above)

Additional indicators and other comments.

(none)





<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: Grade 11- Term 2			
		Textbook Title: الأحياء: ثانوي الصف الثاني الفصل الدراسي الثاني قسم العلوم الطبيعية			
		Chapter Title: Chapter 12 Plant Reproduction التكاثر في النباتات			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>33. Alignment of the translated texts to the philosophy of the original textbook</b>					
33.1.	<i>Content of the Chapter</i>				X
33.2.	<i>Activities included in the chapter</i>				X
33.3.	<i>Learning objectives</i>			X	
33.4.	<i>Practice exercises(N/A)</i>				
33.5.	<i>Assessment exercises</i>			X	
33.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>25. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
25.1.	<i>Length of sentences</i>				X
25.2.	<i>Complexity of sentences</i>				X
25.3.	<i>Diversity of language structures</i>				X
25.4.	<i>Number of concepts per chapter</i>			X	
25.5.	<i>Reuse of technical terms in subsequent lessons and chapters</i>				X
25.6.	<i>Clarity of definitions of technical terms</i>				X
25.7.	<i>Using concrete examples to illustrate concepts</i>				X
25.8.	<i>Redundancy of terms and sentences with no educational benefit.</i>				X
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>43. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
43.1. <i>Illustrations</i>			X	
43.2. <i>Content</i>				X
43.3. <i>Activities</i>				X
43.4. <i>Practice Exercises(N/A)</i>				
43.5. <i>Assessment exercises</i>				X
43.6. <i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				
<p><u>Note:</u>  <b>3.1 Illustrations</b>            The only improvement here is for figure 12-1 on page 134 which is supposed to represent the different parts of a flower: there are some parts of the flower that are mentioned in the corresponding text but are not labeled on the illustration. Thus, it is difficult to imagine the parts of the flower without seeing it on the picture.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>44. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
44.1. <i>Illustrations</i>				X
44.2. <i>Content</i>				X
44.3. <i>Activities</i>				X
44.4. <i>Practice Exercises(N/A)</i>				
44.5. <i>Assessment exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				
<p><u>Note:</u>  <b>4.3 Activities</b>            On page 147, there is a “supplementary science” page which deals with the issue of genetically modified plants. Although this is something that is culturally relevant to The Gulf States, there was no reference to it on the page. At the end of the article, students are asked to debate with or against genetically modified plants. It would have been useful if a description of the policies and status of genetically modified plants in The Gulf States was mentioned.</p>				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



## Synthesis Report for Biology Book Grade 11- Term 1

### Criterion 1: Alignment of the translated texts to the philosophy of the original textbook

Overall, a majority of the criteria mentioned in the book's philosophy were met, whether through the content, activities or assessment exercises. First, the philosophy of the book emphasizes the role of the teacher in acting as a guide and following up on students' understanding. This is something which is reflected in the various methods of assessment found in the teacher's guide and the students' book. In the students' book, there are three types of assessments: reading checks which are periodical questions asked within the text for students to monitor their understanding as they read, formative assessments which are questions found at the end of each lesson in a chapter and finally the summative assessment at the end of each chapter. With respect to the teacher's guide, additional assessment activities are suggested at the end of each lesson in order to help teachers to determine the extent of students' understanding.

There were several other areas of strength with regards to this criterion. One positive point is the fact that, as claimed in the philosophy, the book provides students with different ways of acquiring information on their own such as through reading text, analyzing/reading illustrations, performing lab activities, having classroom demonstrations and doing research presentations. Another positive point is the "supplementary science" page found at the end of every chapter which provides students with a relation between the content of the chapter to some society or technology related issue (within the realm of science). The latter is in fact another standard mentioned in the philosophy of the book. A final positive point has to do with the fact that links to other science-related subjects were made throughout the lessons, which is also something mentioned in the book's philosophy. However, there is one small comment worth noting here which is that although links to other science-related subjects were evident in some chapters, they were done very sparingly. In other words, more relations could have been made. For instance, links to health sciences could have been made in the "Skeletal and Muscular Systems" chapter and links to physics could have been made in the "birds" lesson when the mechanism of bird flight was being explained.

One major area of weakness with respect to this criterion was the focus on lower level thinking in the learning objectives and assessment exercises. The philosophy of the book states that one of the aims of this book is to help students acquire knowledge and *skills*. Although the skills weren't specified, it can be inferred that they should involve higher order thinking. The learning objectives mainly focus on the knowledge level which is apparent from the use of verbs such as "list", "describe", "explain", "summarize"...etc Nevertheless, this drawback is counterbalanced by the fact that the other components, namely the content, activities and skills, address higher order thinking skills such as drawing conclusions, making hypotheses, designing experiments and engaging in inquiry. Thus, to improve the learning objectives, it would just be a matter of actually stating the critical thinking skills as part of the objectives of each lesson. With regards to the assessment exercises, however, more emphasis should be made on higher thinking skills. Most of the summative assessment exercises focus on factual knowledge of the content through multiple choice or short answer questions. Even the questions found under the heading "critical thinking" are not very difficult, especially considering the fact that this book is for Grade 11 students. It should be mentioned at this point that the book's philosophy did not explicitly state what specific skills it aims to address. Had there been better specification of what the skills are, the learning objectives would have



been easier to write and it would have been easier to see the alignment between the objectives and the skills reflected in the content, activities and assessment of the chapter.

*Criterion 2: Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students*

A major positive point in this section was that the language used in the books was easy to understand in which the level of difficulty of the vocabulary and the complexity of the sentences was average. This allows students of various aptitude levels to understand the text easily. In addition, there was consistency in the use of scientific technical terms within the lessons themselves, across the different lessons in a chapter and across the different chapters. Also, with the exception of a couple of terms found in the “Nervous System” lesson, the scientific terms were adequately defined. Finally, there was very little repetition and the presence of unnecessary details was very scant.

On the other hand, a key issue in this section is regarding the “number of concepts per chapter” whereby there was a large amount of concepts presented in a limited number of pages. In fact, most of the information presented in the chapters was dealt with very superficially. Two possible modifications to this could be made. One suggestion is to decrease the number of concepts by eliminating some of them; this would allow a smaller number of concepts to be dealt with more in-depth. Another suggestion, would be to divide each/lesson or chapter into smaller lessons/sub-lessons.

*Criterion 3: Suitability of the Arabization of the translated textbooks to serve the math and science concepts*

Generally speaking, the Arabization was suitable for the science concepts presented in the chapters of this book. A major positive point is the fact that the activities found in the teacher’s guide involve a lot of writing: this not only enhances writing skills in science but it also enhances students’ creativity, which is actually another standard mentioned in the book’s philosophy. In addition, there was a frequent use of concept maps to organize the content of the chapters and/or lessons.

However, there are two minor shortcomings in this criterion. One of the issues was that some concepts that were being explained in the text were not accompanied with illustrations (see evaluation forms for examples of such instances); the inclusion of illustrations in these cases would have made the explanation in the text much clearer and tangible to students. However, with the exception of the ones mentioned in the evaluation form, the rest of the illustrations are clear and serve the purpose of clarifying the content of the text. The other shortcoming has to do with the content whereby there was a lack of organization and clarity in the presentation of ideas. This was especially true in the chapter “The Nervous System”. In this chapter, the misuse of certain terms and expressions could lead to the creation of misconceptions. In addition, the sequence in which the concepts were presented wasn’t very organized and coherent which may lead to confusion in understanding.

Another point worth mentioning is that although the activities found in the students’ book and the teacher’s guide encourage higher level thinking, a lot of them rely too much on reading from the text or from the illustrations. There is no use of technological sources such as animations or illustrations on transparencies or PowerPoint presentations, which could actually be very helpful for explanation of concepts. Also, a lot of the activities presented in the teacher’s guide are things that can be done *after* explanation of concepts; there are very few suggestions on how to actually teach the content.



#### Criterion 4: Suitability of the translated textbooks to the cultural context of The Gulf States

Most of the content, illustrations, assessment exercises and activities are actually culturally neutral, with the exception of the specific cases mentioned in the evaluation forms. There are some references to certain aspects of the Gulf States context; however, this is done very minimally. Thus, it is advisable to integrate aspects of the Gulf States culture more frequently.

#### Additional comments:

There are a few other positive and negative aspects of the book which were not addressed earlier and which are worth mentioning. Some constructive things that are done in the chapters are:

- inclusion of a list of interesting factual information at the beginning of each chapter relating to the content of the chapter
- making relations between the content of the chapter to some aspect of students' life at the beginning of each chapter
- inclusion of a revision guide at the end of each chapter which contains all the summaries and new technical words found throughout the lessons.
- Inclusion of "reading checks" which are intermittent questions asked throughout the readings and aim at providing students with a means of monitoring their understanding.

A couple of negative points include the following:

- The summaries provided are too brief and do not reflect all the main ideas found in text. For instance, the following is the summary found at the end of the "Reptiles" lesson (p. 46):
  1. Reptiles have many adaptations that allow them to live on land.
  2. Reptile eggs are adapted for growing and living on land.
  3. There are four types of reptiles: lizards and snakes, alligators and crocodiles, sea and land turtles and the tuataras.
  4. Reptiles are amniotic animals and many of them, including dinosaurs, are extinct.

This summary leaves out a lot of important main ideas found in the lesson. In fact, bullet point #1 is exactly identical to the "main idea" presented at the beginning of the lesson (p. 38). If students wanted to use the summary for revision purposes, it wouldn't provide them with a very accurate picture about the main points of the lesson.

- The scientific terms provided in the study guide are presented *without* definitions. It would be more ideal if the scientific terms were given with their definitions as a reference for students.
- The use of the "reading checks" is not consistent: there were three of them in the "reptiles" lesson and there weren't any in the "birds" lesson.



## Synthesis Report for Biology Book Grade 11- Term 2

**N.B. Overall, the comments for this book are very similar to those of the first book; thus, some were copied from the first report and a few additional comments were made (in red).**

### Criterion 1: Alignment of the translated texts to the philosophy of the original textbook

Overall, a majority of the criteria mentioned in the book's philosophy were met, whether through the content, activities or assessment exercises. First, the philosophy of the book emphasizes the role of the teacher in acting as a guide and following up on students' understanding. This is something which is reflected in the various methods of assessment found in the teacher's guide and the students' book. In the students' book, there are three types of assessments: reading checks which are periodical questions asked within the text for students to monitor their understanding as they read, formative assessments which are questions found at the end of each lesson in a chapter and finally the summative assessment at the end of each chapter. With respect to the teacher's guide, additional assessment activities are suggested at the end of each lesson in order to help teachers to determine the extent of students' understanding.

There were several other areas of strength with regards to this criterion. One positive point is the fact that, as claimed in the philosophy, the book provides students with different ways of acquiring information on their own such as through reading text, analyzing/reading illustrations, performing lab activities, having classroom demonstrations and doing research presentations. Another positive point is the "supplementary science" page found at the end of every chapter which provides students with a relation between the content of the chapter to some society or technology related issue (within the realm of science). The latter is in fact another standard mentioned in the philosophy of the book. A final positive point has to do with the fact that links to other science-related subjects were made throughout the lessons, which is also something mentioned in the book's philosophy. However, there is one small comment worth noting here which is that although links to other science-related subjects were evident in some chapters, they were done very sparingly. In other words, more relations could have been made.

Although the learning objectives and assessment exercises were a major area of weakness in the first book (term 1), this weakness was only evident in one of the chapters in this book (term 2), namely the "Immune System" chapter. In this chapter, the learning objectives and assessment exercises focused on lower level thinking. Since the content and the activities actually emphasize higher level thinking, the only modification that needs to be made for the learning objectives is to merely state objectives that reflect the higher level thinking in the content and the activities. However, there should be assessment exercises that require higher level thinking, especially since the topic of the immune system lends itself for this.

### Criterion 2: Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students

The language used in the two chapters dealing with plants (i.e. chapters 11 and 12) is characterized by its simplicity in terms of its sentence structure and use of vocabulary. In addition, the flow of ideas was very coherent and there was very little repetition. There was



also consistency in the use of scientific technical terms within the lessons themselves, across the different lessons in a chapter and across the different chapters. Finally, even the number of concepts in the chapters is acceptable especially in comparison to the chapters in the first book (term 1).

However, the above does not apply to the “Immune System” chapter in which there are a large number of weaknesses. Two of the biggest weaknesses are the large number of concepts that were presented and the lack of consistency in the use of scientific terms. Other weaknesses include the lack of clarity in the definition of terms, the use of long sentences and the uniformity in sentence structure.

*Criterion 3: Suitability of the Arabization of the translated textbooks to serve the math and science concepts*

Again, the weaknesses in this criterion are found only in the “Immune System” chapter. While the plant chapters are characterized by clearly presented content and illustrations that serve the purpose of clarification, the immune system chapter is characterized by disorganization of ideas, lack of clarity in the illustrations and the use of wordings that can create misconceptions.

With respect to the other indicators in this criterion, namely activities, assessment exercises and skills, the Arabization was suitable for the science concepts presented in all the three evaluated chapters. A major positive point is the fact that the activities found in the teacher’s guide involve a lot of writing: this not only enhances writing skills in science but it also enhances students’ creativity, which is actually another standard mentioned in the book’s philosophy. In addition, there was a frequent use of concept maps to organize the content of the chapters and/or lessons.

Another point worth mentioning is that although the activities found in the students’ book and the teacher’s guide encourage higher level thinking, a lot of them rely too much on reading from the text or from the illustrations. There is no use of technological sources such as animations or illustrations on transparencies or powerpoint presentations, which could actually be very helpful for explanation of concepts. Also, a lot of the activities presented in the teacher’s guide are things that can be done *after* explanation of concepts; there are very few suggestions on how to actually teach the content.

*Criterion 4: Suitability of the translated textbooks to the cultural context of The Gulf States*

Most of the content, illustrations, assessment exercises and activities are actually culturally neutral, with the exception of the specific cases mentioned in the evaluation forms. There are some references to certain aspects of the Gulf States context; however, this is done very minimally. Thus, it is advisable to integrate aspects of the Gulf States culture more frequently.

*Additional comments:*

There are a few other positive and negative aspects of the book which were not addressed earlier and which are worth mentioning. Some constructive things that are done in the chapters are:

- inclusion of a list of interesting factual information at the beginning of each chapter relating to the content of the chapter

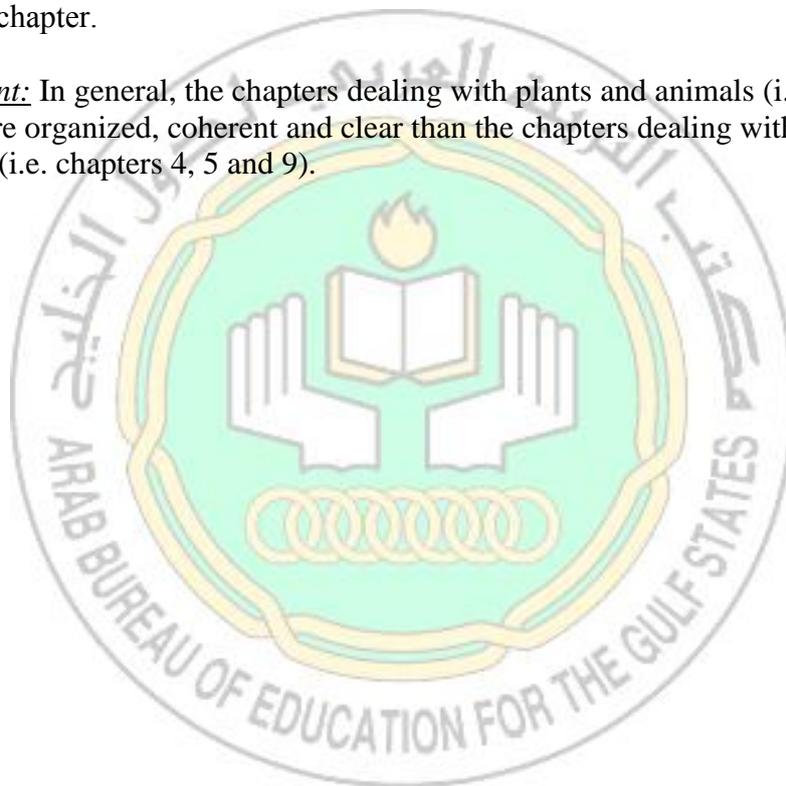


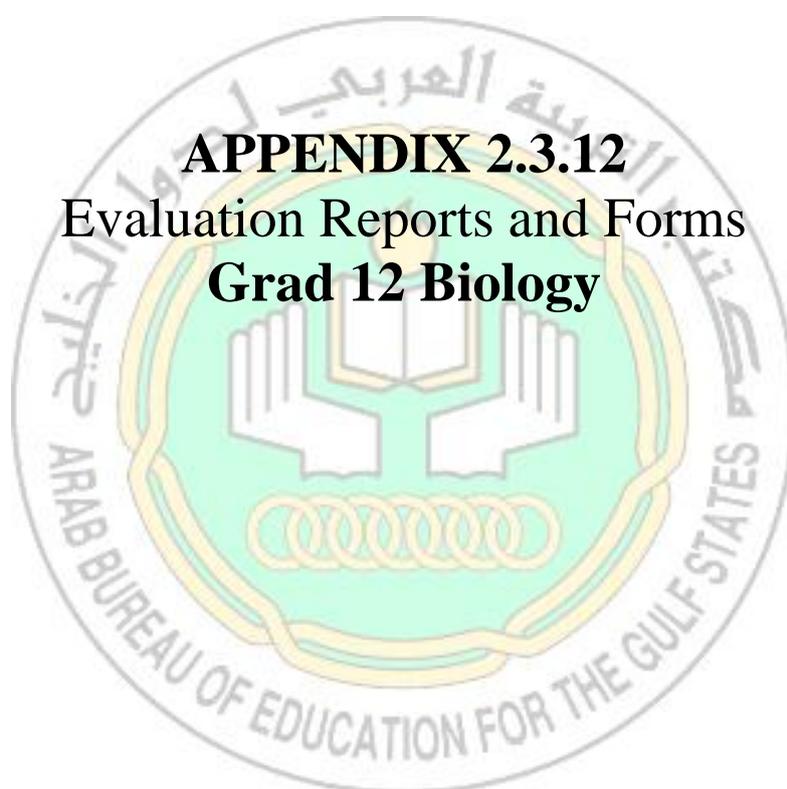
- making relations between the content of the chapter to some aspect of students' life at the beginning of each chapter
- inclusion of a revision guide at the end of each chapter which contains all the summaries and new technical words found throughout the lessons.
- Inclusion of “reading checks” which are intermittent questions asked throughout the readings and aim at providing students with a means of monitoring their understanding.

A couple of negative points include the following:

- The summaries provided are too brief and do not reflect all the main ideas found in text.
- The scientific terms provided in the study guide are presented *without* definitions.
- Very little use of the “reading checks”: once in the “Immune System” chapter, twice in the “Plant Structure and Function” chapter and once in the “Reproduction in Plants” chapter.

Overall comment: In general, the chapters dealing with plants and animals (i.e. chapters 2, 11 and 12) are more organized, coherent and clear than the chapters dealing with the human bodily systems (i.e. chapters 4, 5 and 9).





**APPENDIX 2.3.12**  
**Evaluation Reports and Forms**  
**Grad 12 Biology**



<b>Book Evaluation Form</b>		Subject: Biology				
		Grade: 12	Semester: 1			
		Textbook Title: الأحياء: ثانوي الصف الثالث الفصل الدراسي الأول				
		Chapter Title: الأول الفصل الخلية تركيب ووظائفها				
		Completely different	Large difference	Little difference	Difference due only to culture	No difference
<b>Criterion/Indicator</b>						
<b>34. Agreement of the translated Arabic book with that of the English book</b>						
34.1.	Definitions and explanations in the chapter			X		
34.2.	Activities included in the chapter			X		
34.3.	Learning objectives					X
34.4.	Practice exercises (N/A)					
34.5.	Assessment exercises			X		
34.6.	Figures, pictures and illustrations				X	

**Note:**

Anything highlighted in the photocopied chapters represents *differences* between the English and Arabic version. The following is a key for the color coding in the chapters:

- *Pink* highlights: difference in learning objectives
- *Blue* highlights: difference in content or explanation
- *Yellow* highlights: difference in activities
- *Orange* highlights: difference in illustrations

**1.1 Definitions and explanations in the chapter**

In general, there were only a few differences in the definitions and explanations between the Arabic and English versions. One of the differences is that a couple of the analogies found in the English version were not used in the Arabic one. For instance, the analogy of a factory is used to explain the different parts of the cell and their functions; however, this was not included in the Arabic version.

In addition, there were a couple of minor details mentioned in the English version but were not mentioned in the Arabic one. However, they did not significantly affect the overall scientific meaning. Two major sections were found in the English version but not in the Arabic one which include “comparing cells” (page 200) and “three dimensional protein structure” (page 170). There were two instances where additional details were found in the *Arabic* version but this did not affect the overall scientific meaning.



Finally, in a couple of instances there was an inaccurate translation from English to Arabic: phosphate-containing group (page 188) is translated as “مجموعة فوسفات” (page 13) which translates to “a group of phosphates”. This is an inaccurate portrayal of the correct scientific meaning. Also, on page 191 of the English version, it is stated that microtubules and microtubules allow **cells and organelles** to move, however, the Arabic version states that they allow **cells** to move” (page 17).

### 1.2. Activities included in the chapter

All the activities found in the Arabic version are identical to those found in the English version. However, there are *two* minor differences. First, the Minilab entitled “Investigate Enzymatic Browning” on page 159 of the English version is not found in the Arabic version. In addition, the “foldables” exercise found at the beginning of the chapter as a start-up activity is found in both the English and Arabic versions, however, each of them deals with different content. The English version deals with cellular transport (page 181) while the Arabic version deals with enzymes (page 9). This is due to the fact that the topic of cellular transport is not part of the content of the Arabic chapter.

### 1.3. Learning Objectives

The learning objectives found in the Arabic version are exactly identical to those found in the English version.

### 1.4. Practice exercises (N/A)

There are no practice exercises in this book.

### 1.5. Assessment exercises

Most of the assessment exercises found at the end of each lesson and at the end of the chapter are exactly identical to those found in the English version. There were only two exercises that were omitted in the Arabic version. These include:

- Page 200 “Make a flowchart comparing the parts of a cell to an automobile production line”.
- The additional assessment exercise found on page 213.

In addition, although the Arabic version of the chapter includes a section about the four types of macromolecules (proteins, lipids, carbohydrates and nucleic acids) there are no assessment exercises at the end of the chapter that correspond to this. The English version includes several exercises for this topic on page 177.

### 1.6. Figures, pictures and illustrations

The figures and illustrations found in the Arabic version are almost exactly identical to those found in the English version. There is only one difference in the illustration found at the beginning of the chapter where the hand of a woman in the English version (page 180) is replaced with the hand of a boy in the Arabic version (page 8).



## Philosophy for Grade 12 Biology Book (Term 1)

This is the sixth book in the Biology series for the high school level and we hope that it will cater to our students' needs in terms of **knowledge and skills acquisition**. This book is part of a comprehensive project that aims at a substantial improvement of the science curriculum. One of the features of this improvement is to provide students with **opportunities to acquire information on their own using a variety of different methods including: reading passages, summaries, side margins or paragraphs relating to other science subjects, looking at pictures and concept maps or performing hands-on activities.**

This book is characterized by **fluidity in the way things are presented**. In addition, it **provides many examples that make the presented ideas clearer to students**. At the same, the book **avoids repetition without being too concise so as to avoid loss of meaning or vagueness of ideas**.

The **role of the teacher is to offer guidance** in the educational process without losing his/her role in **providing students with supplementary examples to clarify the presented ideas**. The teacher also has a role in **following up with students' understanding and learning and with providing support for students' creative abilities**.

This book consists of six chapters that deal with cellular biology, genetics and reproduction. The first chapter discusses the cell in terms of structure and function. The second chapter deals with cellular energy as important building blocks of life and how living organisms obtain their energy through photosynthesis and cellular respiration. The third chapter discusses cellular division while the remaining chapters (4, 5, and 6) deal with reproduction and heredity. We aim for students to know the basics of Biology and how **it is applied to their daily lives**.

This book contains illustrations that facilitate comprehension of the structures and functions of a cell. This book also includes **inquiry, experiments and relations to society and technology**. Finally, each chapter provides links to **innovations in science and relates to issues in biotechnology** especially in heredity.



<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: 12 –Term 1			
		Textbook Title: الأحياء: ثانوي الصف الثالث الفصل الدراسي الأول			
		Chapter Title: Chapter 2 Cellular Energy الطاقة الخلوية			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>35. Alignment of the translated texts to the philosophy of the original textbook</b>					
35.1.	<i>Content of the Chapter</i>		X		
35.2.	<i>Activities included in the chapter</i>				X
35.3.	<i>Learning objectives</i>		X		
35.4.	<i>Practice exercises (N/A)</i>				
35.5.	<i>Assessment exercises</i>		X		
35.6.	<i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 1 given a score of less than 3</p> <p><b>1.2. Content of chapter</b></p> <p>The philosophy of the book states that the information found in the chapters is linked to other science-related subjects, to students' daily lives and to society and technology. However, the relation to other science-related subjects was done very minimally (twice throughout the whole chapter: on pages 49 and 63). More links could have been made. For instance, the concepts of energy and the laws of thermodynamics presented on page 46 could have been related to physics. Also, no relations between the chapter and issues in society and technology were made. A suggestion here could be to link using the metabolism of bacteria to clean wastes (bioremediation). In addition, lactic acid fermentation and alcohol fermentation could be linked to food manufacture. Finally, there was very minimal relation to students' daily lives. For instance, one suggestion is to relate the metabolism of yeast to its use in cakes and dough.</p> <p>Another negative point is that the philosophy states that the "supplementary science" page is supposed to link the content of the chapter to current issues in science. However, the information on page 66 is not relevant to the content of the chapter; it discusses intercellular junctions (tight junctions, desmosomes, gap junctions and plasmodesmata) while the topic of the chapter is cellular energy.</p> <p><b>1.3. Learning objectives</b></p> <p>The learning objectives in this chapter emphasize lower level thinking which is contrary to the aims mentioned in the philosophy. For instance, the objectives presented below are those found in lesson 1 (page 46) of this chapter:</p>					



- Summarize the laws of thermodynamics
- Compare between autotrophs and heterotrophs.
- Describe the mechanism of action of ATP.

### 1.5. Assessment exercises

The exercises in this chapter, specifically the summative assessment found at the end of the chapter, focus too much on knowledge and comprehension of the material; they require no thinking beyond the actual material presented in the chapter. Even the critical thinking questions do not really require critical thinking since they require answers that students would have been exposed to already during the chapter. For instance, on page 69, the following questions are found under the heading “critical thinking”:

1. Explain how energy is released from an ATP molecule (a description of this is provided on pages 49-50).
2. Relate catabolic and anabolic reactions then explain how this applies to photosynthesis and cellular respiration (an explanation of this is presented on page 48).

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>26. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
26.1. <i>Length of sentences</i>				X
26.2. <i>Complexity of sentences</i>				X
26.3. <i>Diversity of language structures</i>				X
26.4. <i>Number of concepts per chapter</i>				X
26.5. <i>Reuse of technical terms in subsequent chapters</i>				X
26.6. <i>Clarity of definitions of technical terms</i>				X
26.7. <i>Using concrete examples to illustrate concepts</i>			X	
26.8. <i>Absence of terms and sentences with no educational benefit (redundancy)</i>				X
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>45. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
45.1. <i>Illustrations</i>				X
45.2. <i>Content</i>			X	
45.3. <i>Activities</i>				X
45.4. <i>Practice Exercises (N/A)</i>				
45.5. <i>Assessment Exercises</i>				X
45.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3

### 3.2. Content (Extra Note)

Although most of the content served the science concepts in this chapter, there are just a couple of things worth noting here:

- On page 44, the “main idea” of the chapter states the following “Photosynthesis converts solar energy into chemical energy which is then used for cellular respiration to carry out biological functions”. This statement creates a misconception that ALL organisms use photosynthesis to obtain energy, especially since the title of the chapter is “Cellular Energy”. However, this is not the case. This statement would be more appropriate for the lesson on “photosynthesis” (lesson 2).
- On page 51: it should be mentioned that the reaction of photosynthesis also requires enzymes and chlorophyll.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>37. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
37.1. <i>Illustrations</i>				X
37.2. <i>Content</i>				X
37.3. <i>Activities</i>				X
37.4. <i>Practice Exercises (N/A)</i>				
37.5. <i>Assessment Exercises</i>				X

Illustrate by at least one example any indicator of criterion 4 given a score of less than 3

### Extra Note:

Although the content of this chapter is very culturally irrelevant especially since it deals with things at the cellular level, some more cultural references could have been made. For instance, on page 58 there was a discussion about CAM plants that are found in the desert. A link between this concept and the Gulf States environment could have been made.



Comments and explanation on implementing the indicator.  
(Please see synthesis report)  
Additional indicators and other comments.  
(Please see synthesis report)





<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: 12 –Term 1			
		Textbook Title: الأحياء: ثانوي الصف الثالث الفصل الدراسي الأول			
		Chapter Title: Chapter 4 Sexual Reproduction & Genetics التكاثر الجنسي و الوراثة			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>36. Alignment of the translated texts to the philosophy of the original textbook</b>					
36.1.	<i>Content of the Chapter</i>			X	
36.2.	<i>Activities included in the chapter</i>				X
36.3.	<i>Learning objectives</i>			X	
36.4.	<i>Practice exercises (N/A)</i>				
36.5.	<i>Assessment exercises</i>				X
36.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					
		e nc de cvt	e nc de cvt	e nc de cvt	e nc de cvt
<b>27. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
27.1.	<i>Length of sentences</i>				X
27.2.	<i>Complexity of sentences</i>				X
27.3.	<i>Diversity of language structures</i>				X
27.4.	<i>Number of concepts per chapter</i>				X
27.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
27.6.	<i>Clarity of definitions of technical terms</i>			X	
27.7.	<i>Using concrete examples to illustrate concepts</i>				X
27.8.	<i>Absence of terms and sentences with no educational benefit (redundancy)</i>				X
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3					

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>46. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
46.1. <i>Illustrations</i>		X		
46.2. <i>Content</i>			X	
46.3. <i>Activities</i>				X
46.4. <i>Practice Exercises (N/A)</i>				
46.5. <i>Assessment Exercises</i>			X	
46.6. <i>Skills</i>				X
<p>Illustrate by at least one example any indicator of criterion 3 given a score of less than 3</p> <p><b>3.1. Illustrations</b></p> <p>There were a couple of issues with respect to the illustrations in this chapter:</p> <ul style="list-style-type: none"> <li>• On pages 117, 118 and 120 the letter “Y” was used to represent the trait “pea color”. The use of this letter is somewhat confusing since the upper case “Y” used to represent the dominant allele and the lower case “y” used to represent the recessive allele look almost the same. Thus, it is difficult to distinguish between the two representations.</li> <li>• On page 118 and 119 an explanation of the concepts of “dihybrid cross” and “the law of independent assortment” was presented in the text and this explanation was not accompanied with an illustration. An illustration of these two concepts would facilitate comprehension of the concepts. (In fact, there is enough space on the page for this.)</li> <li>• The format of the illustrations on page 120 is unclear: figure 4-11 looks like it is part of figure 4-12. In addition, the handwriting of both figures is very small.</li> <li>• Finally, it would have been more ideal if the illustrations on pages 117, 118 and 120 included the probabilities or percentages (for the gametes and offspring).</li> </ul> <p><b>3.2. Content (extra note)</b></p> <p>A couple of minor things are worth mentioning here:</p> <ul style="list-style-type: none"> <li>• The explanation of probability in genetics on page 121 is irrelevant at this point of the lesson (at the very end). It should have been explained before when an explanation of the genetic ratios were being presented (at the beginning lesson 2).</li> <li>• The description of how chromosome maps are obtained (on page 123) is very unclear.</li> </ul>				



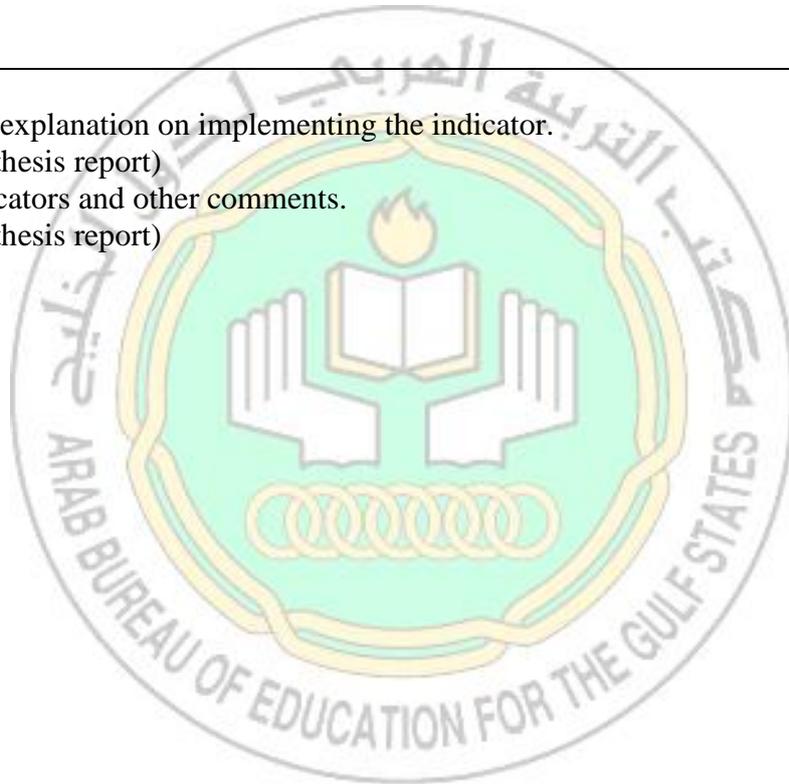
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>38. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
38.1. <i>Illustrations</i>				X
38.2. <i>Content</i>				X
38.3. <i>Activities</i>				X
38.4. <i>Practice Exercises (N/A)</i>				
38.5. <i>Assessment Exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

(Please see synthesis report)

Additional indicators and other comments.

(Please see synthesis report)





<b>Book Evaluation Form</b>		Subject: Biology			
		Grade: 12 –Term 1			
		Textbook Title: الأحياء : ثانوي الصف الثالث الفصل الدراسي الأول			
		Chapter Title: Chapter 5 Complex Inheritance and Heredity الوراثة المعقدة و الوراثة البشرية			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>37. Alignment of the translated texts to the philosophy of the original textbook</b>					
37.1.	<i>Content of the Chapter</i>			X	
37.2.	<i>Activities included in the chapter</i>				X
37.3.	<i>Learning objectives</i>			X	
37.4.	<i>Practice exercises (N/A)</i>				
37.5.	<i>Assessment exercises</i>			X	
37.6.	<i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 1 given a score of less than 3					

		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>28. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
28.1.	<i>Length of sentences</i>				X
28.2.	<i>Complexity of sentences</i>				X
28.3.	<i>Diversity of language structures</i>				X
28.4.	<i>Number of concepts per chapter</i>			X	
28.5.	<i>Reuse of technical terms in subsequent chapters</i>				X
28.6.	<i>Clarity of definitions of technical terms</i>				X
28.7.	<i>Using concrete examples to illustrate concepts</i>				X
28.8.	<i>Absence of terms and sentences</i>			X	



<i>with no educational benefit (redundancy)</i>				
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				
<p>2.4. <i>Number of concepts per chapter (extra note)</i>            This chapter is divided into three lessons: lesson 1 “Basic Patterns of Inheritance”; lesson 2 “Complex Patterns of Inheritance”; and lesson 3 “Chromosomes and Human Heredity”. When the chapter is viewed as a whole, the number of concepts is acceptable especially since the chapter is divided into three separate lessons. However, the second lesson is somewhat dense in terms of the number of concepts presented.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>47. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
47.1. <i>Illustrations</i>			X	
47.2. <i>Content</i>			X	
47.3. <i>Activities</i>		X		
47.4. <i>Practice Exercises (N/A)</i>				
47.5. <i>Assessment Exercises</i>			X	
47.6. <i>Skills</i>				X

Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				
<p>3.2. <i>Content (extra note)</i>            In the third lesson entitled “Chromosomes and Human Heredity”, on page 157 the concept of telomeres is presented after the concept of karyotypes is introduced and right before the concept of disjunction is explained. The concept of telomeres is in fact irrelevant to the content of this lesson in specific and to the whole chapter in general especially since any relation to the content (if any) is not made.</p>				
<p>3.3. <i>Activities</i>            Although the activities included in this chapter are relevant to the content being presented, there are a couple of points worth noting:</p> <ol style="list-style-type: none"> <li>1. The activity on page 159 is not relevant to the content of the particular lesson it is found in (i.e. lesson 3). This lesson discusses karyotyping and chromosomal abnormalities; however, this particular activity has to do with determining whether a trait is recessive or dominant. Also, an activity similar to this was done in a previous lesson. Thus, it would be more suitable, for instance, to include an activity that has to do with analyzing karyotypes.</li> <li>2. The activities found in the student’s book and the lab manual all revolve around the same idea which is determining whether a trait is dominant or recessive using a pedigree. In fact, the activity found on page 40 of the lab manual is very similar to the one found on page 143 of the student’s book.</li> </ol>				
<p>3.5. <i>Assessment exercises (extra note)</i>            A majority of the exercises having to do with analyzing pedigrees involve</p>				



*recessive* disorders; only one or two exercises were given for *dominant* disorders and no examples were given for *sex-linked* disorders.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>39. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
39.1. <i>Illustrations</i>				X
39.2. <i>Content</i>				X
39.3. <i>Activities</i>				X
39.4. <i>Practice Exercises (N/A)</i>				
39.5. <i>Assessment Exercises</i>				X
<p>Illustrate by at least one example any indicator of criterion 4 given a score of less than 3</p> <p><i>Extra Note:</i>            Although the content of the chapter is not really culture-related, cultural references were made where necessary or suitable. For instance, on page 143 the activity uses Arab names and on page 144, there is reference to religion. Also, on pages 161-162 cultural relevance was evident in terms of illustrations (pictures of The Gulf States were shown).</p>				

Comments and explanation on implementing the indicator.

(Please see synthesis report)

Additional indicators and other comments.

(Please see synthesis report)



## Synthesis Report for Biology Book Grade 12- Term 1

The following is an evaluation report which summarizes the strengths and weaknesses of a set of Biology textbooks for Grade 12 (first term). This set of books, consisting of the student's textbook and the student lab manual, was translated to Arabic from the McGraw Hill Glencoe Biology secondary science series. The textbooks comprise of six chapters which deal with diverse topics in Biology. In order to obtain an adequate representation of the set of textbooks, three chapters were randomly chosen for evaluation. This report provides a synthesis of the evaluation of the following three chapters: chapter 2 "Cellular Energy"; chapter 4 "Sexual Reproduction and Genetics"; and chapter 5 "Complex Inheritance and Human Heredity".

Prior to this report, an evaluation form was filled out for each of the aforementioned chapters. The evaluation forms consisted of four rubrics that corresponded to four different evaluation criteria: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the science concepts; and (4) suitability of the translated textbooks to the cultural context of The Gulf States. Each criterion comprised of a set of indicators which were evaluated based on the following scale: 1 (no evidence), 2 (little evidence), 3 (almost satisfactory evidence) and 4 (satisfactory evidence). The following report capitalizes on the strengths and weaknesses of each of the four criteria found in the evaluation forms for all the three evaluated chapters.

### Criterion 1: Alignment of the translated texts to the philosophy of the original textbook

Overall there was a satisfactory alignment between the philosophy of the book and the content, activities, assessment exercises, learning objectives and skills of the student book and lab manual. One of the major strengths in this book was the frequent relations made between the content and students' daily lives. This may be attributed to the nature of the content in the chapters which deal with topics that are very much related to daily life, i.e. issues of genetics, character traits and hereditary diseases. Another major strength is that the activities encouraged higher level thinking, which is something emphasized in the philosophy. For instance, students were asked to design and implement their own experiments, apply the genetics concepts to real life situations and engage in inquiry. It should be noted here that the teacher's guide was not included in the analysis of the chapters, thus the activities only include those that are found in the students' book and the lab manual. Also, the philosophy emphasized relating the content to society and technology which was attained through the content of the chapters. For instance, the advantages that polyploidy has on farming is presented on pages 125-126 (chapter 4). In addition, the use of fetal testing and karyotypes for detecting chromosomal abnormalities are discussed in chapter 5. Again, the nature of the content facilitates the ability to make these relations. Finally, the philosophy of the book mentions providing relations to other science-related subjects. Although this was evident throughout the three chapters, one minor drawback in this regard is that this was done very sparingly (twice in chapter 2 on pages 49 and 63; once in chapter 4 on page 122; and once in chapter 5 on page 160). Thus, it would be suggested to make more frequent relations to other science subjects. For instance, in chapter 2 links to physics could have been made during the explanation of the concept of energy and the laws of thermodynamics.



The major drawbacks of this criterion were found in chapter 2 of this book. One of those drawbacks has to do with the emphasis of lower level thinking in the assessment exercises and learning objectives in this particular chapter. In fact, both aspects of the chapter did not encourage thinking beyond the scope of the book and only focused on knowledge of the material. Even the assessment exercises found under the heading “critical thinking” only require retrieval of information from the book’s text. For instance, on page 69 (#12) students are asked to explain how energy is released from an ATP molecule and the explanation of this was actually provided on pages 49-50. Thus, it is suggested to include assessment exercises that require higher levels of thinking. With respect to the learning objectives, objectives that require the use of higher order thinking skills should be included. A final drawback in chapter 2 has to do with the content. Other than the fact that little relations to other science subjects were made (discussed earlier), there were also no relations to issues of daily life or society and technology, although many relations could have been made. For instance, the use of the metabolism of bacteria to clean wastes (bioremediation) could have been mentioned (see evaluation report for more suggestions).

*Criterion 2: Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students*

The suitability of the Arabic language in this book was very satisfactory. The sentences were very clearly articulated whereby their length, complexity and usage of vocabulary were very appropriate to the educational level of Grade 12 students. In addition, the concepts were presented with clear definitions of new technical terms and no redundancy of unnecessary information was evident. There was also consistency in the use of scientific technical terms within the lessons themselves, across the different lessons in a chapter and across the different chapters. Finally, even the number of concepts (which was an issue in all the other books of the series), was very acceptable. Although when viewed as a whole, all the chapters seem to have a large number of concepts, the concepts were very appropriately divided amongst lessons.

*Criterion 3: Suitability of the Arabization of the translated textbooks to serve the math and science concepts*

All in all, the Arabization of the content, illustrations, assessment exercises and skills were suitable to serve the science concepts. One major advantage in this criterion is the fact that the illustrations and diagrams presented throughout all three chapters were very descriptive, clear and served the purpose of making the concepts very tangible and lucid. This is in fact something especially important for the topics dealt with in these chapters specifically those of meiosis, heredity and cellular respiration, which require the use of clear diagrams in order to facilitate understanding of the concepts. For instance, the illustration of the electron transport on page 55 in chapter 2 makes the steps of cellular respiration easier to understand. In addition, the diagram presented in chapter 4 (page 112) which compares meiosis and mitosis makes it much easier to detect the differences between the two processes. It should be noted here that there were some exceptions in chapter 4 in terms of clarity of the illustrations. In addition, there were some instances where the explanation in the text should have been accompanied by a diagram (explanation of the dihybrid cross on page 118).

One area of weakness with respect to this criterion is the activities found in chapter 5. Although the activities included in this chapter were relevant to the content being presented, there were a couple of setbacks. For instance, the activity on page 159 was not relevant to the



content of the particular lesson it was found in (i.e. lesson 3). Lesson 3 discusses karyotyping and chromosomal abnormalities while the activity had to do with determining whether a trait is recessive or dominant (this topic is actually dealt with in lesson 1). Thus, it would be more suitable, for instance, to include an activity that has to do with analyzing karyotypes. In addition, most of the activities (even assessment exercises) that involved analysis of a pedigree had to do with *recessive* hereditary disorders. In other words, there wasn't a great deal of emphasis on dominant or sex-linked disorders.

Criterion 4: Suitability of the translated textbooks to the cultural context of The Gulf States

Generally speaking, all three chapters showed very satisfactory evidence in terms of the cultural relevance of the content, activities, illustrations and assessment exercises. In fact, the nature of the chapters is not very culturally-related since most of the topics deal with things at the cellular level; thus, there was no evidence of cultural irrelevance. Despite this, however, in chapter 5 attempts at integrating the Gulf States culture were made where necessary or suitable. For instance, the activity on page 143 uses Arab names and on page 144 there was reference to religion. On the other hand, in chapter 2 there was no reference to the Gulf States culture although some references could have been made. For instance, on page 58 where CAM plants that are found in the desert were being discussed, a link between this concept and the Gulf States environment could have been made.

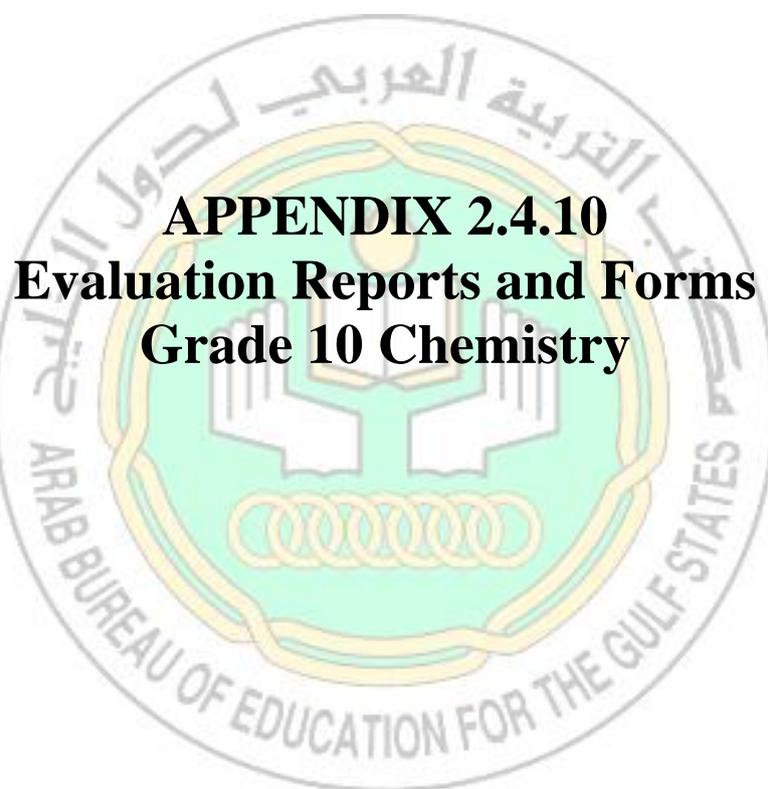
Additional comments:

There are a few other positive and negative aspects of the book which were not addressed earlier and which are worth mentioning. Some constructive things that are done in the chapters are:

- inclusion of a list of interesting factual information at the beginning of each chapter relating to the content of the chapter
- making relations between the content of the chapter to some aspect of students' life at the beginning of each chapter
- inclusion of a revision guide at the end of each chapter which contains all the summaries and new technical words found throughout the lessons.
- Inclusion of "reading checks" which are intermittent questions asked throughout the readings and aim at providing students with a means of monitoring their understanding.

A couple of negative points include the following:

- The scientific terms provided in the study guide are presented *without* definitions. It would be more ideal if the scientific terms were given with their definitions as a reference for students.
- The "reading checks" are not used frequently throughout the chapters. For instance, in chapter 2 it was used only twice in lesson 2 and once in lesson 3.



**APPENDIX 2.4.10**  
**Evaluation Reports and Forms**  
**Grade 10 Chemistry**



**Important:** A chapter from the two versions (the English as well as the Arabic versions of the books) should be translated. The codes and notes are to be written on the Arabic version of the book with an exception of notes on the original book (when an item appears in the original book but is missing in the Arabic version of the book).

Difference is due mainly to **QUALITY** difference and not just the number of missing, extra, or different items. Sometimes, a small difference in a sentence is a big difference in the meaning (i.e. large difference even if few occurrences).

<b>Book Evaluation Form</b>		Subject: Chemistry				
		Grade: 10		Semester: 1		
		Textbook Title:				
		Chapter Title: Introduction to chemistry				
<i>Criterion/Indicator</i>		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>38. Agreement of the translated Arabic book with that of the English book</b>						
38.1.	<i>Definitions and explanations in the chapter</i>			✓		
38.2.	<i>Activities included in the chapter</i>					✓
38.3.	<i>Learning objectives</i>			✓		
38.4.	<i>Practice exercises</i>			✓		
38.5.	<i>Assessment exercises</i>					✓
38.6.	<i>Figures, pictures and illustrations</i>					✓
<b>39. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
39.1.		For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.				

**Guidelines for filling this form (Item 1 only):**

21. One form is to be filled for each of the three books (student, practice, teacher) for each semester
22. You need to have a copy of the Table of Content of each book and of one chapter of the book chosen from the chapters you have already selected
23. For the chapter, for each item (for example, definition, explanation, activity...) one of the four scale points:



- a. '1' for completely different
  - b. '2' for large difference
  - c. '3' for little difference
  - d. '4' difference due only to cultural context
  - e. '5' no difference
24. Check the appropriate box in the rubric based on the frequency of each value
25. Write a short report under the headings 1.1 to 1.5 and attach to it the copies of the coded selected chapter.

- In addition to the scale points, three colors are used to do the coding: The yellow color indicates no difference (scale point is 5), the green color indicates a difference between the original and translated textbook (scale point is 2, 3 or 4) and the pink color indicates that the original and translated textbook are completely different (scale point is 1).

- This analysis is based on the comparison just between the student's textbooks because it is the only English manual that is available. The practice and teacher textbook are not available.

#### 1.5 Definitions and explanations in the chapter

*The analysis showed little difference because some sentences (examples) are missed but it does not change the meaning.*

*Although the main ideas are well translated, there is little difference due to the presence of more sentences in English than in the Arabic version (in few paragraphs): In the English version, the sentences are short and express one idea. Whereas in some paragraphs of the Arabic version, the sentences are long and express more than one idea.*

*Also, some direct definitions of technical terms are not translated like the definition of "hypotheses" (it is explained by a given example).*

#### 1.6 Activities included in the chapter

The activities which are found in the translated textbook are similar to the ones in the original textbook with no difference. However; there is one lab activity related to real life is missed at the end of the chapter.

#### 1.3 Learning objectives

The same objectives appear in both books. Most of these objectives are aligned and similar; however, few objectives are written differently in the original and translated books. For example, some verbs are missed in the Arabic version like 'Compare and contrast types of data' it is translated to Arabic: 'Compare types of data'. This verb is missed from other objectives sentences.

#### 1.4 Practice exercises

The practice exercises (exercises that are entitled "Standardized Test Practice") found in both books, are similar with no differences. However, some practice exercises, at the end of the chapter, are not found in the translated textbook (7 exercises out of 19 are missed). On the other hand, there is an additional practice book in the translated collection of books related to



each student textbook. For example, in grade 10, semester 1, there is a practice book which contains practice exercises for each lesson of the chapters.

### 1.5 Assessment

The assessment activities in this chapter are similar especially the assessment at the end of each lesson. However some assessment exercises, at the end of the chapter, are found in the original book and not found in the translated book (5 out of 56 exercises are missed). Therefore, the assessments in the translated text book have good agreement with the original book.

### 1.6 Figures, pictures and illustrations

The figures and illustration are not typically the same, sometimes due to cultural difference, but they show the same idea or concept in the Arabic and English version.

### 2.1 Table of contents

This analysis is based on three chapters and the order is not the same because chapter 3 in the English book is chapter 2 in the Arabic one. The tables of contents of the original book and the translated book, for the first two chapters, are not different because the titles and subtitles are similar. The title of the third chapter shows little difference because one word is added (“matter”) to the translated title. Nevertheless, the subtitles are the same.

Original English Version	Translated Arabic Version
Introduction to chemistry (Chapter 1)	مقدمة في الكيمياء (Chapter 1)
Matter- Properties and changes (Chapter 3)	المادة-الخواص و التغيرات (Chapter 2)
The structure of the atom (Chapter 4)	المادة- تركيب الذرة (Chapter 3)



**Important:** A chapter from the two versions (the English as well as the Arabic versions of the books) should be translated. The codes and notes are to be written on the Arabic version of the book with an exception of notes on the original book (when an item appears in the original book but is missing in the Arabic version of the book).

Difference is due mainly to **QUALITY** difference and not just the number of missing, extra, or different items. Sometimes, a small difference in a sentence is a big difference in the meaning (i.e. large difference even if few occurrences).

<b>Book Evaluation Form</b>		Subject: Chemistry				
		Grade: 10		Semester:2		
		Textbook Title:				
		Chapter Title: Chemical reactions				
<i>Criterion/Indicator</i>		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>40. Agreement of the translated Arabic book with that of the English book</b>						
40.1.	<i>Definitions and explanations in the chapter</i>			✓		
40.2.	<i>Activities included in the chapter</i>					✓
40.3.	<i>Learning objectives</i>					✓
40.4.	<i>Practice exercises</i>			✓		
40.5.	<i>Assessment exercises</i>					✓
40.6.	<i>Figures, pictures and illustrations</i>					✓
<b>41. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
41.1.		For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.				

**Guidelines for filling this form (Item 1 only):**

26. One form is to be filled for each of the three books (student, practice, teacher) for each semester
27. You need to have a copy of the Table of Content of each book and of one chapter of the book chosen from the chapters you have already selected
28. For the chapter, for each item (for example, definition, explanation, activity...) one of the four scale points:



- a. '1' for completely different
- b. "2" for large difference
- c. '3' for little difference
- d. '4' difference due only to cultural context
- e. '5' no difference

Note that 1, 2 and 3 differences could be due adding or eliminating some of the items within the books and due to translational differences as well.

Check the appropriate box in the rubric based on the frequency of each value

29. Write a short report under the headings 1.1 to 1.5 and attach to it the copies of the coded selected chapter.

**- In addition to the scale points, three colors are used to do the coding: The yellow color indicates no difference (scale point is 5), the green color indicates a difference between the original and translated textbook (scale point is 2, 3 or 4) and the pink color indicates that the original and translated textbook are completely different (scale point is 1).**

**- This analysis is based on the comparison just between the student's textbooks because it is the only English manual that is available. The practice and teacher textbook are not available.**

#### 1.7 Definitions and explanations in the chapter

The analysis showed little difference because some sentences (examples) are missed but it does not change the meaning. However, some missed sentences and examples could clarify more the concept as it is shown in the coding.

Although the main ideas are well translated, there is little difference due to the presence of more sentences in English than in the Arabic version (in few paragraphs): In the English version, the sentences are short and express one idea. Whereas, in some paragraphs of the Arabic version, the sentences are long and express more than one idea. Sometimes extra explanations are missed like how to balance a reaction containing polyatoms.

Also, some technical terms are not well translated like 'skeleton equation': In the Arabic version, it is defined as 'chemical reaction' whereas in some exercises it is named 'non equilibrium chemical reaction' which is more close to its scientific definition. This can create confusion for the students.

#### 1.8 Activities included in the chapter

The activities which are found in the translated textbook are similar to the ones in the original textbook with no difference. However; there is one lab activity related to real life is missed at the end of the chapter.

#### 1.9 Learning objectives

The same objectives appear in both books. Most of these objectives are aligned and similar.

#### 1.10 Practice exercises

The practice exercises found in both books are similar with no differences. However, some practice exercises in the original textbook are not found in the translated textbook one with



no important impact on the quality. On the other hand, there is an additional practice book in the translated collection of books related to each student textbook

### 1.11 Assessment

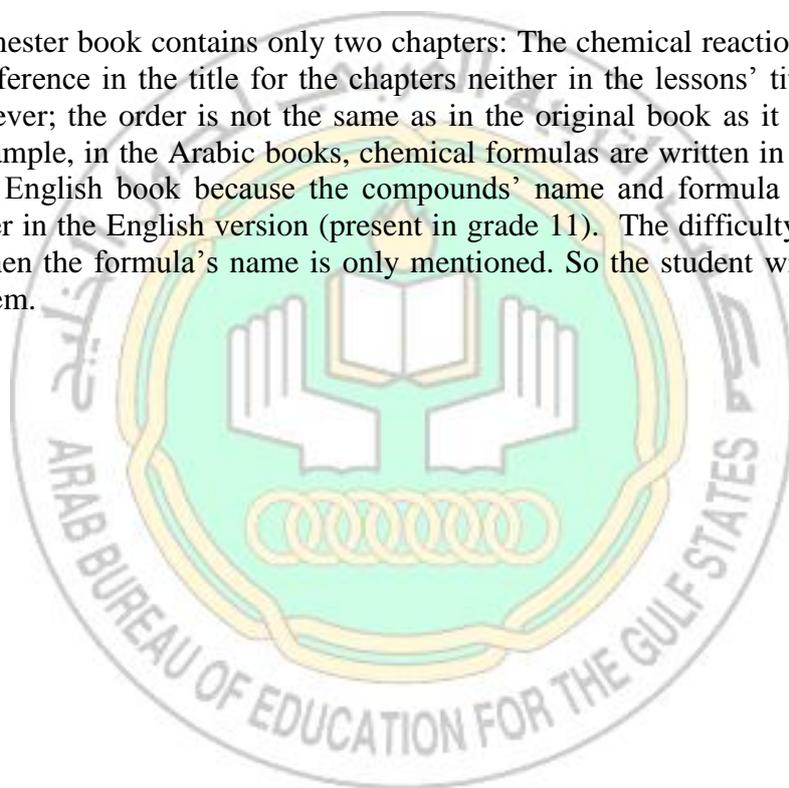
The assessment activities in this chapter are similar especially the assessment at the end of each lesson.

### 1.6 Figures, pictures and illustrations

The figures and illustration are not typically the same but they show the same idea or concept in the Arabic and English version.

### 2.1 Table of contents

The second semester book contains only two chapters: The chemical reactions and the Mole. There is no difference in the title for the chapters neither in the lessons' title in the second semester. However; the order is not the same as in the original book as it is showed in the coding. For example, in the Arabic books, chemical formulas are written in the questions, in contrast to the English book because the compounds' name and formula are presented in previous chapter in the English version (present in grade 11). The difficulty in some Arabic questions is when the formula's name is only mentioned. So the student will not be able to solve the problem.





<b>Book Evaluation Form</b>	Subject: Science			
	Grade: 10			
	Textbook Title: Science			
	Chapter Title: Introduction to chemistry			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>42. Alignment of the translated texts to the philosophy of the original textbook</b>				
42.1. <i>Content of the Chapter</i>				✓
42.2. <i>Activities included in the chapter</i>			✓	
42.3. <i>Learning objectives</i>	✓			
42.4. <i>Practice exercises</i>				✓
42.5. <i>Assessment exercises</i>		✓		
42.6. <i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Central role of student in the learning process</li> <li>- Presenting the scientific content in an interesting way by               <ol style="list-style-type: none"> <li>a) Using activities and questions that activate the students' prior knowledge, and develop the mental skills and critical thinking abilities,</li> <li>b) Using activities related to real life, math, other sciences and technology.</li> <li>c) Using practice exercises that aid the students in building and developing his own scientific knowledge                   <ol style="list-style-type: none"> <li>d) considering students' cognitive development and background</li> </ol> </li> </ol> </li> <li>-Encouraging students to use their knowledge to explain everyday events, scientific events, and technological innovations and in decision making regarding everyday issues.</li> <li>-Integrating science, technology, society and environmental issues.</li> </ul> <p>1.1: <i>The concepts in the following four lessons: "A story of two substances", "Chemistry and matter", "Scientific methods" and "Scientific research" are well explained. Examples and illustrations related to real life are given in order for the student understands the concept.</i></p> <p>1.2: <i>The activities will activate the student's prior knowledge, skills and critical thinking. However, only two activities are presented in the chapter and one of them is based on explaining graphs.</i></p> <p>1.3: <i>The learning objectives were not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive levels. For example: "Describe the difference between a theory and a scientific law."</i></p> <p>1.4: <i>The presence of a preparation activity at the beginning of the chapter is very helpful</i></p>				



*because it can help the student to think previously about the concepts in the chapter.*

*1.5: The assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. Therefore, they do not respect the philosophy of the original textbook.*

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>29. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>29.1.Length of sentences</i>				✓
<i>29.2.Complexity of sentences</i>				✓
<i>29.3.Diversity of language structures</i>				✓
<i>29.4.Number of concepts per chapter</i>				✓
<i>29.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>29.6.Clarity of definitions of technical terms</i>				✓
<i>29.7.Using concrete examples to illustrate concepts</i>				✓
<i>29.8.Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>48. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>48.1. Illustrations</i>				✓
<i>48.2. Content</i>				✓
<i>48.3. Activities</i>				✓
<i>48.4. Practice Exercises</i>				✓
<i>48.5. Assessment exercises</i>				✓
<i>48.6. Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

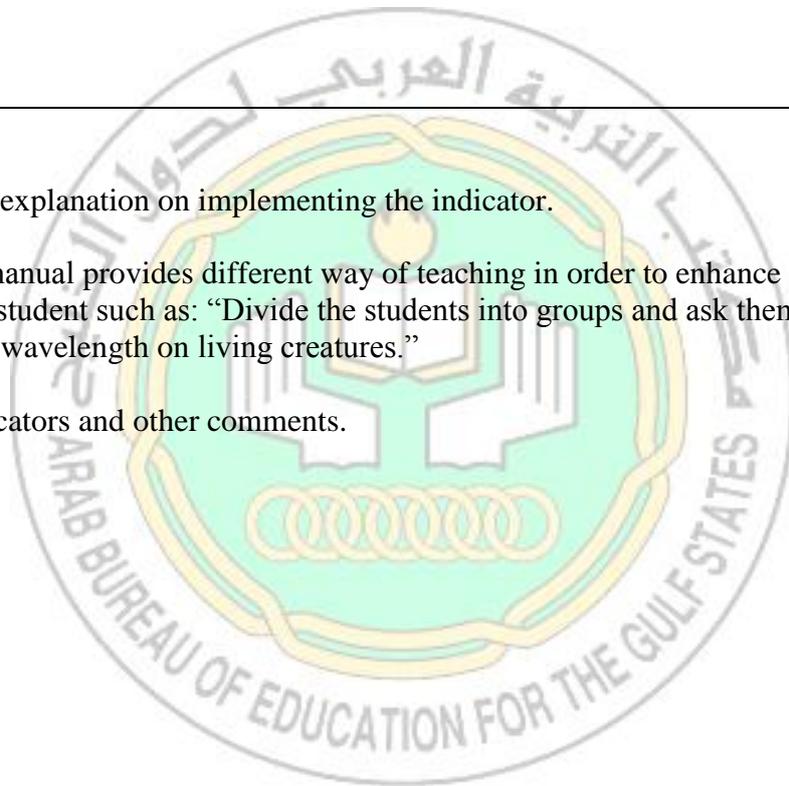


	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>49. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
49.1. <i>Illustrations</i>				✓
49.2. <i>Content</i>				✓
49.3. <i>Activities</i>				✓
49.4. <i>Practice Exercises</i>				✓
49.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

The teacher's manual provides different way of teaching in order to enhance the critical thinking of the student such as: "Divide the students into groups and ask them to explain the effect of UV-B wavelength on living creatures."

Additional indicators and other comments.





<b>Book Evaluation Form</b>	Subject: Science			
	Grade:10			
	Textbook Title: Science			
	Chapter Title:Matter and the structure of atom			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b><i>Criterion/Indicator</i></b>				
<b>43. Alignment of the translated texts to the philosophy of the original textbook</b>				
43.1. <i>Content of the Chapter</i>				✓
43.2. <i>Activities included in the chapter</i>		✓		
43.3. <i>Learning objectives</i>	✓			
43.4. <i>Practice exercises</i>		✓		
43.5. <i>Assessment exercises</i>		✓		
43.6. <i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Central role of student in the learning process</li> <li>- Presenting the scientific content in an interesting way by               <ol style="list-style-type: none"> <li>a) Using activities and questions that activate the students' prior knowledge, and develop the mental skills and critical thinking abilities,</li> <li>b) Using activities related to real life, math, other sciences and technology.</li> <li>c) Using practice exercises that aid the students in building and developing his own scientific knowledge                   <ol style="list-style-type: none"> <li>d) considering students' cognitive development and background</li> </ol> </li> </ol> </li> <li>-Encouraging students to use their knowledge to explain everyday events, scientific events, and technological innovations and in decision making regarding everyday issues.</li> <li>-Integrating science, technology, society and environmental issues.</li> </ul> <p>1.1: <i>The concepts in the following four lessons: "Early ideas about matter", "Defining the atom", "How atoms differ and unstable nuclei" and "Radioactivity" are well explained. Given that, the historical evolution of matter, atom's structure and the obstacles faced by scientist are presented. Therefore, the student will think, discover how the scientists were able to overcome the problems and how did they prove their hypothesis through experiments. This is well aligned with the philosophy of the textbook because the student is encouraged to observe, think about the development of science and learn how to solve problems (Central role of student in the learning process).</i></p> <p>1.2: <i>There are no activities in the student's textbook. However; in the teacher's manual, there are activities based on experiments which activate the student's knowledge, skills and critical thinking.</i></p>				

1.3: The learning objectives were not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive levels. For example: "Compare  $\alpha$ ,  $\beta$  and  $\gamma$  through mass atomic and charge".

1.4: The presence of a preparation activity at the beginning of the chapter is very helpful because it can help the student to think previously about the concepts in the chapter. But there are no exercises in the practice book related to this chapter.

1.5: The assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. Therefore, they do not respect the philosophy of the original textbook.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>30. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
30.1.Length of sentences				✓
30.2.Complexity of sentences				✓
30.3.Diversity of language structures				✓
30.4.Number of concepts per chapter				✓
30.5.Reuse of technical terms in subsequent lessons and chapters				✓
30.6.Clarity of definitions of technical terms				✓
30.7.Using concrete examples to illustrate concepts				✓
30.8.Redundancy of terms and sentences with no educational benefit.				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>50. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
50.1. Illustrations				✓
50.2. Content				✓
50.3. Activities				✓
50.4. Practice Exercises				✓
50.5. Assessment exercises				✓
50.6. Skills				✓



Illustrate by at last one example any indicator of criterion 3 given a score of less than 3

3.2: *Little information (the presence of gas) is missed from J.J. Thomson's experiment where the gases are sealed in glass tube under low pressure. This can lead the student to think that the cathode ray was generated in vacuum.*

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>51. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
51.1. <i>Illustrations</i>				✓
51.2. <i>Content</i>				✓
51.3. <i>Activities</i>				✓
51.4. <i>Practice Exercises</i>				✓
51.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

In this chapter, real life examples about the science evolution are given in order to understand the matter and atom structure. This can encourage the student to look, think about science and learn how to solve problems.

Additional indicators and other comments.



## REPORT ON CHEMISTRY TEXTBOOKS IN GRADE 10- FIRST TERM

The following report is an evaluation of science books in grade 10 (first semester). Each of the student textbook, practice book and teacher guidebook is divided into three chapters. Two chapters: (1) Introduction to Chemistry” and (2) Matter and the structure of atom were analyzed. The following results are based on the two evaluation forms.

The analysis concerning the **alignment of the translated texts to the philosophy of the original textbook** showed that the **content** is well aligned with the philosophy of the original textbooks. It is evident that chapters 1 and 2 in the student textbook, practice book and teacher guidebook are aligned with the philosophy due to the presence of examples and illustrations from real life in addition to the inclusion of the historical evolution of science (matter and atom structure) and the obstacles faced by scientists. The activities are planned to activate students’ prior knowledge and emphasize the development of higher order skills and critical thinking. However their number is limited in the students’ textbook but is compensated by several experiments that are included in the teachers’ manual. Finally, there was satisfactory evidence that the practice exercises (when available) and the skills were aligned with the philosophy of the original textbooks.

One of the problems, however, is that the learning objectives were not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive levels. Another problem is that the assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. It is worth noting that in chapters 1 and 2, some exercises in the lessons in the student book and the practice book are based on real life examples and enhance the critical thinking of the students.

**Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students:** Satisfactory evidence was found with respect to the indicators in this criterion (length of sentences, complexity of sentences, diversity of language structures, number of concepts per chapter, reuse of technical terms in subsequent lessons and chapters, clarity of definitions of technical terms, using concrete examples to illustrate concepts, redundancy of terms and sentences with no educational benefit).

**Suitability of the Arabization of the translated textbooks to serve the math and science concepts:** Satisfactory evidence was found with respect to the 6 indicators in this criterion (1) illustrations; (2) content; (3) activities; (4) practice exercises; (5) assessment exercises and (6) skills. However, there was a slight problem due to missing information in one of the experiments that led to the discovery of electrons. It was the experiment of J.J. Thomson in which he sealed the gases in glass tube under low pressure. In the text, the presence of gas in not mentioned but only the vacuum operation which can lead the student to think that the cathode rays were generated in vacuum.

**Suitability of the translated textbooks to the cultural context of The Gulf States:** Satisfactory evidence was found with respect to the 5 criteria in this rubric: (2) content, (3) activities, (4) practice exercises and (5) assessment for both chapters.



<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 10			
		Textbook Title: Science			
		Chapter Title: Chemical reactions			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>44. Alignment of the translated texts to the philosophy of the original textbook</b>					
44.1.	<i>Content of the Chapter</i>				✓
44.2.	<i>Activities included in the chapter</i>		✓		
44.3.	<i>Learning objectives</i>	✓			
44.4.	<i>Practice exercises</i>				✓
44.5.	<i>Assessment exercises</i>		✓		
44.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Central role of student in the learning process</li> <li>- Presenting the scientific content in an interesting way by               <ol style="list-style-type: none"> <li>a) Using activities and questions that activate the students' prior knowledge, and develop the mental skills and critical thinking abilities,</li> <li>b) Using activities related to real life, math, other sciences and technology.</li> <li>c) Using practice exercises that aid the students in building and developing his own scientific knowledge</li> <li>d) considering students' cognitive development and background</li> </ol> </li> <li>-Encouraging students to use their knowledge to explain everyday events, scientific events, and technological innovations and in decision making regarding everyday issues.</li> <li>-Integrating science, technology, society and environmental issues.</li> </ul> <p>1.1: <i>The concepts in the following three lessons: "Reactions and Equations", "Classifying chemical reactions" and "Reactions in aqueous solutions" are well explained. Examples and illustrations related to real life are presented in order that the student can understand the concepts. For example: Presenting the negative and positive effects of a series of chemical reactions over a period of time (The explosion of coal in London in 1950 produced a big amount of sulfur dioxide (SO<sub>2</sub>) gas).</i></p> <p>1.2: <i>There no activities in the student's textbook. However; in the teacher's manual, there are activities based on experiments which activate the student's knowledge, skills and critical thinking.</i></p> <p>1.3: <i>The learning objectives were not aligned with the textbook philosophy because they are</i></p>					

*focused on content and not written at higher cognitive levels. For example: “Determine the difference between various kinds of chemical reactions”.*

*1.4: The presence of a preparation activity (experiment) at the beginning of the chapter is very helpful because it can help the student to think previously about the concepts in the chapter.*

*1.5: The assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. Therefore, they do not respect the philosophy of the original textbook.*

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>31. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>31.1.Length of sentences</i>				✓
<i>31.2.Complexity of sentences</i>				✓
<i>31.3.Diversity of language structures</i>				✓
<i>31.4.Number of concepts per chapter</i>				✓
<i>31.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>31.6.Clarity of definitions of technical terms</i>				✓
<i>31.7.Using concrete examples to illustrate concepts</i>				✓
<i>31.8.Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>52. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>52.1. Illustrations</i>				✓
<i>52.2. Content</i>				✓
<i>52.3. Activities</i>				✓
<i>52.4. Practice Exercises</i>				✓
<i>52.5. Assessment exercises</i>				✓
<i>52.6. Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

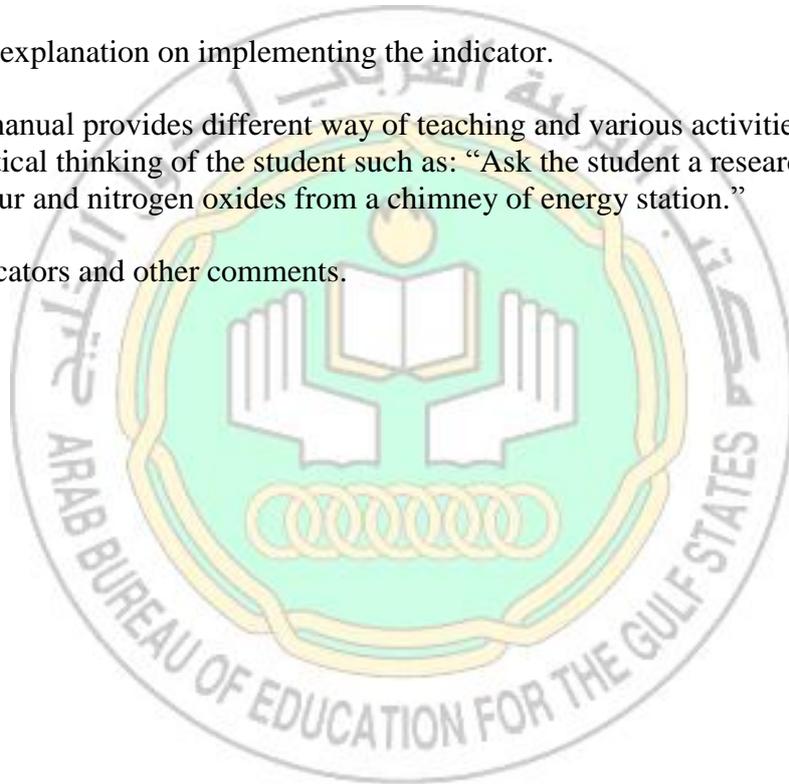


	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>53. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>53.1. Illustrations</i>				✓
<i>53.2. Content</i>				✓
<i>53.3. Activities</i>				✓
<i>53.4. Practice Exercises</i>				✓
<i>53.5. Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

The teacher's manual provides different way of teaching and various activities in order to enhance the critical thinking of the student such as: "Ask the student a research about the cleaning of sulfur and nitrogen oxides from a chimney of energy station."

Additional indicators and other comments.





## REPORT ON CHEMISTRY TEXTBOOKS IN GRADE 10- SECOND TERM<sup>1</sup>

The following report is an evaluation of science books in grade 10 (second semester). Each of the student textbook, practice book and teacher guidebook is divided into two chapters. One chapter: (1) "Chemical reactions" is analyzed. The following results are based on this evaluation form.

The analysis concerning the **alignment of the translated texts to the philosophy of the original textbook** showed that the **content** is well aligned with the philosophy of the original textbooks. It is evident that student textbook, practice book and teacher guidebook are aligned with the philosophy due to the presence of examples and illustrations from real life. For example presenting the negative and positive effects of a series of chemical reactions by using the explosion of coal in London in 1950 during which where a large amount of sulfur dioxide (SO<sub>2</sub>) gas was produced and covered the city. However the number of activities is limited in the students' textbook but is compensated by several experiments that are included in the teachers' manual. Finally, there was satisfactory evidence that the practice exercises (when available) and the skills were aligned with the philosophy of the original textbooks. It is worth noting that the activities are planned to activate students' prior knowledge and emphasize the development of higher order skills and critical thinking. Finally, there was satisfactory evidence that the practice exercises (when available) and the skills were aligned with the philosophy of the original textbooks.

One of the problems, however, is that the learning objectives were not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive levels. Another problem is that the assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. It is worth noting that in chapters 1 and 2, some exercises in the lessons in the student book and the practice book are based on real life examples and enhance the critical thinking of the students.

**Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students:** Satisfactory evidence was found with respect to the indicators in this criterion (length of sentences, complexity of sentences, diversity of language structures, number of concepts per chapter, reuse of technical terms in subsequent lessons and chapters, clarity of definitions of technical terms, using concrete examples to illustrate concepts, redundancy of terms and sentences with no educational benefit).

**Suitability of the Arabization of the translated textbooks to serve the math and science concepts:** Satisfactory evidence was found with respect to the 6 indicators in this criterion (1) illustrations; (2) content; (3) activities; (4) practice exercises; (5) assessment exercises and (6) skills.

**Suitability of the translated textbooks to the cultural context of The Gulf States:** Satisfactory evidence was found with respect to the 5 criteria in this rubric: (2) content, (3) activities, (4) practice exercises and (5) assessment for both chapters.

In conclusion, the evaluation form shows a good alignment of the three books with all criteria but some indicators show little exception. In the teacher book, the teacher is oriented to enhance the critical thinking of the student by offering him different way of teaching and proposing different kind of activities for the students like: Ask the student a research about the cleaning of sulfur and nitrogen oxides from a chimney of energy station.

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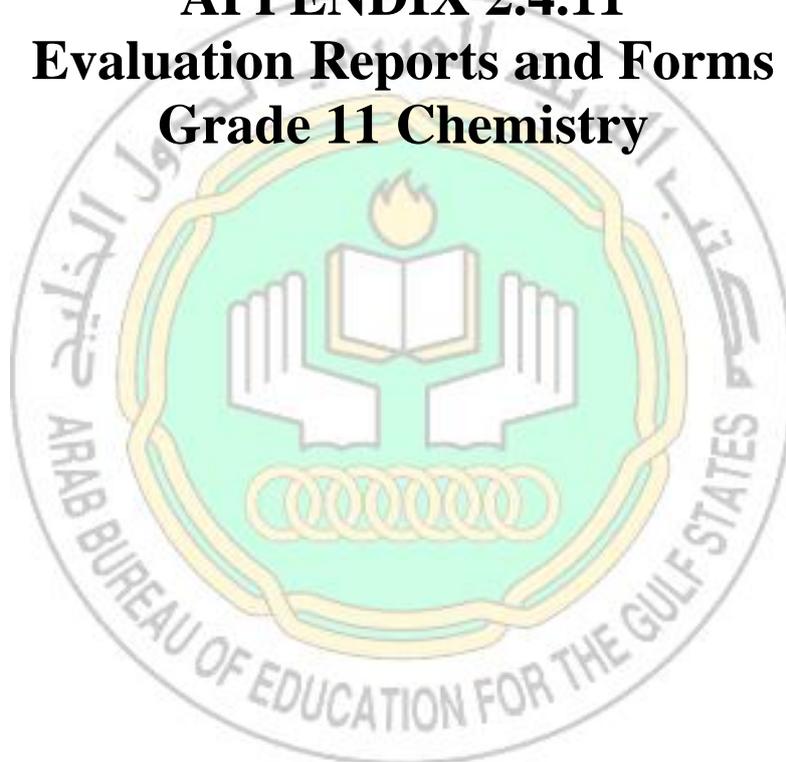
<sup>1</sup> Evaluation of the chapter in the second term is almost identical to that of the first term.



## **APPENDIX 2.4.11**

### **Evaluation Reports and Forms**

### **Grade 11 Chemistry**





**Important:** A chapter from the two versions (the English as well as the Arabic versions of the books) should be translated. The codes and notes are to be written on the Arabic version of the book with an exception of notes on the original book (when an item appears in the original book but is missing in the Arabic version of the book).

Difference is due mainly to **QUALITY** difference and not just the number of missing, extra, or different items. Sometimes, a small difference in a sentence is a big difference in the meaning (i.e. large difference even if few occurrences).

<b>Book Evaluation Form</b>		Subject: Chemistry				
		Grade: 11		Semester: 1		
		Textbook Title:				
		Chapter Title: Ionic compounds and Metals				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>Criterion/Indicator</b>						
<b>45. Agreement of the translated Arabic book with that of the English book</b>						
45.1. <i>Definitions and explanations in the chapter</i>			✓			
45.2. <i>Activities included in the chapter</i>						✓
45.3. <i>Learning objectives</i>						✓
45.4. <i>Practice exercises</i>						✓
45.5. <i>Assessment exercises</i>				✓		
45.6. <i>Figures, pictures and illustrations</i>						✓
<b>46. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
46.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

**Guidelines for filling this form (Item 1 only):**

30. One form is to be filled for each of the three books (student, practice, teacher) for each semester
31. You need to have a copy of the Table of Content of each book and of one chapter of the book chosen from the chapters you have already selected



32. For the chapter, for each item (for example, definition, explanation, activity...) one of the four scale points:
- '1' for completely different
  - '2' for large difference
  - '3' for little difference
  - '4' difference due only to cultural context
  - '5' no difference
33. Check the appropriate box in the rubric based on the frequency of each value
34. Write a short report under the headings 1.1 to 1.5 and attach to it the copies of the coded selected chapter.

**- In addition to the scale points, three colors are used to do the coding: The yellow color indicates no difference (scale point is 5), the green color indicates a difference between the original and translated textbook (scale point is 2, 3 or 4) and the pink color indicates that the original and translated textbook are completely different (scale point is 1).**

**- This analysis is based on the comparison just between the student's textbooks because it is the only English manual that is available. The practice and teacher textbook are not available.**

#### 1.12 Definitions and explanations in the chapter

The analysis showed large differences in few concepts because some paragraphs are missed like the paragraph about the octet rule and valence electrons named: "Valence electrons and Chemical bonds". This concept is very important to understand later the formation of ions and ionic compounds. Other important paragraphs are also missed like the effect of the size of the ions on lattice energy. This is may be due to the combination of the first two lessons in the English version in one lesson (Arabic version). In addition, the concept of naming an ionic compound is completely different with the one present in the English book and another rule is proposed.

On the other hand, there are good translated concepts and paragraphs. Although the main ideas are well translated, there is little difference due to the presence of more sentences in English than in the Arabic version (in few paragraphs): In the English version, the sentences are short and express one idea. Whereas in some paragraphs of the Arabic version, the sentences are long and express more than one idea.

#### 1.13 Activities included in the chapter

The activities which are found in the translated textbook are similar to the ones in the original textbook with no difference.

#### 1.14 Learning objectives

The same objectives appear in both books. Most of these objectives are aligned and similar. However, few terms are missed in the translated books but it does not have a big impact on the meaning.



### 1.15 Practice exercises

The practice exercises found in both books are similar. On the other hand, there is an additional practice book in the translated collection of books related to each student textbook

### 1.16 Assessment

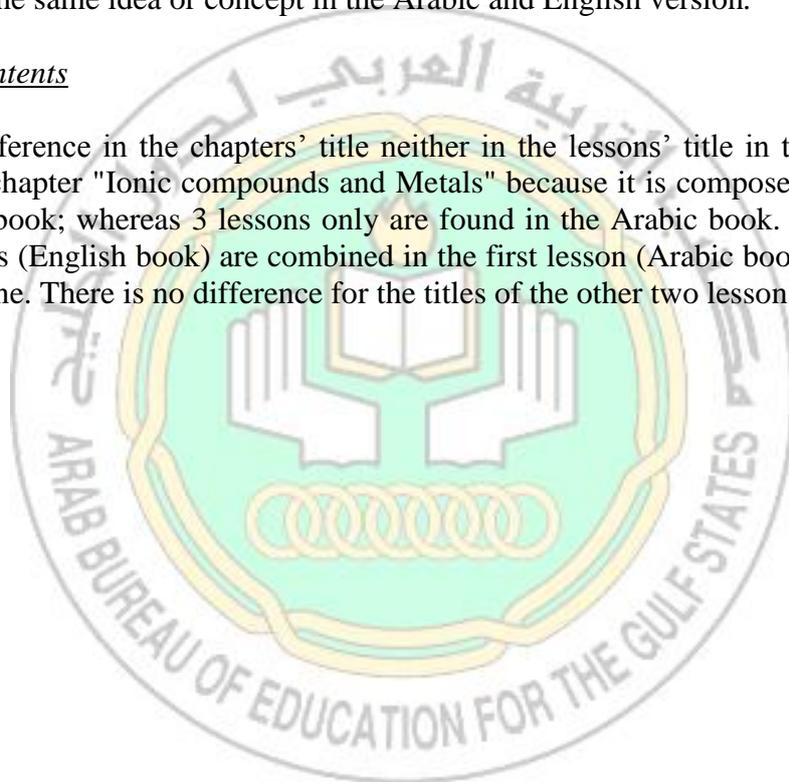
The assessment activities in this chapter are similar especially the assessment at the end of each lesson. However some assessment exercises, at the end of the chapter, are found in the original book and not found in the translated book.

### 1.6 Figures, pictures and illustrations

The figures and illustration are not typically the same, sometimes due to cultural difference, but they show the same idea or concept in the Arabic and English version.

### 2.1 Table of contents

There is no difference in the chapters' title neither in the lessons' title in the first semester except for the chapter "Ionic compounds and Metals" because it is composed from 4 lessons in the English book; whereas 3 lessons only are found in the Arabic book. In chapter 7, the first two lessons (English book) are combined in the first lesson (Arabic book) under the title of the second one. There is no difference for the titles of the other two lessons.





**Important:** A chapter from the two versions (the English as well as the Arabic versions of the books) should be translated. The codes and notes are to be written on the Arabic version of the book with an exception of notes on the original book (when an item appears in the original book but is missing in the Arabic version of the book).

Difference is due mainly to **QUALITY** difference and not just the number of missing, extra, or different items. Sometimes, a small difference in a sentence is a big difference in the meaning (i.e. large difference even if few occurrences).

<b>Book Evaluation Form</b>		Subject: Chemistry				
		Grade: 11		Semester:2		
		Textbook Title:				
		Chapter Title: Gases				
		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b><i>Criterion/Indicator</i></b>						
<b>47. Agreement of the translated Arabic book with that of the English book</b>						
47.1. Definitions and explanations in the chapter						✓
47.2. Activities included in the chapter						✓
47.3. Learning objectives						✓
47.4. Practice exercises						✓
47.5. Assessment exercises				✓		
47.6. Figures, pictures and illustrations						✓
<b>48. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
48.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

**Guidelines for filling this form (Item 1 only):**

35. One form is to be filled for each of the three books (student, practice, teacher) for each semester
36. You need to have a copy of the Table of Content of each book and of one chapter of the book chosen from the chapters you have already selected
37. For the chapter, for each item (for example, definition, explanation, activity...) one of the four scale points:



- a. '1' for completely different
  - b. '2' for large difference
  - c. '3' for little difference
  - d. '4' difference due only to cultural context
  - e. '5' no difference
38. Check the appropriate box in the rubric based on the frequency of each value
39. Write a short report under the headings 1.1 to 1.5 and attach to it the copies of the coded selected chapter.

**- In addition to the scale points, three colors are used to do the coding: The yellow color indicates no difference (scale point is 5), the green color indicates a difference between the original and translated textbook (scale point is 2, 3 or 4) and the pink color indicates that the original and translated textbook are completely different (scale point is 1).**

**- This analysis is based on the comparison just between the student's textbooks because it is the only English manual that is available. The practice and teacher textbook are not available.**

#### 1.17 Definitions and explanations in the chapter

There are good translated concepts and paragraphs. Although the main ideas are the same, there is a little difference due to the presence of more sentences in English than in the Arabic version (in few paragraphs): In the English version, the sentences are short and express one idea. Whereas in some paragraphs of the Arabic version, the sentences are long and express more than one idea.

#### 1.18 Activities included in the chapter

The activities which are found in the translated textbook are similar to the ones in the original textbook with no difference.

#### 1.3 Learning objectives

The same objectives appear in both books. Most of these objectives are aligned and similar.

#### 1.4 Practice exercises

The practice exercises found in both books are similar. On the other hand, there is an additional practice book in the translated collection of books related to each student textbook

#### 1.5 Assessment

The assessment activities in this chapter are similar especially the assessment at the end of each lesson. However; some assessment exercises, at the end of the chapter, are found in the original book and not found in the translated book.

#### 1.6 Figures, pictures and illustrations



The figures and illustration are not typically the same, sometimes due to cultural difference, but they show the same idea or concept in the Arabic and English version.

## 2.1 Table of contents

There is no difference in the chapters' title neither in the lessons' title in the second semester.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 11			
		Textbook Title: Chemistry			
		Chapter Title: Covalent Bonding			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>49. Alignment of the translated texts to the philosophy of the original textbook</b>					
49.1.	<i>Content of the Chapter</i>			✓	
49.2.	<i>Activities included in the chapter</i>				✓
49.3.	<i>Learning objectives</i>	✓			
49.4.	<i>Practice exercises</i>				✓
49.5.	<i>Assessment exercises</i>		✓		
49.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Central role of student in the learning process</li> <li>- Presenting the scientific content in an interesting way by               <ol style="list-style-type: none"> <li>a) Using activities and questions that activate the students' prior knowledge, and develop the mental skills and critical thinking abilities,</li> <li>b) Using activities related to real life, math, other sciences and technology.</li> <li>c) Using practice exercises that aid the students in building and developing his own scientific knowledge                   <ol style="list-style-type: none"> <li>d) considering students' cognitive development and background</li> </ol> </li> </ol> </li> <li>-Encouraging students to use their knowledge to explain everyday events, scientific events, and technological innovations and in decision making regarding everyday issues.</li> <li>-Integrating science, technology, society and environmental issues.</li> </ul> <p>1.1: <i>The concepts in the following three lessons: "Ionic bonds and ionic compounds", "Names and formulas for ionic compounds" and "Metallic bonds and the properties of metals" are well explained. However, the content is very condensed: under one concept, five definitions are explained. As a result, the student may be confused.</i></p> <p>1.3: <i>The learning objectives were not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive levels. For example: "Define chemical bonds".</i></p> <p>1.5: <i>The assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. Therefore, they do not respect the philosophy of the original textbook. It is worth noting that, some exercises in the lessons in the student book and the practice book are based on real life</i></p>					

examples.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>32. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>32.1.Length of sentences</i>			✓	
<i>32.2.Complexity of sentences</i>		✓		
<i>32.3.Diversity of language structures</i>		✓		
<i>32.4.Number of concepts per chapter</i>		✓		
<i>32.5.Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>32.6.Clarity of definitions of technical terms</i>				✓
<i>32.7.Using concrete examples to illustrate concepts</i>			✓	
<i>32.8.Redundancy of terms and sentences with no educational benefit.</i>				✓

Illustrate by at last one example any indicator of criterion 2 given a score of less than 3

*-2.1 and 2.2: These indicators are rated respectively as “almost satisfactory” and “little evidence” due to the indirect way of presenting the content. (For example in the student’s textbook, some sentences are composed of three lines and written in a complicated way thus difficult to be understood).*

*2.3:This indicator is rated as “little evidence” since most of the sentences in the student textbook had almost the same structure (Most of the sentences begin with words such as: Precise(حدد))*

*2.4: This indicator is rated as “little evidence” since many concepts are presented. For example, the following concepts were introduced in the chapter: The covalent Bond: single and multiple covalent bonds, strength of covalent bonds, Naming of Molecule, Molecular structures: Lewis structures, resonance structures, molecular shape, Electronegativity and Polarity.*

*2.7: Most of the photos used to illustrate the concepts of covalent bonds are not based on real life examples but drawn which make the concepts difficult to be understood.*

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence



<b>54. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
54.1. <i>Illustrations</i>				✓
54.2. <i>Content</i>				✓
54.3. <i>Activities</i>				✓
54.4. <i>Practice Exercises</i>				✓
54.5. <i>Assessment exercises</i>				✓
54.6. <i>Skills</i>				✓

Illustrate by at last one example any indicator of criterion 3 given a score of less than 3

3.2: *The Arabization of the content present satisfactory evidence. However; there is a sentence in the student textbook about the illustration of a molecular structure with Lewis model where the choice of the central atom in the compound is not well defined. In addition, the sentence structure creates confusion concerning the hydrogen whether it is considerate as central atom or not. Nevertheless, an example is given later to release this confusion.*

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>55. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
55.1. <i>Illustrations</i>				✓
55.2. <i>Content</i>				✓
55.3. <i>Activities</i>				✓
55.4. <i>Practice Exercises</i>				✓
55.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				



Comments and explanation on implementing the indicator.

In this chapter, many concepts with a lot of information on the same page were presented. Furthermore, no illustrations were given in the practice book.

On the other hand, the concept of covalent bonding is related to concepts in the previous chapter because the chapter begins with an example of a chemical reaction where a covalent component is obtained from an ionic one. This correlation is important for the student's understanding.

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 11			
		Textbook Title: Chemistry			
		Chapter Title: Electrons in Atoms			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>50. Alignment of the translated texts to the philosophy of the original textbook</b>					
50.1.	<i>Content of the Chapter</i>			✓	
50.2.	<i>Activities included in the chapter</i>				✓
50.3.	<i>Learning objectives</i>	✓			
50.4.	<i>Practice exercises</i>				✓
50.5.	<i>Assessment exercises</i>		✓		
50.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Central role of student in the learning process</li> <li>- Presenting the scientific content in an interesting way by               <ol style="list-style-type: none"> <li>a) Using activities and questions that activate the students' prior knowledge, and develop the mental skills and critical thinking abilities,</li> <li>b) Using activities related to real life, math, other sciences and technology.</li> <li>c) Using practice exercises that aid the students in building and developing his own scientific knowledge                   <ol style="list-style-type: none"> <li>d) considering students' cognitive development and background</li> </ol> </li> </ol> </li> <li>-Encouraging students use their knowledge to explain everyday events, scientific events, and technological innovations and in decision making regarding everyday issues.</li> <li>-Integrating science, technology, society and environmental issues.</li> </ul> <p>1.1: <i>The content of this chapter is composed of three lessons: "Light and quantized energy", "Quantum theory and the atom" and "Electron configuration" is almost satisfactory because it is explained through real life examples. However; many concepts are present in this chapter. Various objectives have to be achieved (at least eight objectives, in the teacher book) without any indication of the sessions' number.</i></p> <p>1.3: <i>The learning objectives were not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive levels. For example: "Define the quantum energy and its relations with the matter energy".</i></p> <p>1.5: <i>The assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. Therefore, they do not respect the philosophy of the original textbook. It is worth noting that,</i></p>					

some exercises in the lessons in the student book and the practice book are based on real life examples and enhance the critical thinking of the students.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>33. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
33.1.Length of sentences				✓
33.2.Complexity of sentences		✓		
33.3.Diversity of language structures			✓	
33.4.Number of concepts per chapter		✓		
33.5.Reuse of technical terms in subsequent lessons and chapters			✓	
33.6.Clarity of definitions of technical terms			✓	
33.7.Using concrete examples to illustrate concepts				✓
33.8.Redundancy of terms and sentences with no educational benefit.				✓
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 3</p> <p>2.2: This indicator is rated as “little evidence” due to the presence of several technical long words in some sentences (For example on page 16 in the student book: الفوتوضونية، الكهربائية، الكهروضونية، الضوئي، كهربائية) or due to the indirect way of presenting the content.</p> <p>2.3: The indicator “diversity of language structures” is rated as almost satisfactory evidence since most of the sentences had different structure (Few sentences begin with words such as: For example (مثلاً), Similar to (كما))</p> <p>2.4: This indicator is rated as “little evidence” since many concepts are presented. For example, the following concepts were introduced in the chapter: Atom, Wave nature of light, Particle nature of light, Quantum theory and Atom, The Quantum Mechanical Model of the Atom, Hydrogen’s Atomic Orbitals, Electron configuration...</p> <p>2.5: Some representations of technical terms (symbols) are replaced by new symbols not identified previously like: <math>v</math> replaced by <math>v</math> (in the practice book). In addition, the magnetic field <math>B</math> (in the practice book) was not identified previously even in the student book.</p> <p>2.6: Some technical words were not defined previously. In the practice book, they used ‘ملفات’ which is not explained in the student book.</p>				
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence

56. Suitability of the Arabization of the translated textbooks to serve the math and science concepts				
56.1. Illustrations				✓
56.2. Content			✓	
56.3. Activities				✓
56.4. Practice Exercises			✓	
56.5. Assessment exercises				✓
56.6. Skills				✓
<p>Illustrate by at last one example any indicator of criterion 3 given a score of less than 3</p> <p>3.1: The illustrations were highly rated; however, some equipment in the practice book are used without being represented by any illustration and their English names are written in Arabic without translation (أميتر، فولتميتير، مصباح زئبقى)</p> <p>3.2: Some concepts are not clearly presented. For example, the reason that Bohr's Model works for hydrogen and does not work for the other elements is not clearly explained in the student book. The difference between these models is clearly explained in the teacher book.</p> <p>3.4: This indicator showed little evidence due to the lack of clarity of explaining the experiment in the practice book (the relation between the chemistry equipment and the mercury lamp). This is not aligned with the book philosophy which is based on the central role of student in the learning processes</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>57. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
57.1. <i>Illustrations</i>				✓
57.2. <i>Content</i>				✓
57.3. <i>Activities</i>				✓
57.4. <i>Practice Exercises</i>				✓
57.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

In this chapter, many concepts with a lot of information on the same page were presented. The student needs the teacher's assistance in order to understand the content. This may be due to: (1) insufficient number of concrete examples; (2) some concepts are not well defined in the student textbook whereas clearly explained in the teacher textbook (real life examples). On the other hand, the importance of chemistry is emphasized through applications related to human health due to studies done in the electrons' field (like treating cancer disease presented at the end of the chapter in the student textbook).

Additional indicators and other comments.



## REPORT ON CHEMISTRY TEXTBOOKS IN GRADE 11- FIRST TERM

The following report is an evaluation of science books in grade 11 (first semester). Each of the student textbook and practice book and teacher guidebook are divided into four chapters. Two chapters: (1) "electrons and atoms" and (2) "covalent bonding" were analyzed. One evaluation form was filled out for each of the two chapters. The following results are based on the two evaluation forms.

The analysis concerning the **alignment of the translated texts to the philosophy of the original textbook** showed almost satisfactory evidence that the **content** is aligned with the philosophy of the original textbooks because the content is explained through real life examples. Also, there was satisfactory evidence that the practice exercises and the skills were aligned with the philosophy of the original textbooks. The analysis also showed that the content of the two chapters is very condensed and includes a small number of illustrations.

One of the problems, however, is that the learning objectives were not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive levels. Another problem is that the assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples. It is worth noting that in chapters 1 and 2, some exercises in the lessons in the student book and the practice book are based on real life examples and enhance the critical thinking of the students.

**Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students:** The analysis showed almost satisfactory to satisfactory evidence for the following indicators: (1) length of sentences; (2) reuse of technical terms in subsequent lessons and chapters; (3) clarity of definitions of technical terms; (4) using concrete examples to illustrate concepts and (5) redundancy of terms and sentences with no educational benefit. The indicator "complexity of sentences" was rated as "little evidence" in both chapters due to the presence of several technical long words in some sentences or due to the indirect way of presenting the content. The indicator "diversity of language structures" was rated as almost satisfactory evidence in one of the chapters whereas it was rated as "little evidence" in the other chapter (Covalent bonding) where most of the sentences in the student textbook had almost the same structure. The indicator "number of concepts per chapter" received a rating of "little evidence" since many concepts are presented in each of the two chapters. For example the following concepts were introduced in the chapter "covalent bonding": The covalent Bond: single and multiple covalent bonds, strength of covalent bonds, Naming of Molecule, Molecular structures; Lewis structures, resonance structures, molecular shape, Electronegativity and Polarity.

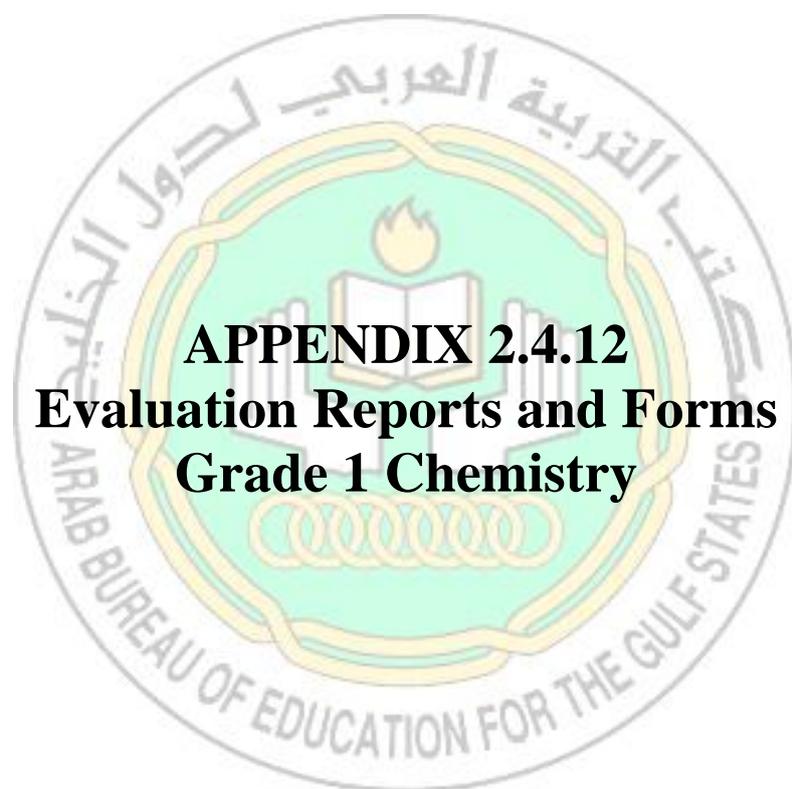
**Suitability of the Arabization of the translated textbooks to serve the math and science concepts:** The analysis showed almost satisfactory to satisfactory evidence for the following indicators: (1) illustrations; (2) content; (3) activities; (4) assessment exercises and (5) skills. The illustrations were highly rated; however, some equipment in the practice book (in the chapter on electrons in atoms) are used without being represented by any illustration and their English names are written in Arabic without translation (أميتر فولتميتر). Also in the same chapter (electrons in atoms), some concepts are not clearly presented. For example, the reason that Bohr's Model works for hydrogen and does not work for the other elements is not clearly explained in the student book. The difference between these models is clearly explained in the teacher book. The indicator "practice exercises" showed little evidence in the one lesson (electrons in atoms) due to the lack of clarity of explaining the experiment in the practice book whereas in the second chapter this indicator showed satisfactory evidence.

**Suitability of the translated textbooks to the cultural context of The Gulf States:**



Satisfactory evidence was found with respect to the 5 criteria in this rubric: (1) illustrations, (2) content, (3) activities, (4) practice exercises and (5) assessment.







**Important:** A chapter from the two versions (the English as well as the Arabic versions of the books) should be translated. The codes and notes are to be written on the Arabic version of the book with an exception of notes on the original book (when an item appears in the original book but is missing in the Arabic version of the book).

Difference is due mainly to **QUALITY** difference and not just the number of missing, extra, or different items. Sometimes, a small difference in a sentence is a big difference in the meaning (i.e. large difference even if few occurrences).

<b>Book Evaluation Form</b>		Subject: Chemistry				
		Grade: 12		Semester: 1		
		Textbook Title:				
		Chapter Title: Reaction rates				
<i>Criterion/Indicator</i>		Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>51. Agreement of the translated Arabic book with that of the English book</b>						
51.1. Definitions and explanations in the chapter			✓			
51.2. Activities included in the chapter						✓
51.3. Learning objectives						✓
51.4. Practice exercises						✓
51.5. Assessment exercises				✓		
51.6. Figures, pictures and illustrations						✓
<b>52. Table of content of the textbook: Compare table of contents of the English version with the tables of content of the Arabic textbooks at each grade level. In addition, for grades 10, 11, and 12 list the missing chapters in the report of Grade 12.</b>						
52.1. For the Table of Content, compare the titles of the chapters in the tables of content between the Arabic and English versions and based on counting the differences in the titles between them and include the results of your comparison in the report along with copies of the coded table of contents.						

**Guidelines for filling this form (Item 1 only):**

40. One form is to be filled for each of the three books (student, practice, teacher) for each semester
41. You need to have a copy of the Table of Content of each book and of one chapter of the book chosen from the chapters you have already selected
42. For the chapter, for each item (for example, definition, explanation, activity...) one of the four scale points:



- a. '1' for completely different
  - b. '2' for large difference
  - c. '3' for little difference
  - d. '4' difference due only to cultural context
  - e. '5' no difference
43. Check the appropriate box in the rubric based on the frequency of each value
44. Write a short report under the headings 1.1 to 1.5 and attach to it the copies of the coded selected chapter.

**- In addition to the scale points, three colors are used to do the coding: The yellow color indicates no difference (scale point is 5), the green color indicates a difference between the original and translated textbook (scale point is 2, 3 or 4) and the pink color indicates that the original and translated textbook are completely different (scale point is 1).**

**- This analysis is based on the comparison just between the student's textbooks because it is the only English manual that is available. The practice and teacher textbook are not available.**

#### 1.19 Definitions and explanations in the chapter

Some real life examples that could help the student for a better comprehension are missed. For example explaining the concept of the sufficient energy to react (Activation energy,  $E_a$ ) through the relationship between a person pushing a heavy cart up a hill. Also, there are concepts missed from the Arabic text, but appear in the conclusion like the effect of catalysts on the activation energy.

The definitions and explanations are the same with a little difference due to the presence of more sentences and critical thinking questions in English than in the Arabic version. In this chapter, one lesson is missed. Thus only 3 lessons are presented in the Arabic book instead of four. Therefore, the missed concepts about "instantaneous reaction rates and reaction mechanism" made the translated book so different from the original one.

#### 1.2 Activities included in the chapter

The activities which are found in the translated textbook are similar to the ones in the original textbook with no difference.

#### 1.3 Learning objectives

The same objectives appear in both books. Most of these objectives are aligned and similar.

#### 1.4 Practice exercises

The practice exercises found in both books are similar. On the other hand, there is an additional practice book in the translated collection of books related to each student textbook.



### 1.5 Assessment

The assessment activities in this chapter are similar especially the assessment at the end of each lesson. However; some assessment exercises, at the end of the chapter, are found in the original book and not found in the translated book and vice-versa.

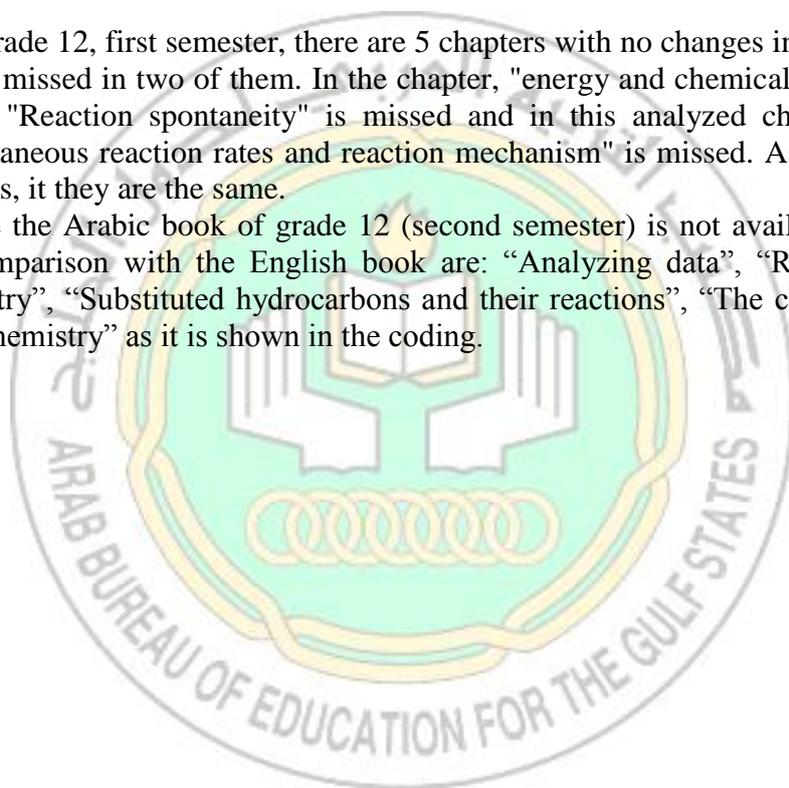
### 1.6 Figures, pictures and illustrations

The figures and illustration are not typically the same, sometimes due to cultural difference, but they show the same idea or concept in the Arabic and English version. Some figures are missed due to missed paragraphs and lessons in this chapter.

### 2.1 Table of contents

In the grade 12, first semester, there are 5 chapters with no changes in their titles but a lesson is found missed in two of them. In the chapter, "energy and chemical change" the last lesson entitled "Reaction spontaneity" is missed and in this analyzed chapter the lesson entitles "instantaneous reaction rates and reaction mechanism" is missed. As for the titles of the other lessons, it they are the same.

Because the Arabic book of grade 12 (second semester) is not available, the missed chapters in comparison with the English book are: "Analyzing data", "Redox reactions", "Electrochemistry", "Substituted hydrocarbons and their reactions", "The chemistry of life" and "Nuclear chemistry" as it is shown in the coding.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 12			
		Textbook Title: Science			
		Chapter Title: Chemical equilibrium			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>53. Alignment of the translated texts to the philosophy of the original textbook</b>					
53.1.	<i>Content of the Chapter</i>				✓
53.2.	<i>Activities included in the chapter</i>		✓		
53.3.	<i>Learning objectives</i>	✓			
53.4.	<i>Practice exercises</i>				✓
53.5.	<i>Assessment exercises</i>			✓	
53.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Central role of student in the learning process</li> <li>- Presenting the scientific content in an interesting way by               <ol style="list-style-type: none"> <li>a) Using activities and questions that activate the students' prior knowledge, and develop the mental skills and critical thinking abilities,</li> <li>b) Using activities related to real life, math, other sciences and technology.</li> <li>c) Using practice exercises that aid the students in building and developing his own scientific knowledge</li> <li>c) considering students' cognitive development and background</li> </ol> </li> <li>-Encouraging students use their knowledge to explain everyday events, scientific events, and technological innovations and in decision making regarding everyday issues.</li> <li>-Integrating science, technology, society and environmental issues.</li> </ul> <p><i>1.1: The concepts in the three lessons: A state of dynamic balance, Factors affecting chemical equilibrium and using equilibrium constants are explained by using examples and illustrations related to real life; a situation that provides students with opportunities to understand the content. An example of this approach is explaining chemical equilibrium by using the "seesaw" game to illustrate that when the two people on the seesaw are in balance they are in "equilibrium" a situation similar to equilibrium in chemical reactions.</i></p> <p><i>1.2: An experiment is presented at beginning of the chapters thus providing the students the opportunity to relate the concepts to concrete events that allows understanding.</i></p> <p><i>1.3: The learning objectives are focused on the scientific content with little attention to thinking skills and higher level cognitive skills.</i></p>					

1.5: The assessment exercises and the "revision exercises" at the end of the chapter are almost closed, limited to the content of the chapters and represent direct applications of the content taught in the chapter. However, the exercises in the lesson (student book) and the ones in the practice book are based on real life examples with emphasis on critical thinking.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>34. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
<i>34.1. Length of sentences</i>				✓
<i>34.2. Complexity of sentences</i>				✓
<i>34.3. Diversity of language structures</i>				✓
<i>34.4. Number of concepts per chapter</i>				✓
<i>34.5. Reuse of technical terms in subsequent lessons and chapters</i>				✓
<i>34.6. Clarity of definitions of technical terms</i>				✓
<i>34.7. Using concrete examples to illustrate concepts</i>				✓
<i>34.8. Redundancy of terms and sentences with no educational benefit.</i>				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

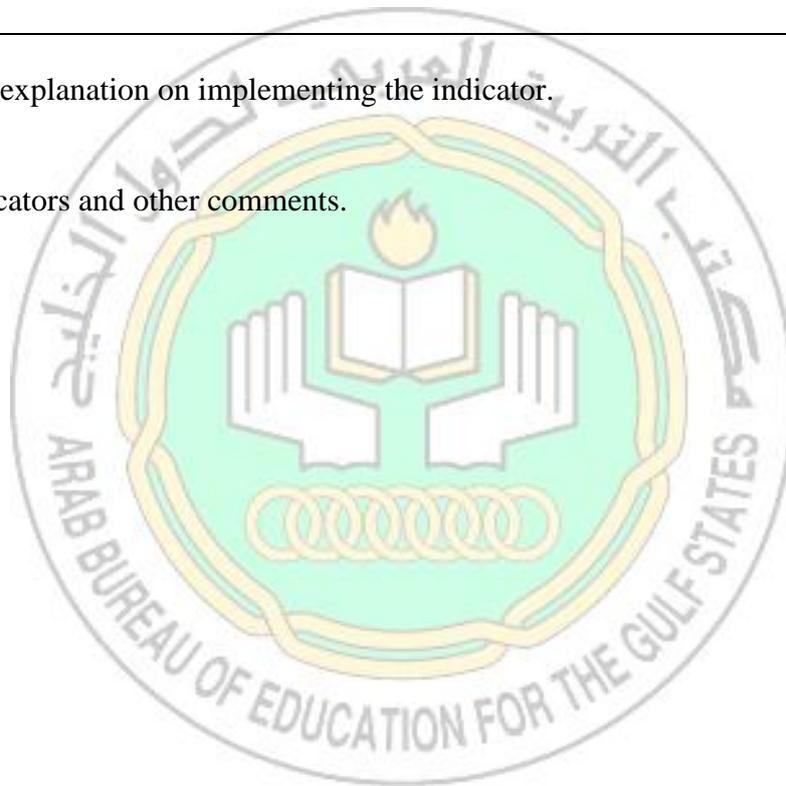
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>58. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>58.1. Illustrations</i>				✓
<i>58.2. Content</i>				✓
<i>58.3. Activities</i>				✓
<i>58.4. Practice Exercises</i>				✓
<i>58.5. Assessment exercises</i>				✓
<i>58.6. Skills</i>				✓
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>59. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
59.1. <i>Illustrations</i>				✓
59.2. <i>Content</i>				✓
59.3. <i>Activities</i>				✓
59.4. <i>Practice Exercises</i>				✓
59.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 12			
		Textbook Title: Science			
		Chapter Title: Mixtures and solutions			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>54. Alignment of the translated texts to the philosophy of the original textbook</b>					
54.1.	<i>Content of the Chapter</i>			✓	
54.2.	<i>Activities included in the chapter</i>		✓		
54.3.	<i>Learning objectives</i>	✓			
54.4.	<i>Practice exercises</i>				✓
54.5.	<i>Assessment exercises</i>		✓		
54.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Central role of student in the learning process</li> <li>- Presenting the scientific content in an interesting way by               <ol style="list-style-type: none"> <li>a) Using activities and questions that activate the students' prior knowledge, and develop the mental skills and critical thinking abilities,</li> <li>b) Using activities related to real life, math, other sciences and technology.</li> <li>c) Using practice exercises that aid the students in building and developing his own scientific knowledge</li> <li>c) considering students' cognitive development and background</li> </ol> </li> <li>- Encouraging students use their knowledge to explain everyday events, scientific events, and technological innovations and in decision making regarding everyday issues.</li> <li>- Integrating science, technology, society and environmental issues.</li> </ul> <p>1.1: <i>The concepts in the four lessons: Types of mixtures, Concentration of solutions, Factors affecting solubility and colligative properties of solutions are well explained by using examples and illustrations related to real life.</i></p> <p>1.2: <i>An experiment is presented at beginning of the chapters thus providing the students the opportunity to relate the concepts to concrete events that allows understanding.</i></p> <p>1.3: <i>1.3: The learning objectives are focused on the scientific content with little attention to thinking skills and higher level cognitive skills. Examples of the objectives include "Define solubility".</i></p> <p>1.5: <i>The assessment exercises and the "revision exercises" at the end of the chapter are almost closed, limited to the content of the chapters and represent direct applications of the content taught in the chapter. However, the exercises in the lesson (student book) and the ones in the</i></p>					

practice book are based on real life examples with emphasis on critical thinking.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>35. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
35.1.Length of sentences			✓	
35.2.Complexity of sentences		✓		
35.3.Diversity of language structures				✓
35.4.Number of concepts per chapter		✓		
35.5.Reuse of technical terms in subsequent lessons and chapters				✓
35.6.Clarity of definitions of technical terms			✓	
35.7.Using concrete examples to illustrate concepts				✓
35.8.Redundancy of terms and sentences with no educational benefit.				✓
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 3</p> <p>2.2: The presence of complex technical terms seems to have led to writing complex sentences and sometimes long sentences such as:            فاذا كلنت قوى التجاذب المتكونة بين جسيمات المذاب والمذيب أكبر من قوى التجاذب بين جسيمات المذاب نفسه فسوف تجذب جسيمات المذيب، و تفصل بعضها عن بعض و تحيط بها، ثم تبتعد جسيمات المذاب المحاطة بجسيمات المذيب عن المذاب الصلب، و تتجه نحو المحلول.</p> <p>2.4 There are many situations where the number of concepts is relatively large</p>				

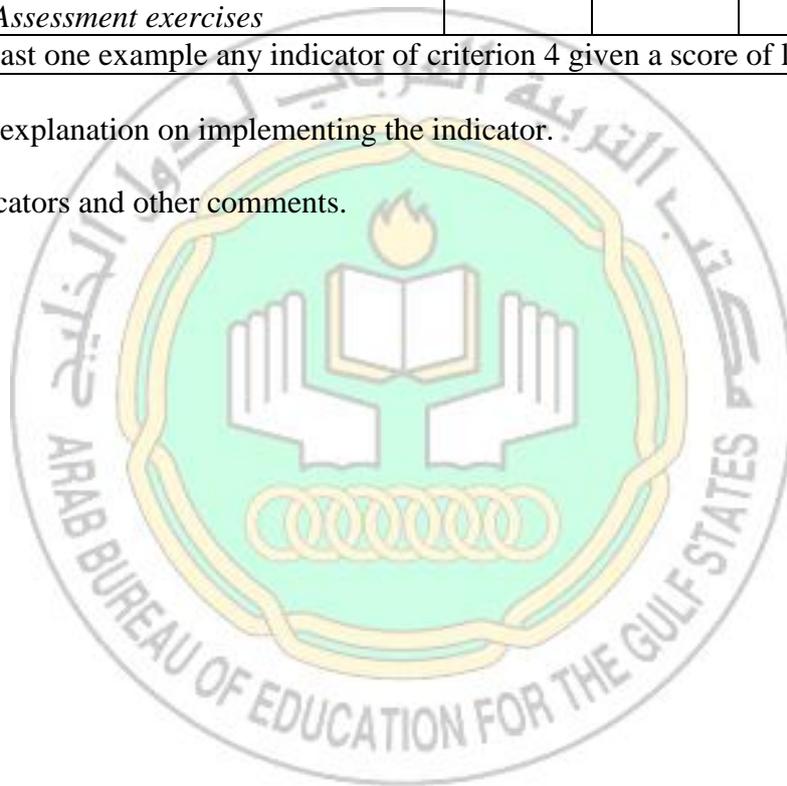
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>60. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
60.1. Illustrations				✓
60.2. Content			✓	
60.3. Activities		✓		
60.4. Practice Exercises				✓
60.5. Assessment exercises				✓
60.6. Skills				✓
<p>Illustrate by at last one example any indicator of criterion 3 given a score of less than 3</p> <p>3.2 and 3.3: Due to the complexity sentences, the content may be difficult understand. Also,</p>				

*the minimal use of real life examples and illustrations could make it hard for the students to understand the concepts.*

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>61. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>61.1. Illustrations</i>				✓
<i>61.2. Content</i>				✓
<i>61.3. Activities</i>				✓
<i>61.4. Practice Exercises</i>				✓
<i>61.5. Assessment exercises</i>				✓
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Science			
		Grade: 12			
		Textbook Title: Science			
		Chapter Title: Reaction rates			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>55. Alignment of the translated texts to the philosophy of the original textbook</b>					
55.1.	<i>Content of the Chapter</i>				✓
55.2.	<i>Activities included in the chapter</i>			✓	
55.3.	<i>Learning objectives</i>	✓			
55.4.	<i>Practice exercises</i>				✓
55.5.	<i>Assessment exercises</i>		✓		
55.6.	<i>Skills</i>				✓
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p><i>The book philosophy is based on:</i></p> <ul style="list-style-type: none"> <li>- Central role of student in the learning process</li> <li>- Presenting the scientific content in an interesting way by               <ol style="list-style-type: none"> <li>a) Using activities and questions that activate the students' prior knowledge, and develop the mental skills and critical thinking abilities,</li> <li>b) Using activities related to real life, math, other sciences and technology.</li> <li>c) Using practice exercises that aid the students in building and developing his own scientific knowledge</li> <li>c) considering students' cognitive development and background</li> </ol> </li> <li>-Encouraging students use their knowledge to explain everyday events, scientific events, and technological innovations and in decision making regarding everyday issues.</li> <li>-Integrating science, technology, society and environmental issues.</li> </ul> <p><i>1.1: The concepts in the three lessons: A model for reaction rates, factors affecting reaction rates and reaction rate laws are well explained by using examples and illustrations related to real life. For example, to help students understand the concept of burning, the student is encouraged to compare the combustion reaction of a candle in normal atmosphere and in atmosphere concentrated with oxygen in order to reveal the effect of concentration of reactants on the rate of a chemical reaction.</i></p> <p><i>1.2: An experiment is presented at beginning of the chapters thus providing the students the opportunity to relate the concepts to concrete events that allows understanding.</i></p> <p><i>1.3: The learning objectives are focused on the scientific content with little attention to thinking skills and higher level cognitive skills. Examples of the objectives include "Define solubility".</i></p>					

1.5: The assessment exercises and the "revision exercises" at the end of the chapter are almost closed, limited to the content of the chapters and represent direct applications of the content taught in the chapter. However, the exercises in the lesson (student book) and the ones in the practice book are based on real life examples with emphasis on critical thinking.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>36. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
36.1. Length of sentences				✓
36.2. Complexity of sentences				✓
36.3. Diversity of language structures				✓
36.4. Number of concepts per chapter				✓
36.5. Reuse of technical terms in subsequent lessons and chapters				✓
36.6. Clarity of definitions of technical terms				✓
36.7. Using concrete examples to illustrate concepts				✓
36.8. Redundancy of terms and sentences with no educational benefit.				✓
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>62. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
62.1. Illustrations				✓
62.2. Content				✓
62.3. Activities				✓
62.4. Practice Exercises				✓
62.5. Assessment exercises				✓
62.6. Skills				✓

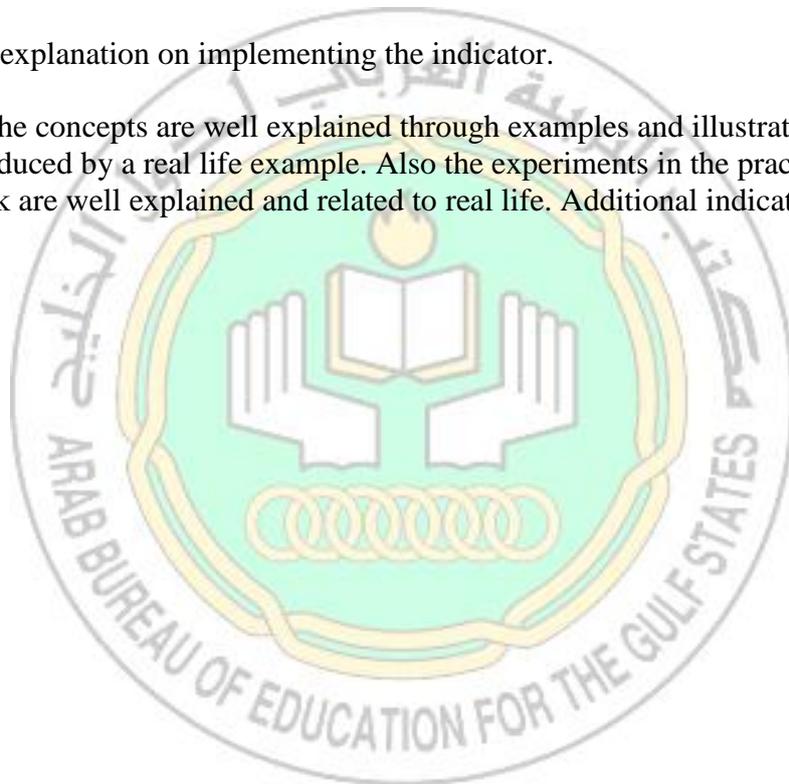
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>63. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
63.1. <i>Illustrations</i>				✓
63.2. <i>Content</i>				✓
63.3. <i>Activities</i>				✓
63.4. <i>Practice Exercises</i>				✓
63.5. <i>Assessment exercises</i>				✓
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

In conclusion, the concepts are well explained through examples and illustrations: each concept is introduced by a real life example. Also the experiments in the practice book and in the student book are well explained and related to real life. Additional indicators and other comments.





## REPORT ON CHEMISTRY TEXTBOOKS IN GRADE 12- FIRST TERM

The following report is an evaluation of science books in grade 12 (first semester). Each of the student textbook, practice book and teacher guidebook is divided into five chapters. Three chapters: (1) "Mixtures and solutions ", (2) "Reaction rates "and (3) "Chemical equilibrium" were analyzed. The following results are based on the three evaluation forms.

The analysis concerning the **alignment of the translated texts to the philosophy of the original textbook** showed that the **content** is well aligned with the philosophy of the original textbooks. It is evident that chapters 2 and 3 in the student textbook, practice book and teacher guidebook are aligned with the philosophy due to the presence of examples and illustrations from real life. In chapter 2, the concepts are explained by using approaches such as comparing the combustion reaction of a candle in normal atmosphere and in atmosphere concentrated with oxygen in order to demonstrate the effect of concentration of the reactant during the chemical reaction. In chapter 3, the chemical equilibrium was explained by using the "seesaw" to compare the state of balance with equilibrium in a chemical reaction. Alternatively, in chapter 1, there number of concepts is relatively large, a situation that might lead to some difficulties for the students.

The presence of a preparation activity at the beginning of the three chapters is very useful because it can help the student to activate his prior knowledge about the concepts in the chapter and thus be better prepared to understand the content. Moreover, the learning objectives are not aligned with the textbook philosophy because they are focused on content and not written at higher cognitive levels. Furthermore, the assessment and revision exercises at the end of the chapter are almost closed, limited to the content of the chapters and direct applications without any concrete examples.

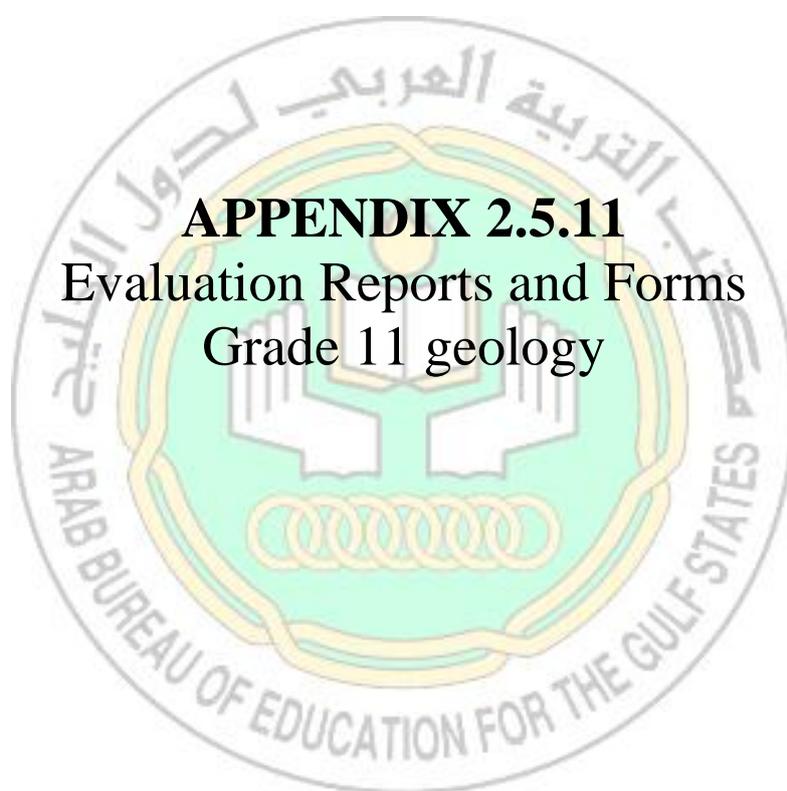
**Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students:** The analysis showed the most of the chapters of the translated textbooks are suitable for the educational level of students. However, there are situation where the translation is not suitable (such as in chapter 1) because of the complexity of sentences and the number of concepts in the text for example:

فاذا كانت قوى التجاذب المتكونة بين جسيمات المذاب والمذيب أكبر من قوى التجاذب بين جسيمات المذاب نفسه فسوف تجذب جسيمات المذيب، و تفصل بعضها عن بعض و تحيط بها، ثم تبتعد جسيمات المذاب المحاطة بجسيمات المذيب عن المذاب الصلب، و تتجه نحو المحلول.

Finally, the other indicators: diversity of language structures, reuse of technical terms in subsequent lessons and chapters, using concrete examples to illustrate concepts, Redundancy of terms and sentences with no educational benefit see to be suitable for the educational level of Gulf students.

**Suitability of the Arabization of the translated textbooks to serve the math and science concepts:** Satisfactory evidence was found with respect to the 6 criteria in this rubric: (1) illustrations; (2) content; (3) activities; (4) practice exercises; (5) assessment exercises and (6) skills except for the content and the activities in chapter 1, in which the length and complexity of some sentences might make it hard for the students to grasp the concepts.

**Suitability of the translated textbooks to the cultural context of The Gulf States:** Satisfactory evidence was found with respect to the 5 criteria in this rubric: (2) content, (3) activities, (4) practice exercises and (5) assessment for chapters 1, 2 and 3.



**APPENDIX 2.5.11**  
Evaluation Reports and Forms  
Grade 11 geology



## Table of content Science Level Green

Chapter	Title	Place in Arabic book
1.	The Nature of Science	Chapter 1, Second Int.
2.	Minerals	Chapter 1, Secondary 2 Geology
3.	Rocks	
4.	Atmosphere	
5.	Weather	
6.	Climate	
7.	Earth in Space	
8.	Life's Structure and Classification	
9.	Cell Processes	Chapter 7, Third Int.
10.	Cell Reproduction	Chapter 7, Third Int.
11.	Heredity	NOT FOUND
12.	Adaptations over Time	NOT FOUND
13.	Circulation and Immunity	Chapter 5, Second Int.
14.	Digestion, Respiration and Excretion	Chapter 6, Second Int.
15.	Support, Movement and Responses	Chapter 7, Second Int.
16.	Regulation and Reproduction	Chapter 8, Second Int.
17.	Plants	Chapter 9, Second Int.
18.	Interactions of Living Things	Chapter 10, Second Int.
19.	Conserving Resources	Chapter 10, Second Int.
20.	Properties and Changes of Matter	
21.	Substances, Mixtures and Solubility	Chapter 2, Second Int.
22.	States of Matter	Chapter 3, Second Int.
23.	Newton's Law of Motion	NOT FOUND
24.	Energy and Energy Resources	Chapter 4, Second Int.

## Science Level Red

Chapter	Title	Place in Arabic book
1.	The Nature of Science	Chapter 1, First Int.
2.	Measurement	Chapter 2, First Int.
3.	Matter and its Changes	Chapter 3, First Int.
4.	Atoms, Elements and the Periodic Table	Chapter 4, First Int.
5.	Motion, Forces and Simple Machines	Chapter 5, First Int.
6.	Energy	
7.	Electricity and Magnetism	Chapter 6, First Int.
8.	Waves	
9.	Rocks and Minerals	Chapter 1, Secondary 2 Geology & Chapter 7, First Int.
10.	Forces Shaping Earth	Chapter 8, First Int.
11.	Weathering and Erosion	
12.	The Atmosphere in Motion	Chapter 9, First Int.
13.	Oceans	
14.	Exploring Space	Chapter 10, First Int.
15.	The Solar System and Beyond	Chapter 10, First Int.



16.	Cells- The Units of Life	Chapter 11, First Int.
17.	Invertebrate Animals	Chapter 12, First Int.
18.	Vertebrate Animals	Chapter 13, First Int.
19.	The Human Body	
20.	The Role of Genes in Inheritance	Chapter 14, First Int.
21.	Ecology	Chapter 15, First Int.
22.	Earth's Resources	Chapter 16, First Int.

### Science Level Blue

Chapter	Title	Place in Arabic book
1.	The Nature of Science	Chapter 9, Third Int.
2.	Traits and How they Change	NOT FOUND
3.	Interactions of Human Systems	NOT FOUND
4.	Interactions of Life	NOT FOUND
5.	The Nonliving Environment	NOT FOUND
6.	Ecosystem	NOT FOUND
7.	Plate Tectonics	Chapter 1, Secondary 3 Geology
8.	Earthquakes and Volcanoes	Chapter 2, Third Int.
9.	Clues to Earth's Past	NOT FOUND
10.	Geologic Time	NOT FOUND
11.	The Sun-Earth-Moon System	NOT FOUND
12.	The Solar System	NOT FOUND
13.	Stars and Galaxies	NOT FOUND
14.	Inside the Atom	Chapter 3, Third Int.
15.	The Periodic Table	Chapter 4, Third Int.
16.	Atomic Structure and Chemical Bonds	Chapter 5, Third Int.
17.	Chemical Reactions	Chapter 6, Third Int.
18.	Motion and Momentum	Chapter 9, Third Int.
19.	Forces and Newton's Laws	Chapter 9, Third Int.
20.	Work and Simple Machines	
21.	Thermal Energy	Chapter 11, Second Int.
22.	Electricity	Chapter 11, Third Int.
23.	Magnetism	Chapter 12, Third Int.
24.	Waves, Sound and Light	Chapter 12, Second Int.

### Geology (Earth Science) Textbook

Chapter	Title	Place in Arabic book
1.	The nature of science	NOT FOUND
2.	Mapping our world	NOT FOUND
3.	Matter and atomic structure	NOT FOUND
4.	Minerals	Chapter 1, Secondary 2 Geology
5.	Igneous rocks	Chapter 2, Secondary 2 Geology
6.	Sedimentary and metamorphic rocks	Chapter 3, Secondary 2 Geology
7.	Weathering erosion and soil	NOT FOUND
8.	Mass movements wind and glaciers	NOT FOUND
9.	Surface water	NOT FOUND



10.	Groundwater	Chapter 4, Secondary two Geology
11.	Atmosphere	NOT FOUND
12.	Meteorology	NOT FOUND
13.	The nature of storms	NOT FOUND
14.	Climate	NOT FOUND
15.	Physical oceanography	NOT FOUND
16.	The marine environment	NOT FOUND
17.	Plate tectonics	Chapter 1, Secondary 3 Geology
18.	Volcanic activity	Chapter 2, Secondary 3 Geology
19.	Earthquakes	NOT FOUND
20.	Mountain building	NOT FOUND

### الثانوي الثالث جيولوجيا

Chapter	Title	Place
1.	الصفائح الأرضية	Chapter 7, blue level Chapter 17, geology textbook
2.	البراكين	Chapter 18, geology textbook

### الثانوي الثاني جيولوجيا

Chapter	Title	Place in English Book
	المعادن	Chapter 2, green level Chapter 9, red level Chapter 4, geology textbook
	الصخور النارية	Chapter 5, Geology textbook
	الصخور الرسوبية والمتحولة	Chapter 6, Geology Textbook
	المياه الجوفية	Chapter 10, Geology Textbook



<b>Book Evaluation Form</b>	Subject: Geology				
	Grade: Secondary TWO				
	Semester: ONE				
	Textbook Title: Geology				
	Chapter Title 1:				
Completely different	Large difference	Little difference	Difference due only to cultural	No difference	
<b><i>Criterion/Indicator</i></b>					
<b>56. Agreement of the translated Arabic book with that of the English book</b>					
		X			
			X		
		X			
			X		
			X		
				X	

**TABLE OF CONTENT:**

Class: Secondary Two

Semester 1

**(Please refer to the copies of the table of content of the two versions for comparison) And note that one chapter also appears in other books (Science Level Green, Science Level Red and the Geology Textbook)**

This chapter is found in three English books:

1. Geology textbook (Chapter 4: Minerals)
57. Science Level Green (Chapter 2: Minerals)
58. Science Level Read (Chapter 9: Rocks and Minerals)

This chapter is translated from more than one chapter in more than one book. The organizational layout of the chapter is taken mainly from the science level green, however, with many modifications.

Starting with the introductory activity in the Arabic version of the book, the activity is translated from the geology textbook (discovery lab as is).

However, I could not find the section entitled “geological facts” (in the Arabic version) anywhere, nor did I find the picture in the beginning of the chapter (in the Arabic version of the book) anywhere within the 3 original books.

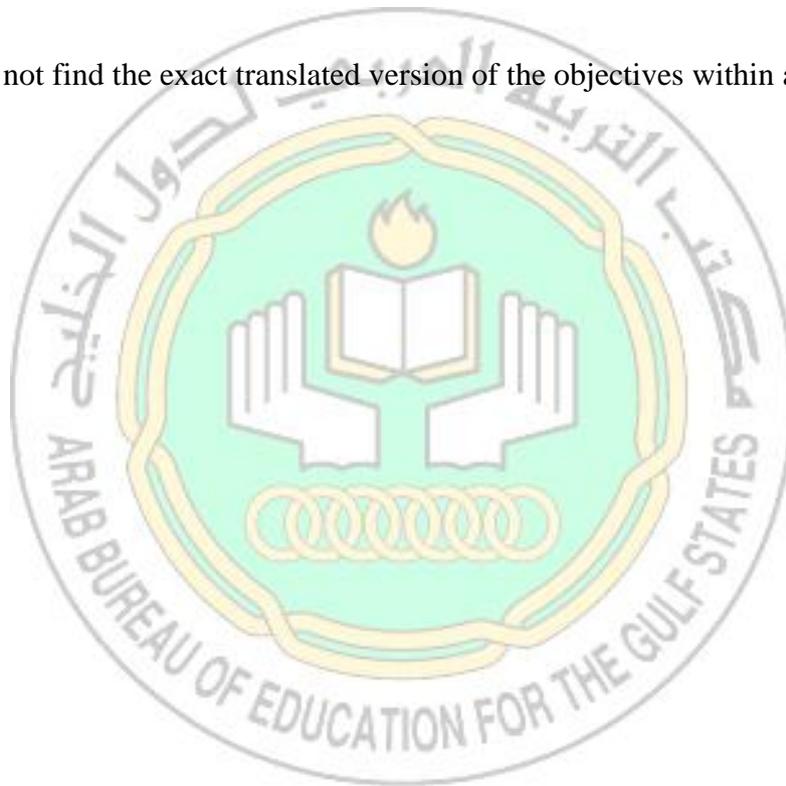


Moving on to the first section of the chapter, a section defining what minerals are is presented. This section (with this title) is found in the 3 original books (What is a mineral). The section in the Arabic version is taken mainly from the science level green but with major modifications where examples are eliminated and only one-sentence definition is found.

Same thing applies to mineral characteristics where I could not find the translated text is any of the 3 original books. Moreover, in the science level green, the authors state that “about 4000 different minerals are found on Earth” (page 30); however, this number is 3000 in the Arabic version of the book.

Following sections are sections that are majorly taken from the Geology textbook now with some cultural modifications (where applicable) and some eliminations of a few practice exercises and some sentences within the content (but not causing major modifications in meanings).

Finally, I could not find the exact translated version of the objectives within any of the 3 original books.





<b>Book Evaluation Form</b>	Subject: Geology				
	Grade: Secondary TWO				
	Semester: TWO				
	Textbook Title: Geology				
	Chapter Title: Chapter 4: UnderGround Water				
Criterion/Indicator	Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>59. Agreement of the translated Arabic book with that of the English book</b>					
59.1. <i>Definitions and explanations in the chapter</i>			X		
59.2. <i>Activities included in the chapter</i>					X
59.3. <i>Learning objectives</i>		X			
59.4. <i>Practice exercises</i>			X		
59.5. <i>Assessment exercises</i>			X		
<i>1.6 Figures, pictures and illustrations</i>				X	

### **TABLE OF CONTENT:**

Class: Secondary Two

Semester 2

**(Please refer to the copies of the table of content of the two versions for comparison)**

This chapter is found in the English book:

1. Geology textbook (Chapter 10: Underground Water)

This chapter is translated from more than one chapter in more than one book. The organizational layout of the chapter is taken mainly from the science level green (as a science book in general and not as science content).

#### ***1.4 Definitions and explanations in the chapter***

There exist little differences regarding the definitions and explanations of the chapter. First of all, there is a missing section (that is found in the English version of the book only) (see hard copies). Other than that, the differences appear in defining certain science concepts (see page 38 in the Arabic version of the book) where explanations are largely different (but this has occurred only once). Therefore, the overall agreement of this item is that there exists some difference (but that has little effect on the content of the chapter as a whole).



### ***1.5 Activities included in the chapter***

Activities within the two chapters are the same (with very few instances where some activities are missing from within the Arabic version of the book, but found in the English version) (see hard copies)

### ***1.6 Learning objectives***

There exists a large difference in objectives between the two books. One objective is extra (found in the Arabic version but not in the English version) while another objective is translated differently.

### ***1.4 Practice exercises***

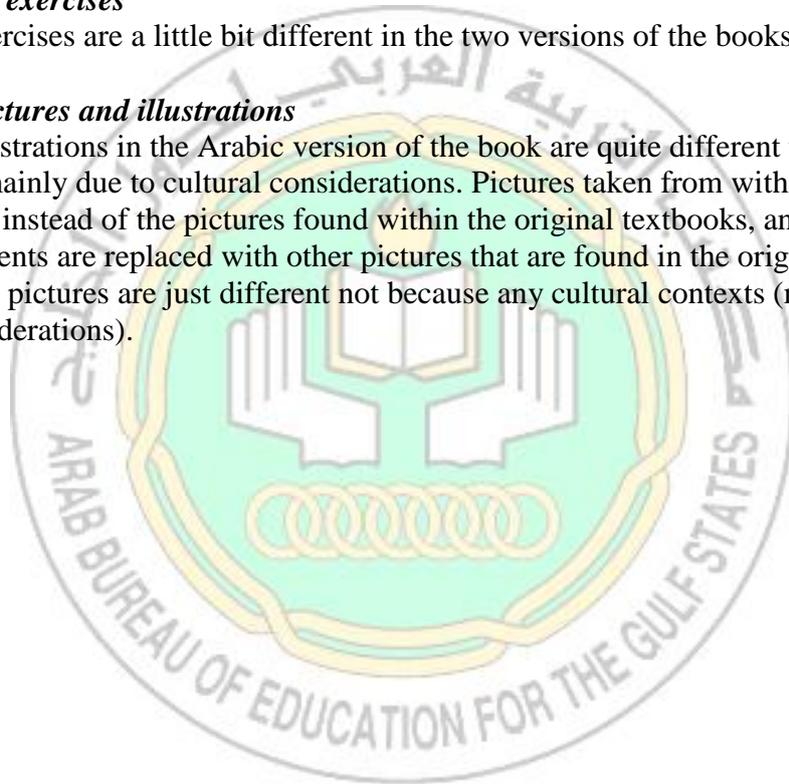
Practice exercises are a little bit different in the two versions of the books.

### ***1.7 Assessment exercises***

Assessment exercises are a little bit different in the two versions of the books.

### ***1.8 Figures, pictures and illustrations***

Figures and illustrations in the Arabic version of the book are quite different that those in the original book mainly due to cultural considerations. Pictures taken from within the context of KSA are added instead of the pictures found within the original textbooks, and pictures of Gulf male students are replaced with other pictures that are found in the original textbooks. However, some pictures are just different not because any cultural contexts (may be due to copyright considerations).





## Book Evaluation Form

Subject: Geology

Grade: Secondary 2

Textbook Title: Geology

Chapter Title: Chapter 1: Minerals

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>60. Alignment of the translated texts to the philosophy of the original textbook</b>				
60.1. <i>Content of the Chapter</i>		X		
60.2. <i>Activities included in the chapter</i>			X	
60.3. <i>Learning objectives</i>			X	
60.4. <i>Practice exercises</i>				X
60.5. <i>Assessment exercises</i>			X	
60.6. <i>Skills</i>				X
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.1 The philosophy of the book states that the book content reflects the nature of science and emphasizes how to understand the problem, hypothesize and test the hypothesis. However, despite the fact the content of the chapter is presented in a very exciting and fruitful scientific way, it does not tackle the scientific method as it states it does. Moreover, the only aspect of the nature of science that it tackles is the history of science. Examples of the history of science are present throughout the chapter where students are always given a brief history of almost all the science concepts under study. However, there is no explicit mentioning of the tentative, creative or empirical natures of science.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>37. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
37.1. <i>Length of sentences</i>			X	
37.2. <i>Complexity of sentences</i>				X
37.3. <i>Diversity of language structures</i>				X
37.4. <i>Number of concepts per chapter</i>			X	
37.5. <i>Reuse of technical terms in subsequent lessons and chapters</i>				X
37.6. <i>Clarity of definitions of technical terms</i>				X
37.7. <i>Using concrete examples to illustrate</i>				X



<i>concepts</i>				
<i>37.8.Redundancy of terms and sentences with no educational benefit.</i>				X
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>64. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>64.1. Illustrations</i>				X
<i>64.2. Content</i>				X
<i>64.3. Activities</i>				X
<i>64.4. Practice Exercises</i>			X	
<i>64.5. Assessment exercises</i>				X
<i>64.6. Skills</i>				X
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>65. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>65.1. Illustrations</i>				X
<i>65.2. Content</i>				X
<i>65.3. Activities</i>			X	
<i>65.4. Practice Exercises</i>			X	
<i>65.5. Assessment exercises</i>				X
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
Additional indicators and other comments.



## Geology Report

**Subject:** Geology

Semester 1

**Class:** Secondary 2

The following report is an evaluation of geology books in Secondary 2 (1<sup>st</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into two chapters. One out of the two chapters was selected: Chapter 1; Minerals. The chapter was selected for evaluation from teacher's guide, student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **Philosophy of the book:**

- Reflect the nature of science
- Scientific method:
  - Understanding the problem
  - Setting the hypothesis
  - Regulating changes
  - Generalizing
- Realize the importance of information technology and telecommunication within the educational process through the transfer of scientific knowledge, the collection and the analysis of data.
- Help students become independent learners
- Promote knowledge seekers and knowledge analyzers
- Promote decision making, critical thinking, and problem solving skills
- Integrate the concepts of science with daily life
- Integrate geology with other branches in science
- Self assessment

### **1. Alignment of the translated texts to the philosophy of the original textbook.**

Despite the fact that the content of the chapter is presented in an interesting scientific layout, it is not aligned with some elements that are stated in the philosophy of the book.



The nature of science is not tackled as the philosophy states: there is only mentioning of the history of science.

Moreover, it is important to mention that the scientific method (skills and knowledge) can be acquired only if the teacher implements the self activities that are found in the teacher's guide. Student's textbook does not include this skill.

The most evident alignment is the technological enlightenment that the book offers in accordance to its philosophy. Information technology and telecommunication are present in geological contexts throughout the chapter in such a way that students get to see the benefit of what they learn within the 21<sup>st</sup> century.

Critical thinking skills as well as problem solving skills are evident within the activities of the textbook, as well as within teacher's guide. However, the book does not seem to prepare an "independent learner" as it states it does. There are no instances of discovery or guided activities and the information is presented as needed. I recommend that critical thinking and problem solving skills be included within the content and guiding questions rather than within activities only.

Finally, the philosophy of the activity book emphasizes the importance of teaching students the nature of science as well as the scientific method. However, activities within this chapter do not follow this approach: they are almost all inquiry level 1 on Herron's scale.

## **2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

The geology book for this grade offers a very new and innovative approach towards improving students' attitudes towards science. It is translated in such a way that takes into account the students' educational levels regarding the length as well as complexity of sentences. Concepts are organized and fully explained and examples of everyday life are clearly presented. Moreover, figures, pictures and illustrations serve to further explain the science concepts in a suitable way.

## **3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**

All items clearly explain the science concepts. Moreover, teacher's guide offers extra guidance for content, activities and projects that enrich the scientific elaboration of the concepts at hand.

Practice exercise however can be improved to focus more on discovery to enhance students' scientific curiosity which hopefully leads to better comprehension of the science concept.

## **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

The book is well aligned with the Gulf context. Where possible, the authors do include pictures and examples of minerals and other related information that are present in Gulf areas. The chapter is very relevant to students as they can see how its content is relevant to their everyday life.



<b>Book Evaluation Form</b>	Subject: Geology			
	Grade: Secondary 2			
	Textbook Title: Geology			
	Chapter Title: Chapter 1: Ground Water			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>61. Alignment of the translated texts to the philosophy of the original textbook</b>				
		X		
				X
	X			
		X		
				X
				X
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 Learning objectives are didactic and aligned with the philosophy of the book. For example, objectives include classification of storage of ground water and its movement with water cycle, explanation of what is meant by groundwater storage, relating between the ingredients of the groundwater storage and the springs.</p> <p>Note that these objectives are clearly found in the chapters as information. The objectives do not seek to promote students' critical thinking or problem solving skills as the philosophy of the book states. Moreover, the objectives do not tackle nature of science nor the scientific method.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>38. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
				X
			X	
				X
				X
			X	
				X
			X	



<i>concepts</i>				
<i>38.8.Redundancy of terms and sentences with no educational benefit.</i>				X
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>66. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
<i>66.1. Illustrations</i>				X
<i>66.2. Content</i>			X	
<i>66.3. Activities</i>				X
<i>66.4. Practice Exercises</i>				X
<i>66.5. Assessment exercises</i>			X	
<i>66.6. Skills</i>				X
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>67. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
<i>67.1. Illustrations</i>				X
<i>67.2. Content</i>			X	
<i>67.3. Activities</i>				X
<i>67.4. Practice Exercises</i>				X
<i>67.5. Assessment exercises</i>				X
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
Additional indicators and other comments.



## Geology Report

**Subject:** Geology

Semester 2

**Class:** Secondary 2

The following report is an evaluation of physics books in Secondary 2 (2<sup>nd</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into two chapters. One out of the two chapters was selected: Chapter 1; Ground Water. The chapter was selected for evaluation from teacher's guide, student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **Philosophy of the book:**

- Reflect the nature of science
- Scientific method:
  - Understanding the problem
  - Setting the hypothesis
  - Regulating changes
  - Generalizing
- Realize the importance of information technology and telecommunication within the educational process through the transfer of scientific knowledge, the collection and the analysis of data.
- Help students become independent learners
- Promote knowledge seekers and knowledge analyzers
- Promote decision making, critical thinking, and problem solving skills
- Integrate the concepts of science with daily life
- Integrate geology with other branches in science
- Self assessment

### **1. Alignment of the translated texts to the philosophy of the original textbook.**

The content of the book is well aligned with the philosophy of the book leaving space for students to critically think and analyze real life instances. However, the objectives do not reflect these skills. That is, the outcomes that the objectives state are all didactic and do not



expect students to be independent learners or decision makers. All the objectives emphasize is a collection of recalling and stating of information that is already found in the chapter of the book.

The activities and practice exercise of the book contain some elements of higher order thinking skills which the philosophy of the book does state. However, there is no mentioning of information technology, telecommunication or technological advancements that are aligned with the concepts at hand. The philosophy of the book stresses the importance of transferring knowledge through information technology, the point which seems un-evident within this chapter.

In addition, the nature of science is not tackled as the philosophy states: there is only mentioning of the history of science.

Moreover, it is important to mention that the scientific method (skills and knowledge) can be acquired only if the teacher implements the self activities that are found in the teacher's guide. Student's textbook does not include this skill.

Finally, the philosophy of the activity book emphasizes the importance of teaching students the nature of science as well as the scientific method. However, activities within this chapter do not follow this approach: they are almost all inquiry level 1 on Herron's scale.

## **2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

The book is translated in such a way that takes into account the students' educational levels regarding the length as well as complexity of sentences. Concepts are organized and fully explained and examples of everyday life are clearly presented. Moreover, figures, pictures and illustrations serve to further explain the science concepts in a suitable way.

## **3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**

All items clearly explain the science concepts. Moreover, the teacher's guide offers extra guidance for content, activities and projects that enrich the scientific elaboration of the concepts at hand.

Practice exercise however can be improved to be more than direct exercise to become more discovery learning examples to enhance students' scientific curiosity which hopefully will lead to better comprehension of the science concept.

## **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

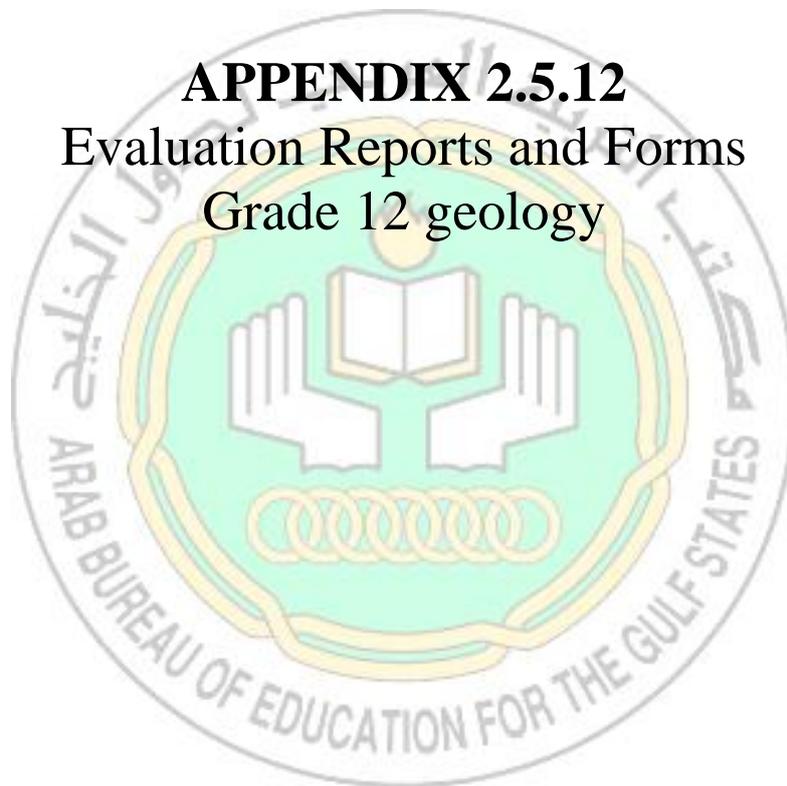
The book is well aligned with the Gulf context. Where possible, the authors do include pictures and examples of minerals and other related information that are present in Gulf areas. The chapter is very relevant to students as they can see how its content is relevant to their everyday life



## **APPENDIX 2.5.12**

### Evaluation Reports and Forms

### Grade 12 geology





<b>Book Evaluation Form</b>	Subject: Geology				
	Grade: Secondary THREE				
	Semester: ONE				
	Textbook Title: Geology				
	Chapter Title 1: Chapter 1 Plate Tectonics				
Completely different	Large difference	Little difference	Difference due only to cultural	No difference	
<b><i>Criterion/Indicator</i></b>					
<b>62. Agreement of the translated Arabic book with that of the English book</b>					
		X			
					X
					X
					X
				X	
				X	

### **TABLE OF CONTENT:**

Class: Secondary Two

Semester 1

**(Please refer to the copies of the table of content of the two versions for comparison)**

This chapter is found in three English books:

1. Geology textbook (Plate Tectonics)
63. Science Level Green (Plate Tectonics)

#### ***1.7 Definitions and explanations in the chapter***

There exist little differences regarding the definitions and explanations of the chapter. The chapter is first translated from the Science level blue and then the rest of the chapter is translated from the geology textbook as is. There exists very little evidence (that causes minor changes to the meaning). Note that I have mainly compared the Arabic chapter with the chapter found in the geology textbook and that in the science level blue.

#### ***1.8 Activities included in the chapter***

Activities within the two chapters are the same in the two books.

#### ***1.9 Learning objectives***

Objectives are the same in the two chapters of the two books.



#### **1.4 Practice exercises**

Practice exercises are the same in the two versions of the books.

#### **1.9 Assessment exercises**

Assessment exercises are the same in the two versions of the books.

#### **1.10 Figures, pictures and illustrations**

Figures and illustrations in the Arabic version of the book are quite different that those in the original book mainly due to cultural considerations. Pictures taken from within the context of KSA are added instead of the pictures found within the original textbooks, and pictures of Gulf male students are replaced with other pictures that are found in the original textbooks. However, some pictures are just different not because any cultural contexts (may be due to copyright considerations).





<b>Book Evaluation Form</b>	Subject: Geology			
	Grade: Secondary 3			
	Textbook Title: Geology			
	Chapter Title: Chapter 2; Volcanoes			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>64. Alignment of the translated texts to the philosophy of the original textbook</b>				
64.1. <i>Content of the Chapter</i>				
64.2. <i>Activities included in the chapter</i>				
64.3. <i>Learning objectives</i>				
64.4. <i>Practice exercises</i>				
64.5. <i>Assessment exercises</i>				
64.6. <i>Skills</i>				
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 Objectives of the chapter are not well-aligned with the philosophy of the book. The objectives include description of the effect of plates in volcanic formation, indicating the principle areas of volcanic activity, introducing parts of a volcano, distinguishing among volcanic terrains.</p> <p>1.4 Practice exercises do not prepare independent learners nor do they promote problem solving and critical thinking skills. At some instances, the solution is given and students' task is to verify it. Other instances are inquiry level 1 on Heron's scale where steps are always provided. No critical thinking or problem solving skills could be acquired from these activities.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>39. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
39.1. <i>Length of sentences</i>				
39.2. <i>Complexity of sentences</i>				
39.3. <i>Diversity of language structures</i>				
39.4. <i>Number of concepts per chapter</i>				
39.5. <i>Reuse of technical terms in subsequent lessons and chapters</i>				



39.6. <i>Clarity of definitions of technical terms</i>				X
39.7. <i>Using concrete examples to illustrate concepts</i>				X
39.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				X
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>68. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
68.1. <i>Illustrations</i>			X	
68.2. <i>Content</i>				X
68.3. <i>Activities</i>				X
68.4. <i>Practice Exercises</i>			X	
68.5. <i>Assessment exercises</i>			X	
68.6. <i>Skills</i>				X
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				
Ambiguous fact: كلمة ماجما (magma) مأخوذة من الكلمة الإغريقية (dough) وتعني عجينة. This could be a translation problem because the words magma and dough are not related in the Arabic context (thus needs consideration).				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>69. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
69.1. <i>Illustrations</i>			X	
69.2. <i>Content</i>				X
69.3. <i>Activities</i>				X
69.4. <i>Practice Exercises</i>			X	
69.5. <i>Assessment exercises</i>				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
 Additional indicators and other comments.



## Geology Report

**Subject:** Geology

Semester 1

**Class:** Secondary 3

The following report is an evaluation of geology books in Secondary 3 (1<sup>st</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book. Each of those books is divided into two chapters. One out of the two chapters was selected: Chapter 2; Volcanoes. The chapter was selected for evaluation from the student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **Philosophy of the book:**

- Reflect the nature of science
- Scientific method:
  - Understanding the problem
  - Setting the hypothesis
  - Regulating changes
  - Generalizing
- Realize the importance of information technology and telecommunication within the educational process through the transfer of scientific knowledge, the collection and the analysis of data.
- Help students become independent learners
- Promote knowledge seekers and knowledge analyzers
- Promote decision making, critical thinking, and problem solving skills
- Integrate the concepts of science with daily life
- Integrate geology with other branches in science
- Self assessment

### **1. Alignment of the translated texts to the philosophy of the original textbook.**

The content of the chapter is well aligned with the philosophy of the book as it includes several examples of daily life as well as relevant examples within the context of KSA. Moreover, activities as well as assessment exercises at the end of the chapter promote critical thinking and problem solving skills as students are given the opportunity to conduct their own experiments and evaluate the results (with guidance from the book). However, practice exercises are very academic and direct; they are not aligned with the philosophy of promoting independent learners through this book.



Objectives are typically Bloom levels 1 and 2 with no mentioning of higher order thinking skills. Unfortunately, objectives focus on recalling information that is present in the chapter.

Finally, the skills included throughout the chapter include analysis of knowledge, critical thinking skills, problem solving skills and the ability to plan and conduct experiments. On the other hand, decision making, problem solving skills and self assessment skills are not evident within this chapter.

## **2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

The length and complexity of sentences is appropriate to the students' levels of Secondary 3. Moreover, at the beginning of each chapter, there is a part where previously used technical terms are reused in a new chapter.

The new technical terms are categorized and clearly defined in the chapter, and examples (including pictures, graphs and figures) are appropriately used and explained for secondary 3 students.

## **3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**

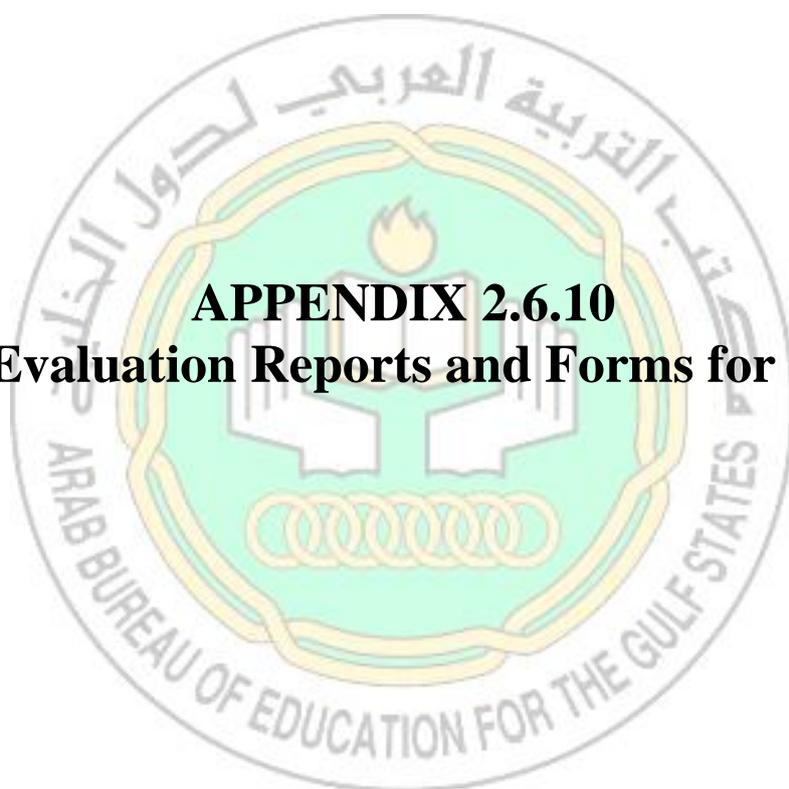
All science concepts are clearly explained. The activities, practice exercises as well as assessment exercises reflect the science concepts in a suitable manner with no scientific ambiguities.

## **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

Scientific concepts are linked with the context of KSA and the Arab peninsula which is an effective way of making sense of what is learned within the context of students. Pictures are expressive of the concepts under study, but are not necessarily taken from KSA contexts (when not possible). However, whenever possible, figures and pictures of areas within KSA are included. Assessment exercises also include instances of the context of KSA linked with the scientific concepts at hand.



**APPENDIX 2.6.10**  
**Physics Evaluation Reports and Forms for Grade 10**





## Semester 1

### Arabic/English Agreement

Subject: **Physics** Class: **Secondary One-Table of content Semester 1**

**English Version:** Physics Textbook

Chapters in the order that appears in the Arabic version Chapters 1, 2, 3 and 4

**(Please refer to the copies of the table of content of the two versions for comparison)**

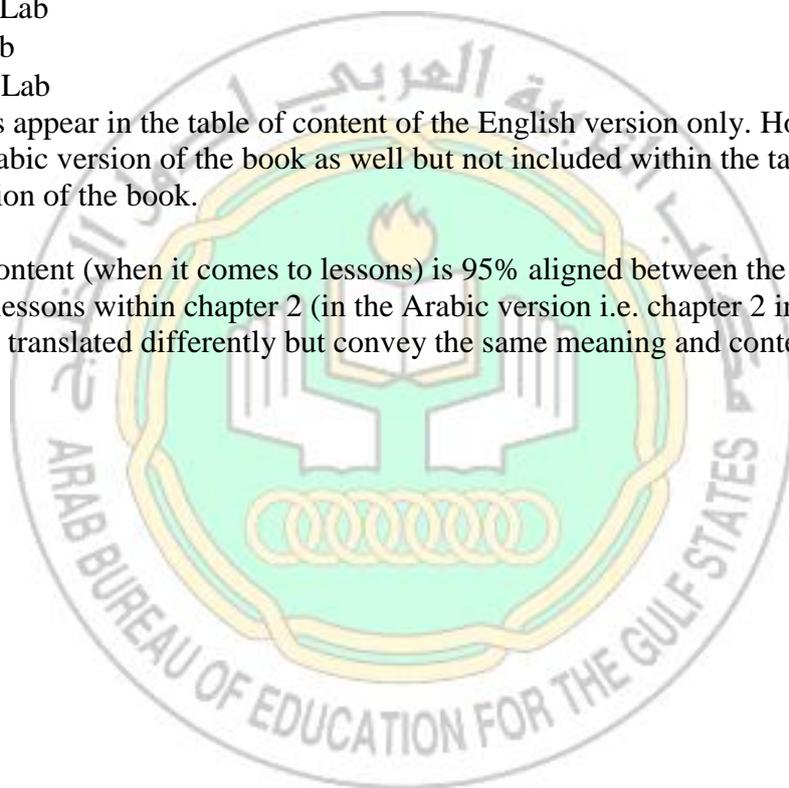
- The tables of contents of the two versions are 95% aligned by lessons, lesson titles and translations of titles.

- In every chapter in the English version, there are sections (mainly activity labs) that are missing from the table of content of the Arabic section. These sections are:

- Launch Lab
- Mini Lab
- Physics Lab

- These sections appear in the table of content of the English version only. However, they are found in the Arabic version of the book as well but not included within the table of content of the Arabic version of the book.

- The table of content (when it comes to lessons) is 95% aligned between the two versions of the book. Two lessons within chapter 2 (in the Arabic version i.e. chapter 2 in the English version too) are translated differently but convey the same meaning and content.





<b>Book Evaluation Form</b>	Subject: Physics				
	Grade: Secondary One				
	Semester: One				
	Textbook Title: Physics				
	Chapter Title: Accelerated Motion				
<i>Criterion/Indicator</i>	Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>65. Agreement of the translated Arabic book with that of the English book</b>					
65.1. <i>Definitions and explanations in the chapter</i>					X
65.2. <i>Activities included in the chapter</i>					X
65.3. <i>Learning objectives</i>					X
65.4. <i>Practice exercises</i>					X
65.5. <i>Assessment exercises</i>					X
1.6 <i>Figures, pictures and illustrations</i>				X	

**1.1 --- 1.5 Definitions and explanations in the chapter, Activities included in the chapter, Learning objectives, Practice exercises, and Assessment exercises**

- The two books are exactly aligned regarding content, definitions of concepts, examples, and activities.

**1.6 Figures, pictures and illustrations**

Figures and illustrations in the Arabic version of the book are quite different that those in the original book mainly due to cultural considerations. The difference in pictures does not affect meaning at all. The content of each picture is the same (the image delivers the same message in both versions of the book).



## Arabic/English Agreement

Subject: **Physics** Class: **Secondary One-Table of content Semester 2**

**English Version:** Physics Textbook

Chapters in the order that appears in the Arabic version Chapters 5, 6 and 7

**(Please refer to the copies of the table of content of the two versions for comparison)**

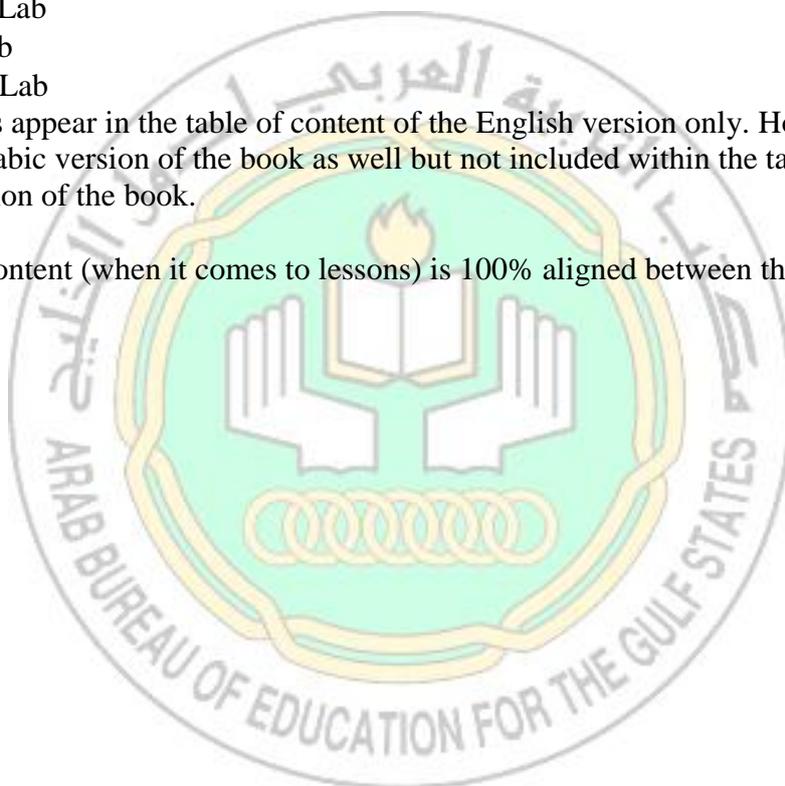
- The tables of contents of the two versions are 95% aligned by lessons, lesson titles and translations of titles.

- In every chapter in the English version, there are sections (mainly activity labs) that are missing from the table of content of the Arabic section. These sections are:

- Launch Lab
- Mini Lab
- Physics Lab

- These sections appear in the table of content of the English version only. However, they are found in the Arabic version of the book as well but not included within the table of content of the Arabic version of the book.

- The table of content (when it comes to lessons) is 100% aligned between the two versions of the book.





<b>Book Evaluation Form</b>	Subject: Physics				
	Grade: Secondary One				
	Semester: Two				
	Textbook Title: Physics				
	Chapter Title: Motion in Two Dimensions				
<i>Criterion/Indicator</i>	Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>66. Agreement of the translated Arabic book with that of the English book</b>					
66.1. <i>Definitions and explanations in the chapter</i>			X		
66.2. <i>Activities included in the chapter</i>					X
66.3. <i>Learning objectives</i>					X
66.4. <i>Practice exercises</i>			X		
66.5. <i>Assessment exercises</i>					X
<i>1.6 Figures, pictures and illustrations</i>				X	

### **1.1 Definitions and explanations in the chapter**

Only in two instances, there is an introductory paragraph found in the original book but does not appear in the Arabic version of the book.

The first instance is in Page 152 (English book) where there is a paragraph describing an everyday example of an encounter with a ball that does not appear in the Arabic version (highlighted in the chapter).

The other instance is on Page 159 (original book) where there is a paragraph of an example of combined relative velocities that is not in the Arabic version of the book.

### **1.2 Activities included in the chapter**

Activities included in the chapter are exactly the same within the two books. Only pictures of students performing some actions are changed to include Gulf students doing the same actions, thus causing no difference.

### **1.3 Learning objectives**

Objectives are translated exactly as in the original book.

### **1.4 Practice exercises**

The exercises that are found in the Arabic version of the book are translated exactly as in the original book. However, there are five exercises (out of 31) that are found in the original book but do not appear in the Arabic version of the book. It is worth mentioning here that the omitted exercises are not culturally nor contextually specific.



### **1.5 Assessment exercises**

Assessment exercises at the end of both chapters are the same.

### **1.7 Figures, pictures and illustrations**

Pictures and figures are different due to culture only, but convey the same content in both chapters. Tables and graphs are exactly the same.





## Physics Report

**Subject:** Physics

Semester 1

**Class:** Secondary 1

**Chapters:** 1 and 3

The following report is an evaluation of physics books in Secondary 1 (1<sup>st</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Two chapters out of four chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 1: Introduction to physics; and (2) chapter 3: Accelerated Motion. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **Philosophy of the book:**

#### ***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Introductory experiments
  - Introduction to physics laboratories
  - Enriching information with experiments
- Integrating physics with various branches of knowledge, with everyday life, with mathematical concepts and with societal issues.



**Activity Book: emphasis on:**

- Conducting experiments that promote students' scientific knowledge
- Helping students to acquire basic manual skills
- Improving students' attitudes towards and interests in science and scientists

**Teacher book: emphasis on:**

- Containing large number of guidelines for teaching strategies and additional information that improve learning of science
- Providing teachers with technical resources and internet resources
- Constructive teaching approaches that are student-centered, group work, engaging in debates and discussions, scientific activities, summer projects, and surveys.
- Promoting teachers' teaching skills

**1. Alignment of the translated texts to the philosophy of the original textbook.**

The book is almost aligned with the philosophy of the original book. The content of the chapter contains the main criteria the philosophy aims at. Conceptions about science and scientists are evident in chapter 1 as an introduction to the chapter. Moreover, physics is well integrated with math and technology. The scientific method is well evident in the chapter through the hypothesis, theories, models and scientific laws. There are incidents of the history of science in relation to worldwide advancements. The layout of the chapter is presented in an exciting and interesting way that gives the students a view of the nature of science.

Concerning the objective, in a chapter about nature of science and the scientific methods, objectives of this chapter are not only unaligned with the philosophy of the original book, but are also very basic and do not meet the general desired scientific requirements. Objectives are only bloom levels 1 and 2 and include "describing", "utilizing", "identifying" and "defining" with no higher order thinking.

Exercises are only application exercises to mathematical formulas of physics laws that include mere mathematical applications to scientific concepts with no scientific skills acquired that are not related to real life events and that are not contextualized.

**2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

Concerning the use of the Arabic language, the sentences used seem to be appropriate to the students' scientific levels of acquisition. The concepts are defined in simple scientific language that is easily understandable (with the teacher's guidance).

The main terms are clearly translated to English and defined in such a way that the student can link the definitions with other technical terms (with the help of the teacher shedding the light on their reuse in other instances).

The concepts of the nature of science are clearly defined in clear Arabic with appropriate length of sentences. Moreover, a variety of examples are provided in this matter.

**3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**

Part of the content of one of the chapters that has been evaluated in this book seems to create some ambiguities to the students. More specifically, after a whole chapter about the nature of science, the review section includes concepts about magnetism that have not been



tackled in previous years. Moreover, sections on “constructive thinking” eliminate all higher order thinking questions (only mathematical and direct application questions are included).

Figures and illustrations are well-expressive and serve the science concepts in a good way. The skills provided offer good acquisition of academic (but not everyday) skills of the physics concepts under study.

#### **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

There are a couple of instances that are not relevant to the context of KSA (such as examples of golf ball, ski and fast trains).

Illustrations are expressive of the context, where no pictures of unrelated context are come across. Moreover, the content, although generally biased, reflect the context of KSA (within names).





<b>Book Evaluation Form</b>	Subject: Physics			
	Grade: Secondary one			
	Textbook Title: Physics			
	Chapter Title: Chapter 1 Introduction to physics			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b><i>Criterion/Indicator</i></b>				
<b>67. Alignment of the translated texts to the philosophy of the original textbook</b>				
67.1. <i>Content of the Chapter</i>				
67.2. <i>Activities included in the chapter</i>				
67.3. <i>Learning objectives</i>				
67.4. <i>Practice exercises</i>				
67.5. <i>Skills</i>				
67.6. <i>Assessment</i>				
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 In a chapter about nature of science and the scientific methods, objectives of this chapter are not only unaligned with the philosophy of the original book, but are also very basic and do not meet the general desired scientific requirements. For example, in pages 6 and 7 of this chapter, objectives include the “utilization” of several mathematical strategies for measurement and expectation (note that these strategies are only listed within the chapter and the student is asked to “apply” rather than “utilize” in new situations), “applying” the basic principles of accuracy and regulations upon measurement, “explain” the scientific method, “utilize” the SI unit, “evaluate” answers through unit analysis, and “conduct” mathematical operations based on physical laws and using scientific symbols. It is noteworthy to mention that evaluating answers through unit analysis is an excellent objective but it is sadly not addressed in the book the way it should be. In particular, they are more or less didactic and on very basic levels.</p> <p>1.4 Exercises are only application exercises to mathematical formulas of physics laws. They can be more student-centered especially in such a chapter. For example, on page 24, the didactic questions of (what do we mean by the scientific method, what is the importance of mathematics in physics, and what is the international system of units?) can be replaced by more authentic situations that address the same questions and that are relevant to students everyday life. Moreover, on page 25, exercise 34 asks students to convert different units of lengths to meter. I think such an exercise can be changed into more meaningful problem that is also related to students’ daily life; rather than only mathematical numbers with no relation to students’ daily life.</p>				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>40. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
40.1. Length of sentences				<input checked="" type="checkbox"/>
40.2. Complexity of sentences				<input checked="" type="checkbox"/>
40.3. Diversity of language structures				<input checked="" type="checkbox"/>
40.4. Number of concepts per chapter				<input checked="" type="checkbox"/>
40.5. Reuse of technical terms in subsequent lessons & chapters			<input checked="" type="checkbox"/>	
40.6. Clarity of definitions of technical terms			<input checked="" type="checkbox"/>	
40.7. Using concrete examples to illustrate concepts			<input checked="" type="checkbox"/>	
40.8. Redundancy of terms and sentences with no educational benefit				<input checked="" type="checkbox"/>
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

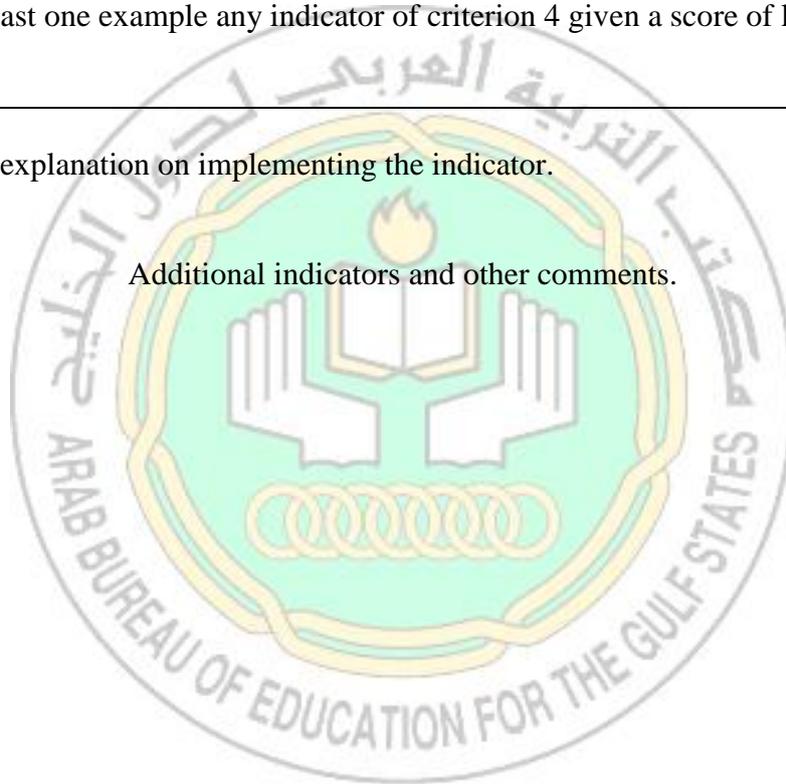
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>70. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
70.1. Illustrations				<input checked="" type="checkbox"/>
70.2. Content		<input checked="" type="checkbox"/>		
70.3. Activities			<input checked="" type="checkbox"/>	
70.4. Practice Exercises		<input checked="" type="checkbox"/>		
70.5. Skills				<input checked="" type="checkbox"/>
70.6. Assessment				<input checked="" type="checkbox"/>
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				
<p>3.2 Review section (all about magnetism) (p.13) is unrelated to chapter 1. Moreover, “constructive thinking” section includes only basic mathematical applications of a formula.</p> <p><i>Important to check:</i> whether in previous grades, the concepts of energy and charge have been tackled. If they are not then it is not logical to talk about their SI units if the students do not know about the concepts themselves (page 14).</p> <p>3.4 exercises are of application type in a pure science chapter.</p>				

--

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>40. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
40.1. <i>Illustrations</i>				<input checked="" type="checkbox"/>
40.2. <i>Content</i>				<input checked="" type="checkbox"/>
40.3. <i>Activities</i>			<input checked="" type="checkbox"/>	
40.4. <i>Practice Exercises</i>				<input checked="" type="checkbox"/>
40.5. <i>Assessment</i>				<input checked="" type="checkbox"/>
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.





<b>Book Evaluation Form</b>	Subject: Physics			
	Grade: Secondary one			
	Textbook Title: Physics			
	Chapter Title: chapter 3 Accelerated Motion			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>68. Alignment of the translated texts to the philosophy of the original textbook</b>				
68.1.	Content of the Chapter			<input checked="" type="checkbox"/>
68.2.	Activities included in the chapter		<input checked="" type="checkbox"/>	
68.3.	Learning objectives	<input checked="" type="checkbox"/>		
68.4.	Practice exercises	<input checked="" type="checkbox"/>		
68.5.	Skills		<input checked="" type="checkbox"/>	
68.6.	Assessment			<input checked="" type="checkbox"/>
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 Objectives are only bloom levels 1 and 2 and are not aligned with the philosophy of the original book. For examples, objectives in this chapter include “describing” accelerated motion, “utilizing” diagrams, figures and equations to solve problems related to moving objects, “describing” the moving objects during free fall, and “getting introduced” to acceleration. There are no objectives that tackle everyday life, worldwide advancements or the scientific method skills (that are within the philosophy of the book).</p> <p>1.4 Most of the practice exercises are mere mathematical applications to scientific concepts with no scientific skills acquired.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>41. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
41.1.	Length of sentences		<input checked="" type="checkbox"/>	
41.2.	Complexity of sentences		<input checked="" type="checkbox"/>	
41.3.	Diversity of language structures		<input checked="" type="checkbox"/>	
41.4.	Number of concepts per chapter			<input checked="" type="checkbox"/>
41.5.	Reuse of technical terms in subsequent lessons & chapters		<input checked="" type="checkbox"/>	
41.6.	Clarity of definitions of technical		<input checked="" type="checkbox"/>	



<i>terms</i>				
41.7. <i>Using concrete examples to illustrate concepts</i>			<input checked="" type="checkbox"/>	
41.8. <i>Redundancy of terms and sentences with no educational benefit</i>				<input checked="" type="checkbox"/>
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>71. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
71.1. <i>Illustrations</i>				<input checked="" type="checkbox"/>
71.2. <i>Content</i>			<input checked="" type="checkbox"/>	
71.3. <i>Activities</i>				<input checked="" type="checkbox"/>
71.4. <i>Practice Exercises</i>			<input checked="" type="checkbox"/>	
71.5. <i>Skills</i>			<input checked="" type="checkbox"/>	
71.6. <i>Assessment</i>			<input checked="" type="checkbox"/>	
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>41. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
41.1. <i>Illustrations</i>			<input checked="" type="checkbox"/>	
41.2. <i>Content</i>			<input checked="" type="checkbox"/>	
41.3. <i>Activities</i>			<input checked="" type="checkbox"/>	
41.4. <i>Practice Exercises</i>		<input checked="" type="checkbox"/>		
41.5. <i>Assessment</i>			<input checked="" type="checkbox"/>	
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				
P.68 golf ball P.75 8 exercises only males involved (out of 8) P.35 ski P.90 fast train				

Comments and explanation on implementing the indicator.  
 Additional indicators and other comments.



## Physics Report

**Subject:** Physics

Semester 2

**Class:** Secondary 1

**Chapters:** 5 & 7

The following report is an evaluation of physics books in Second 2 (1<sup>st</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into three chapters. Three chapters out of six chapters (75% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 5: Forces in Two Dimensions; and (2) chapter 7: Gravitation. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **Philosophy of the book:**

#### ***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Introductory experiments
  - Introduction to physics laboratories
  - Enriching information with experiments
- Integrating physics with various branches of knowledge, with everyday life, with mathematical concepts and with societal issues.



**Activity Book: emphasis on:**

- Conducting experiments that promote students' scientific knowledge
- Helping students to acquire basic manual skills
- Improving students' attitudes towards and interests in science and scientists

**Teacher book: emphasis on:**

- Containing large number of guidelines for teaching strategies and additional information that improve learning of science
- Providing teachers with technical resources and internet resources
- Constructive teaching approaches that are student-centered, group work, engaging in debates and discussions, scientific activities, summer projects, and surveys.
- Promoting teachers' teaching skills

**1. Alignment of the translated texts to the philosophy of the original textbook.**

The content of the chapter is adequately aligned with the philosophy of the book (and this is evident with the integration of geometric concepts in this chapter). However, the objectives do not reflect the philosophy of the book. The objectives are very academic, and students are not expected (from the objectives) to integrate with daily life, think critically ... However, the nature of some chapters necessitates objectives that keep up with technological advancements, tackles instances of the history of science and teach students certain higher order level skills. And some chapters successfully meet up with these standards.

There are some instances in which more everyday life examples can be highlighted. For example, on p.11, the authors explain the reason to why we decompose vectors. Unfortunately, the answer is only basic mathematical answer when it could be a meaningful qualitative answer (we decompose vectors simply because we need to “simplify” them into 2D spaces by which we can understand their effects, being forces for example).

Many practice exercises are of qualitative context; i.e. only mathematical with no conceptual emphasis.

Integration with worldwide advancements is well evident (examples include the mentioning of the GPRS for relevant purposes in students' lives).

Students' activities book contains activities of inquiry level 0 (and in rare instances activities are of level 1). Very detailed steps are provided for the students who are not left for any room to test their own ideas (at some point, mathematical formulas of the experiment problems are even provided).

**2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

Scientific concepts are clearly re-used in subsequent chapters, which is an asset evident throughout this book in multiple occasions. This meets students' levels and always links old concepts with new ones in relevant matters. The reuse of the terms is evident within practice exercises. However, there is un-clarity of some definitions of scientific concepts. These concepts are defined in incomplete ways which leave the students with no full understanding of the concept itself. The authors should make sure that the concepts along with all the aspects that come along with it are fully defined.

For example, the term friction is well-defined; however, the authors miss many of the important aspects that come along with this concept (like why do we neglect friction, how do



we treat systems with and without friction and what are the difference between such systems...)

Moreover, the book should contain the reasons behind each concept has a particular effect. The book contains many definitions of the linguistic meanings of the word (rather than the scientific meaning).

### **3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**

Figures and illustrations are well-expressive and serve the science concepts in a good way. Translations of some terms should be dealt with more care regarding the Arabic context. The Arabic language is a rich language that can be extensively used to elaborate on some science concepts and make them clearer and more understandable.

Moreover, some scientific terms are self-explanatory in English, unlike in Arabic, and this should be taken into consideration. Translation should not be word by word, rather it should be contextualized. And this book shows several discrepancies in translation. At some instances, translations are very concise and do not serve the scientific purpose of the concept. For the purposes of the Arabic language, more care with translations should be taken into account (like the concept of vector components translated from mathematical viewpoint into physics: this is a delicate subject in Arabic).

Solutions to some solved problems fail to serve the science concepts at hand. For example, an answer to an everyday problem is only a negative number (although the problem is very contextualized, the answer is only a meaningless number to the student); the authors can explain the conceptual meaning of a negative number to this problem in physics for example.

### **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

The book is aligned with the context of KSA. Figures and illustrations are relevant with the science concepts at hand. Some are not taken from within the KSA context but only because they cannot be taken from KSA contexts (outer space advancements). A chapter that talks about space includes pictures of non-Gulf astronauts, celestial bodies, NASA pictures...)



<b>Book Evaluation Form</b>	Subject: Physics			
	Grade: Secondary 1			
	Textbook Title: Physics			
	Chapter Title: Chapter5 Forces in Two Dimensions			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>69. Alignment of the translated texts to the philosophy of the original textbook</b>				
		X		
		X		
X				
	X			
		X		
		X		
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 Objectives are basic and didactic; they do not tackle the main points that the philosophy of the original book emphasizes. For example, objectives in this chapter include “representing” forces as vectors, “using” Newton’s laws in analyzing motion in the presence of friction (very narrow objective), and “calculating” forces in different directions.</p> <p>1.4 Most of the practice exercises are of qualitative context; i.e. only mathematical. For example, on page 9 mentioning forces as vector quantities (mathematically) could be enhanced by providing a physical setting that would be more relevant for the students.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>42. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
			X	
				X
			X	
				X
				X
		X		



42.7. <i>Using concrete examples to illustrate concepts</i>			X	
42.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				X
<p>Illustrate by at last one example any indicator of criterion 2 given a score of less than 3</p> <p>2.6 Some terms need further elaborated definitions. At some point, the definitions seem inadequate for translational purposes (point elaborated for item 3 later), but for this point, some terms need to be scientifically defined more accurately. For example, the term friction is well-defined; however, the authors miss many of the important aspects that come along with this concept (like why do we neglect friction, how do we treat systems with and without friction and what are the difference between such systems...)</p>				

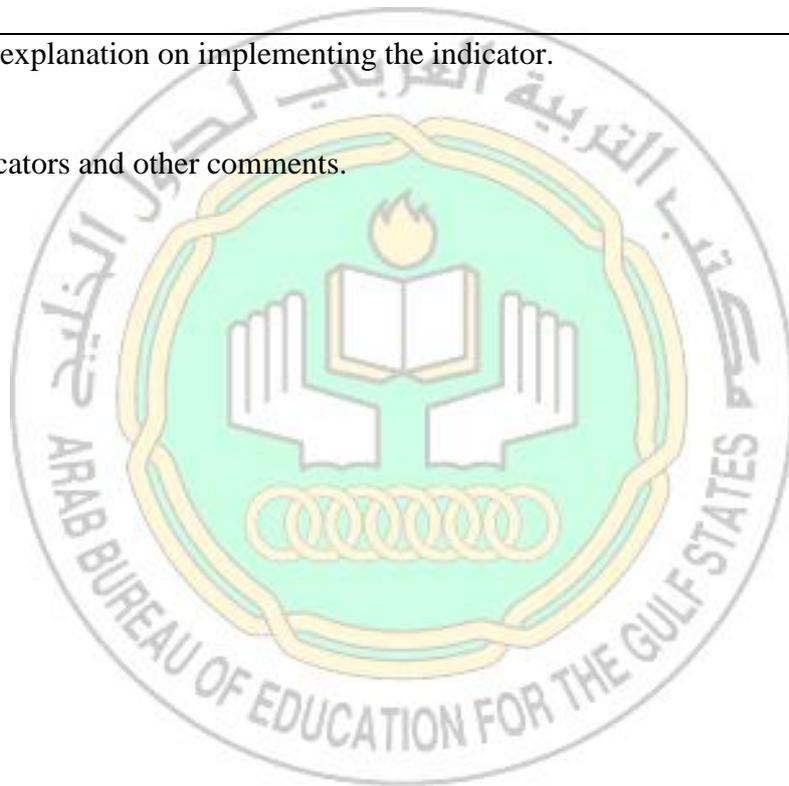
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>72. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
72.1. <i>Illustrations</i>			X	
72.2. <i>Content</i>		X		
72.3. <i>Activities</i>			X	
72.4. <i>Practice Exercises</i>		X		
72.5. <i>Assessment exercises</i>			X	
72.6. <i>Skills</i>				X
<p>Illustrate by at last one example any indicator of criterion 3 given a score of less than 3</p> <p>3.2 At some instances, translations are very concise and do not serve the scientific purpose of the concept. For the purposes of the Arabic language, more care with translations should be taken into account. For example, on page 10, components of vectors should be dealt with in a more detailed way. The authors only translate projections into x and y components without explaining what “axes” are. In English contexts, this is self-explanatory (unlike the Arabic context).</p> <p>3.4 Answers in solved problems do not quiet fully serve the science concepts. For example, in the example on P.13, the problem at hand is within an everyday concept; however the answer provided in a mere negative number with no qualitative explanation of this number. In physics, one should explain the qualitative meaning of a mathematical result.</p>				



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>73. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
73.1. <i>Illustrations</i>				X
73.2. <i>Content</i>				X
73.3. <i>Activities</i>			X	
73.4. <i>Practice Exercises</i>			X	
73.5. <i>Assessment exercises</i>				X
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.





<b>Book Evaluation Form</b>		Subject: Physics			
		Grade: Secondary 1			
		Textbook Title: Physics			
		Chapter Title: Chapter 7 Gravitation			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>70. Alignment of the translated texts to the philosophy of the original textbook</b>					
70.1.	<i>Content of the Chapter</i>			X	
70.2.	<i>Activities included in the chapter</i>				X
70.3.	<i>Learning objectives</i>				X
70.4.	<i>Practice exercises</i>			X	
70.5.	<i>Assessment exercises</i>				X
70.6.	<i>Skills</i>			X	
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>43. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
43.1.	<i>Length of sentences</i>				X
43.2.	<i>Complexity of sentences</i>			X	
43.3.	<i>Diversity of language structures</i>			X	
43.4.	<i>Number of concepts per chapter</i>				X
43.5.	<i>Reuse of technical terms in subsequent lessons and chapters</i>			X	
43.6.	<i>Clarity of definitions of technical terms</i>		X		
43.7.	<i>Using concrete examples to illustrate concepts</i>			X	
43.8.	<i>Redundancy of terms and sentences with no educational benefit.</i>			X	
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3					
2.6 No definition of the word comet at the introductory part. The authors provide students with a very exciting introductory discovery at the beginning of the chapter that would only be understandable if the students know what the word comet means. (A simple definition which a					



“a small celestial body moving in an eccentric orbit around the sun”) + No definition of the word إهليجية + Experiment of كافندش (very concise and needs more elaboration e.g. why they used lead balls?)

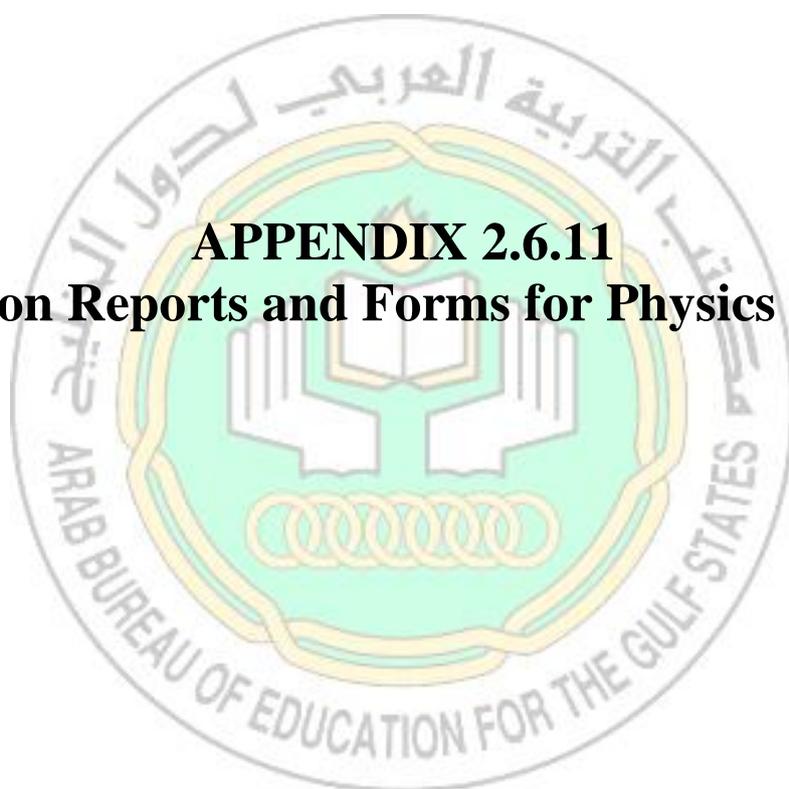
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>74. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
74.1. <i>Illustrations</i>				X
74.2. <i>Content</i>			X	
74.3. <i>Activities</i>			X	
74.4. <i>Practice Exercises</i>				X
74.5. <i>Assessment exercises</i>			X	
74.6. <i>Skills</i>				X
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>75. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
75.1. <i>Illustrations</i>				X
75.2. <i>Content</i>			X	
75.3. <i>Activities</i>			X	
75.4. <i>Practice Exercises</i>			X	
75.5. <i>Assessment exercises</i>				X
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.  
Additional indicators and other comments.



**APPENDIX 2.6.11**  
**Evaluation Reports and Forms for Physics Grade 11**





## **English/ Arabic Agreement: Table of Content**

Subject: **Physics** Class: **Second Secondary**

**Semester 1**

**English Version:** Physics Textbook

Chapters in the order that appears in the Arabic version Chapters 8, 9, 10, 11, 12, 13

**(Please refer to the copies of the table of content of the two versions for comparison)**

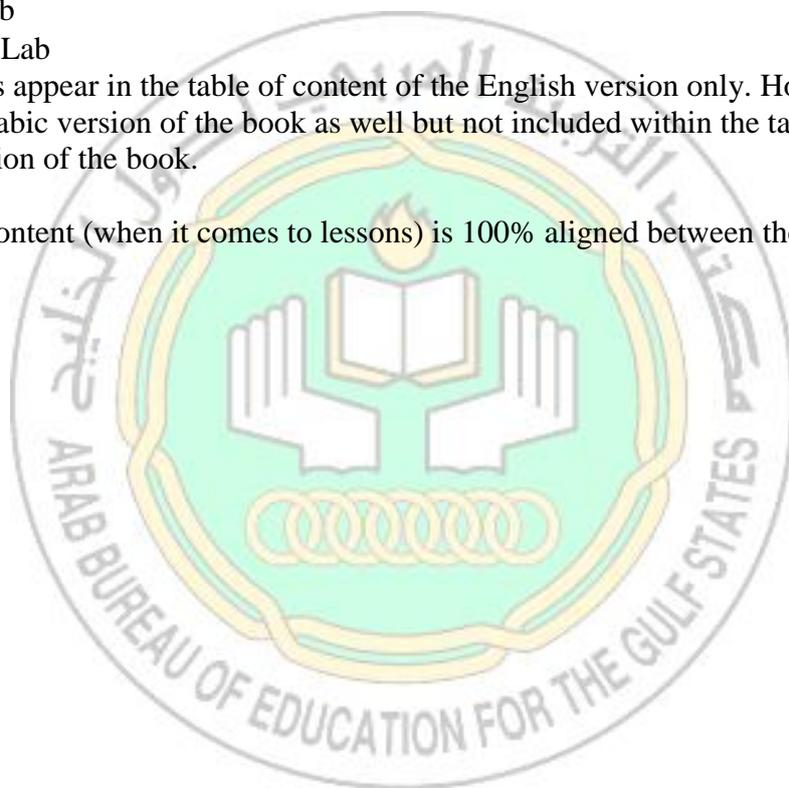
- The tables of contents of the two versions are 95% aligned by lessons, lesson titles and translations of titles.

- In every chapter in the English version, there are sections (mainly activity labs) that are missing from the table of content of the Arabic section. These sections are:

- Launch Lab
- Mini Lab
- Physics Lab

- These sections appear in the table of content of the English version only. However, they are found in the Arabic version of the book as well but not included within the table of content of the Arabic version of the book.

- The table of content (when it comes to lessons) is 100% aligned between the two versions of the book.





<b>Book Evaluation Form</b>	Subject: Physics				
	Grade: Secondary Two				
	Semester: ONE				
	Textbook Title: Physics				
	Chapter Title: Chapter 4: Energy and Its Conservation				
Criterion/Indicator	Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>71. Agreement of the translated Arabic book with that of the English book</b>					
71.1. <i>Definitions and explanations in the chapter</i>					X
71.2. <i>Activities included in the chapter</i>					X
71.3. <i>Learning objectives</i>					X
71.4. <i>Practice exercises</i>					X
71.5. <i>Assessment exercises</i>					X
1.6 <i>Figures, pictures and illustrations</i>				X	

***1.1 --- 1.5 Definitions and explanations in the chapter, Activities included in the chapter, Learning objectives, Practice exercises, and Assessment exercises***

- The two books are very well aligned regarding content, definitions of concepts, examples, and activities. There appear very minor differences of words that create no problem with scientific nor linguistic comprehension.

***1.8 Figures, pictures and illustrations***

Figures and illustrations in the Arabic version of the book are quite different that those in the original book mainly due to cultural considerations. For example, ALL pictures of females are replaced by males. However, this difference in pictures does not affect meaning at all. The content of each picture is the same (the image delivers the same message in both versions of the book).



## English/ Arabic Agreement: Table of Content

Subject: **Physics** Class: **Second Secondary**

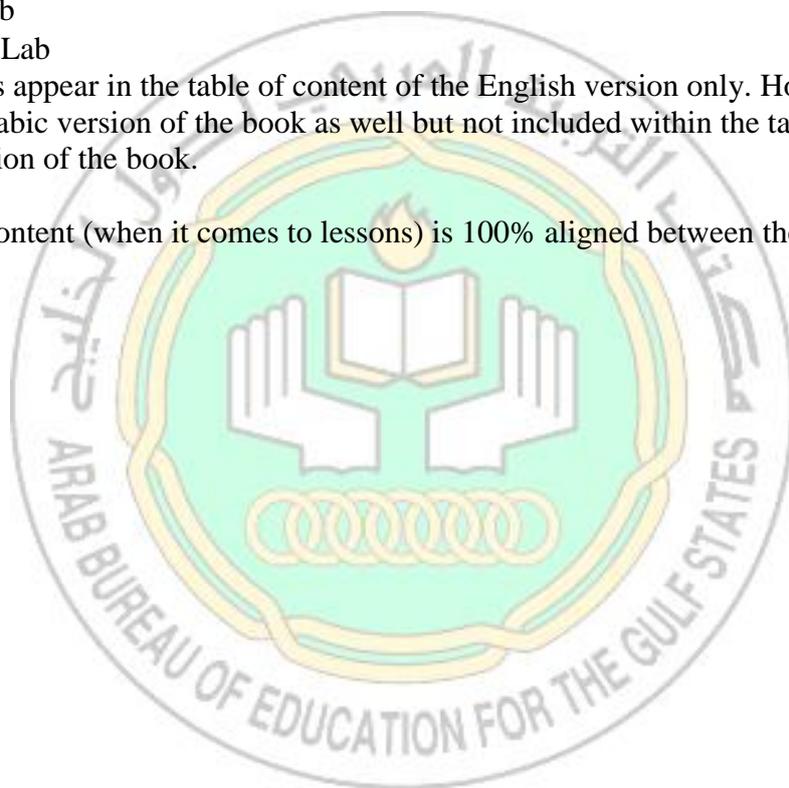
**Semester 2**

**English Version:** Physics Textbook

Chapters in the order that appears in the Arabic version Chapters 14, 15, 16, 17, 18, 19

**(Please refer to the copies of the table of content of the two versions for comparison)**

- The tables of contents of the two versions are 95% aligned by lessons, lesson titles, activities and experiments (in the form of labs and mini labs), and translations of titles.
- In every chapter in the English version, there are sections (mainly activity labs) that are missing from the table of content of the Arabic section. These sections are:
  - Launch Lab
  - Mini Lab
  - Physics Lab
- These sections appear in the table of content of the English version only. However, they are found in the Arabic version of the book as well but not included within the table of content of the Arabic version of the book.
- The table of content (when it comes to lessons) is 100% aligned between the two versions of the book.





<b>Book Evaluation Form</b>	Subject: Physics				
	Grade: Secondary Two				
	Semester: TWO				
	Textbook Title: Physics				
	Chapter Title: Chapter 8: Sound				
<i>Criterion/Indicator</i>	Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>72. Agreement of the translated Arabic book with that of the English book</b>					
72.1. <i>Definitions and explanations in the chapter</i>					X
72.2. <i>Activities included in the chapter</i>					X
72.3. <i>Learning objectives</i>					X
72.4. <i>Practice exercises</i>				X	
72.5. <i>Assessment exercises</i>					X
<i>1.6 Figures, pictures and illustrations</i>				X	

### **1.1 Definitions and explanations in the chapter**

- The two books are very well aligned regarding content, definitions of concepts, examples, and activities. There appear very minor differences of words that create no problem with scientific nor linguistic comprehension.
- In one instance only there is an elimination (and sometimes replacement) of the sections related to music with other types of sounds (non musical, like ringing or sound making) for cultural purposes. But the meaning is still there unaffected.

### **1.4 Practice Exercises**

Some practice exercises are deleted from the Arabic version of the book for cultural considerations (those tackling musical instruments and music) while others are paraphrased into something that is similar to music (like making sounds or ringing).

### **1.9 Figures, pictures and illustrations**

Figures and illustrations in the Arabic version of the book are quite different that those in the original book mainly due to cultural considerations. For example, ALL pictures of females are replaced by males. However, this difference in pictures does not affect meaning at all. The content of each picture is the same (the image delivers the same message in both versions of the book).



## Physics Report

**Subject:** Physics

Semester 1

**Class:** Secondary 2

**Chapters:** 1, 3 and 6

The following report is an evaluation of physics books in Second 2(1<sup>st</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Three chapters out of six chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 1: Rotational Motion; (2) chapter 3: Work, Energy & Simple Machines and (3) chapter 6: States of Matter. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **Philosophy of the book:**

#### ***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Introductory experiments
  - Introduction to physics laboratories
  - Enriching information with experiments



- Integrating physics with various branches of knowledge, with everyday life, with mathematical concepts and with societal issues.

**Activity Book: emphasis on:**

- Conducting experiments that promote students' scientific knowledge
- Helping students to acquire basic manual skills
- Improving students' attitudes towards and interests in science and scientists

**Teacher book: emphasis on:**

- Containing large number of guidelines for teaching strategies and additional information that improve learning of science
- Providing teachers with technical resources and internet resources
- Constructive teaching approaches that are student-centered, group work, engaging in debates and discussions, scientific activities, summer projects, and surveys.
- Promoting teachers' teaching skills

**1. Alignment of the translated texts to the philosophy of the original textbook.**

The book is almost aligned with the philosophy of the original book. The content of the chapter contains the main criteria the philosophy aims at. There are examples of technological and scientific advancements in all lessons that are well integrated with societal and everyday life issues. Moreover, mathematical concepts are explained within the lesson from a physics perspective in an interesting way.

The introductory activities are present at the beginning of each lesson. However, some of them are of cook-book types that provide little space for students to discover or experiment by themselves.

In the student's workbook, all the evaluated experiments are of inquiry level 0 or 1 on Heron's scale (where the problem and procedure are given and sometimes the solution is provided). The learning objectives are mostly Bloom levels 1 and 2 (compute, introduce, explain, determine ...), the fact that is not aligned with the philosophy of the book.

In rare occasions are students given room to construct their own knowledge.

In practice exercise, the skills are almost entirely practical (procedural), with no emphasis on higher order mental skills. However, the teacher's guide provides teachers with good ideas to instill some skills into the students' scientific minds.

**2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

Concerning the use of the Arabic language, the sentences used seem to be appropriate to the students' scientific levels of acquisition. The concepts are defined in simple scientific language that is easily understandable (with the teacher's guidance).

However, there is a problem with a number of undefined concepts (mostly prior knowledge while some are new concepts). Some concepts are mentioned undefined but defined later on (examples of such occurrences are included within the forms).

There is an inconsistency with translating technical concepts: some are translated into English while other are left un-translated.

**3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**



Figures and illustrations are well-expressive and serve the science concepts in a good way. The skills provided offer good acquisition of academic (but not everyday) skills of the physics concepts under study.

There is inconsistency with the translations of some technical words. Some words are translated into English while others are not. Moreover, more clarity with variable definitions (within equations and formulas) are needed so that the science concept is attained.

#### **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

Names are suitable within the KSA culture; however, some activities are not relevant (gymnasts, hockey, ice lakes ...) and may be problematic to students. Furthermore, content, activities, and practice exercises are male-gendered addressing the technical issues of the science concepts only. In two identified cases there was a mentioning of a girl (without mentioning the name). No pictures of girls are identified, and no instances related to gender equity were identified as well.





## Physics Report 2

**Subject:** Physics

Semester 2

**Class:** Secondary 2

**Chapters:** 8, 11, 12

The following report is an evaluation of physics books in Second 2(2<sup>st</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and practice book, and teachers' guides. Teachers' guide was evaluated in conjunction with the student textbook and practice book. Each of those books is divided into six chapters. Three chapters out of six chapters (50% of each of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 8: The Sound; (2) chapter 11: Refraction and Lenses and (3) chapter 12: Interference and Diffraction. Those chapters were selected for evaluation from teacher's guide and student's textbook and practice book.

One evaluation form was filled out for each chapter for the set made up of the textbook, practice book and teacher's manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **Philosophy of the book:**

#### ***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Introductory experiments
  - Introduction to physics laboratories
  - Enriching information with experiments
- Integrating physics with various branches of knowledge, with everyday life, with mathematical concepts and with societal issues.



**Activity Book: emphasis on:**

- Conducting experiments that promote students' scientific knowledge
- Helping students to acquire basic manual skills
- Improving students' attitudes towards and interests in science and scientists

**Teacher book: emphasis on:**

- Containing large number of guidelines for teaching strategies and additional information that improve learning of science
- Providing teachers with technical resources and internet resources
- Constructive teaching approaches that are student-centered, group work, engaging in debates and discussions, scientific activities, summer projects, and surveys.
- Promoting teachers' teaching skills

**1. Alignment of the translated texts to the philosophy of the original textbook.**

The set of books are well-aligned with the philosophy of the chapter in that the content, activities and examples are well integrated with everyday life that address technological advancements and worldwide issues. However, objectives of the chapters are not aligned as they only address academic and didactic perspectives of the science concepts with little emphasis on the conceptual nature of physics or how physics is linked with real life and with technology (although this link is evident in content through examples, figures and illustrations). Moreover, practice exercises are also academic with no evident link of physics and technology. Problems are almost all applications of mathematical formulas. The skills that are addressed (within mainly the content) are very-well aligned with the philosophy of the original book in that the student is provided with examples of technological advancements that are results of the scientific concepts, as well as examples of everyday life that are relevant to students' lives.

**2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

Concerning the use of the language in the book, the language in the translated set of books meet the educational level of the students at this age. The lengths and the structures of the sentences are adequate throughout the chapters I have examined. There are no redundant expressions of any kind; however, at some instances there is a large number of concepts per lesson (and not just chapter) which may become a burden on the student's cognitive ability. Moreover, some concepts are tackled only quantitatively, with not qualitative or deeper explanation of the lesson, where only mathematical formulas of the concepts are followed with application exercises.

**3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**

The content of the book is almost satisfactory regarding serving the math and physics concepts; however, at some points, and in some chapters, there are some definitions that may cause misconceptions to students (as in the case of light). Moreover, some physical concepts are defined only mathematically, without paying any attention to the physical and qualitative meaning of the concept (as in the case of Snell's law).



Practice exercises fall short to serve the physics concepts as they are only quantitative in nature and mathematical with no assessment to conceptual understanding or application to real life.

#### **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

The names, figures and illustrations are suitable within the KSA culture. However, I didn't come across any female name (or even indication of a female) neither within content nor in any of the activities, exercises or problems. The figures do reflect the KSA culture, but are generally biased where they reflect men's chores and activities only.





<b>Book Evaluation Form</b>	Subject: Physics			
	Grade: Secondary 2 (semester 2)			
	Textbook Title: Physics			
	Chapter Title: The Sound (Chapter 8)			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>73. Alignment of the translated texts to the philosophy of the original textbook</b>				
73.1. <i>Content of the Chapter</i>				
73.2. <i>Activities included in the chapter</i>				
73.3. <i>Learning objectives</i>				
73.4. <i>Practice exercises</i>				
73.5. <i>Assessment exercises</i>				
73.6. <i>Skills</i>				
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3            1.3 objectives are bloom levels 1 and 2 (p. 36). For example, objectives include “description” of sound and its characteristics, “testing” several sources of sound, and “explain” the characteristics that distinguish between patterns and noise. These objectives are not integrated with real life; they are only stated facts in the lessons under study. Moreover, no objectives that address technological advancements are tackled in this chapter.</p> <p>1.5 good skills (more inquiry activities are added than previous chapters).</p>				
No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence	
<b>44. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
44.1. <i>Length of sentences</i>				
44.2. <i>Complexity of sentences</i>				
44.3. <i>Diversity of language structures</i>				
44.4. <i>Number of concepts per chapter</i>				
44.5. <i>Reuse of technical terms in subsequent lessons and chapters</i>				
44.6. <i>Clarity of definitions of technical terms</i>				
44.7. <i>Using concrete examples to illustrate concepts</i>				
44.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				

Illustrate by at last one example any indicator of criterion 2 given a score of less than 3

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>76. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
76.1. <i>Illustrations</i>				<input checked="" type="checkbox"/>
76.2. <i>Content</i>			<input checked="" type="checkbox"/>	
76.3. <i>Activities</i>			<input checked="" type="checkbox"/>	
76.4. <i>Practice Exercises</i>				
76.5. <i>Assessment exercises</i>		<input checked="" type="checkbox"/>		
76.6. <i>Skills</i>				<input checked="" type="checkbox"/>

Illustrate by at last one example any indicator of criterion 3 given a score of less than 3

3.4 Exercises and problems at the end of the chapter are almost all quantitative and mathematical where students only apply the formulas and mathematical equations addressed within the lessons of the chapter.

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>77. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
77.1. <i>Illustrations</i>				<input checked="" type="checkbox"/>
77.2. <i>Content</i>				<input checked="" type="checkbox"/>
77.3. <i>Activities</i>			<input checked="" type="checkbox"/>	
77.4. <i>Practice Exercises</i>			<input checked="" type="checkbox"/>	
77.5. <i>Assessment exercises</i>				<input checked="" type="checkbox"/>

Illustrate by at last one example any indicator of criterion 4 given a score of less than 3

Comments and explanation on implementing the indicator.

Additional indicators and other comments.

On p. 39 there is a formula with undefined variables (the formula  $\lambda=v/f$  is stated without definition of variables: wavelength, velocity and frequency).



<b>Book Evaluation Form</b>	Subject: Physics			
	Grade: Secondary 2 (Semester 2)			
	Textbook Title: Physics			
	Chapter Title: Refraction and Lenses (Chapter 11)			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>74. Alignment of the translated texts to the philosophy of the original textbook</b>				
74.1.	<i>Content of the Chapter</i>			<input checked="" type="checkbox"/>
74.2.	<i>Activities included in the chapter</i>		<input checked="" type="checkbox"/>	
74.3.	<i>Learning objectives</i>	<input checked="" type="checkbox"/>		
74.4.	<i>Practice exercises</i>			
74.5.	<i>Assessment exercises</i>			<input checked="" type="checkbox"/>
74.6.	<i>Skills</i>			<input checked="" type="checkbox"/>
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>Objectives are not aligned with the philosophy P.122. Objectives of the chapter include “knowledge” of how light changes its direction and its speed when it transfers from one medium to another, “comparison” of the characteristics of lenses through the images they produce, and “introduction” to the different application of lenses and how lenses can make us see around.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>45. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
45.1.	<i>Length of sentences</i>		<input checked="" type="checkbox"/>	
45.2.	<i>Complexity of sentences</i>			<input checked="" type="checkbox"/>
45.3.	<i>Diversity of language structures</i>			<input checked="" type="checkbox"/>
45.4.	<i>Number of concepts per chapter</i>		<input checked="" type="checkbox"/>	
45.5.	<i>Reuse of technical terms in subsequent lessons and chapters</i>			<input checked="" type="checkbox"/>
45.6.	<i>Clarity of definitions of technical terms</i>		<input checked="" type="checkbox"/>	
45.7.	<i>Using concrete examples to illustrate concepts</i>			<input checked="" type="checkbox"/>
45.8.	<i>Redundancy of terms and sentences with no educational benefit.</i>		<input checked="" type="checkbox"/>	

Illustrate by at last one example any indicator of criterion 2 given a score of less than 3

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>78. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
78.1. <i>Illustrations</i>				<input checked="" type="checkbox"/>
78.2. <i>Content</i>			<input checked="" type="checkbox"/>	
78.3. <i>Activities</i>			<input checked="" type="checkbox"/>	
78.4. <i>Practice Exercises</i>		<input checked="" type="checkbox"/>		
78.5. <i>Assessment exercises</i>				<input checked="" type="checkbox"/>
78.6. <i>Skills</i>				<input checked="" type="checkbox"/>

Illustrate by at last one example any indicator of criterion 3 given a score of less than 3

3.4 Exercises are mostly quantitative and mathematic; (no in-depth understanding of scientific concepts)

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>79. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
79.1. <i>Illustrations</i>				<input checked="" type="checkbox"/>
79.2. <i>Content</i>				<input checked="" type="checkbox"/>
79.3. <i>Activities</i>			<input checked="" type="checkbox"/>	
79.4. <i>Practice Exercises</i>				<input checked="" type="checkbox"/>
79.5. <i>Assessment exercises</i>				<input checked="" type="checkbox"/>

Illustrate by at last one example any indicator of criterion 4 given a score of less than 3

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



<b>Book Evaluation Form</b>		Subject: Physics			
		Grade: Secondary			
		Textbook Title: Physics			
		Chapter Title: Interference and Diffraction (Chapter 12)			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>75. Alignment of the translated texts to the philosophy of the original textbook</b>					
75.1.	<i>Content of the Chapter</i>			<input checked="" type="checkbox"/>	
75.2.	<i>Activities included in the chapter</i>				<input checked="" type="checkbox"/>
75.3.	<i>Learning objectives</i>			<input checked="" type="checkbox"/>	
75.4.	<i>Practice exercises</i>			<input checked="" type="checkbox"/>	
75.5.	<i>Assessment exercises</i>				<input checked="" type="checkbox"/>
75.6.	<i>Skills</i>				<input checked="" type="checkbox"/>
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>46. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
46.1.	<i>Length of sentences</i>			<input checked="" type="checkbox"/>	
46.2.	<i>Complexity of sentences</i>			<input checked="" type="checkbox"/>	
46.3.	<i>Diversity of language structures</i>			<input checked="" type="checkbox"/>	
46.4.	<i>Number of concepts per chapter</i>			<input checked="" type="checkbox"/>	
46.5.	<i>Reuse of technical terms in subsequent lessons and chapters</i>			<input checked="" type="checkbox"/>	
46.6.	<i>Clarity of definitions of technical terms</i>		<input checked="" type="checkbox"/>		
46.7.	<i>Using concrete examples to illustrate concepts</i>			<input checked="" type="checkbox"/>	
46.8.	<i>Redundancy of terms and sentences with no educational benefit.</i>				<input checked="" type="checkbox"/>
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3					
2.6 At some instances, this is not evident. For example, on p.124 Diffraction, Snells law (no					

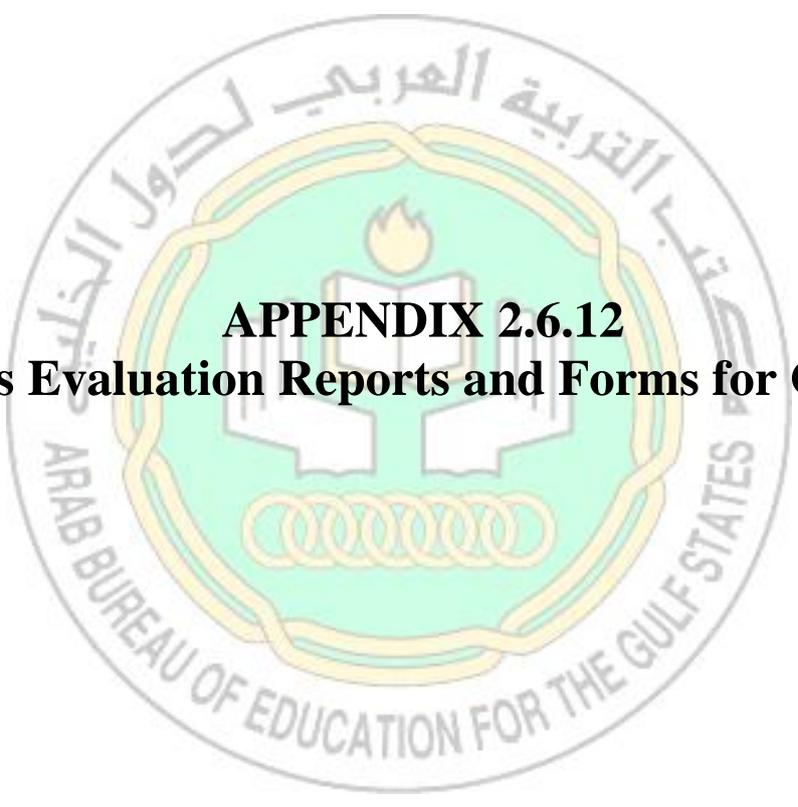
qualitative evidence)  
 Un-translated technical terms, page 136 الزوجان الكروي، الزوجان اللوني

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>80. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
80.1. <i>Illustrations</i>				<input checked="" type="checkbox"/>
80.2. <i>Content</i>		<input checked="" type="checkbox"/>		
80.3. <i>Activities</i>			<input checked="" type="checkbox"/>	
80.4. <i>Practice Exercises</i>				
80.5. <i>Assessment exercises</i>		<input checked="" type="checkbox"/>		
80.6. <i>Skills</i>				<input checked="" type="checkbox"/>
<p>Illustrate by at last one example any indicator of criterion 3 given a score of less than 3</p> <p>3.2 Content Problem p.122 that may cause students' misconceptions "light is transmitted in a straight line from the body into your eyes"</p> <p>Furthermore, In explaining Snell's law of refraction on page 124, the authors describe the mathematical aspect of the law without any in-depth analysis of the phenomena. They just state out the Snell's formula without any physics background. The emphasis is only on the angles of reflection, incidence and refraction with no explanation of the nature of light rays during this process.</p> <p>3.4 very few in-depth and high-order exercises within the chapter</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>81. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
81.1. <i>Illustrations</i>				<input checked="" type="checkbox"/>
81.2. <i>Content</i>				<input checked="" type="checkbox"/>
81.3. <i>Activities</i>			<input checked="" type="checkbox"/>	
81.4. <i>Practice Exercises</i>				<input checked="" type="checkbox"/>
81.5. <i>Assessment exercises</i>				<input checked="" type="checkbox"/>
<p>Illustrate by at last one example any indicator of criterion 4 given a score of less than 3</p>				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



**APPENDIX 2.6.12**  
**Physics Evaluation Reports and Forms for Grade 12**



## English/Arabic Agreement/Table of Content

Subject: **Physics** Class: **Secondary Three Semester 1**

**English Version:** Physics Textbook

Chapters in the order that appears in the Arabic version Chapters 20, 21, 22, 23, 24, 25

**(Please refer to the copies of the table of content of the two versions for comparison)**

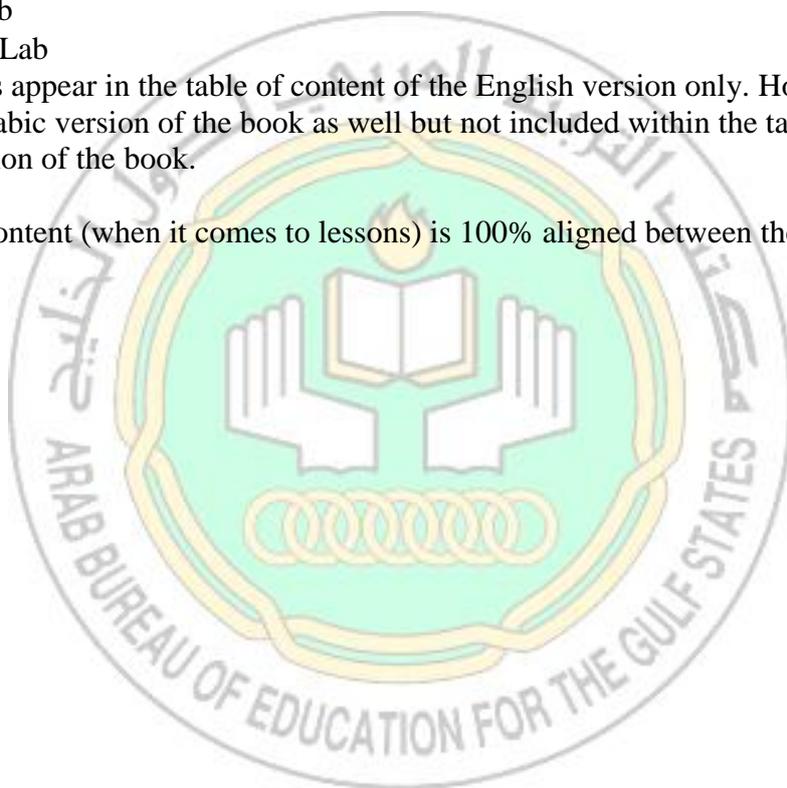
- The tables of contents of the two versions are 95% aligned by lessons, lesson titles and translations of titles.

- In every chapter in the English version, there are sections (mainly activity labs) that are missing from the table of content of the Arabic section. These sections are:

- Launch Lab
- Mini Lab
- Physics Lab

- These sections appear in the table of content of the English version only. However, they are found in the Arabic version of the book as well but not included within the table of content of the Arabic version of the book.

- The table of content (when it comes to lessons) is 100% aligned between the two versions of the book.





<b>Book Evaluation Form</b>	Subject: Physics				
	Grade: Secondary Three				
	Semester: ONE				
	Textbook Title: Physics				
	Chapter Title: Current Electricity				
<i>Criterion/Indicator</i>	Completely different	Large difference	Little difference	Difference due only to cultural	No difference
<b>76. Agreement of the translated Arabic book with that of the English book</b>					
76.1. <i>Definitions and explanations in the chapter</i>					X
76.2. <i>Activities included in the chapter</i>					X
76.3. <i>Learning objectives</i>					X
76.4. <i>Practice exercises</i>					X
76.5. <i>Assessment exercises</i>					X
1.6 <i>Figures, pictures and illustrations</i>				X	

**1.1 --- 1.5 *Definitions and explanations in the chapter, Activities included in the chapter, Learning objectives, Practice exercises, and Assessment exercises***

- The two books are exactly aligned regarding content, definitions of concepts, examples, and activities.

**1.10 *Figures, pictures and illustrations***

Figures and illustrations in the Arabic version of the book are quite different that those in the original book mainly due to cultural considerations. The difference in pictures does not affect meaning at all. The content of each picture is the same (the image delivers the same message in both versions of the book).



## Physics Report

**Subject:** Physics

Semester 1

**Class:** Secondary 3

**Chapters:** 1, 3 and 5

The following report is an evaluation of physics books in Secondary 3(1<sup>st</sup> semester) that were translated to Arabic and adopted by the Ministries of Education. These books include the students' textbooks and student's lab manual. The textbook is divided into six chapters. Three chapters out of six chapters (50% of the books) were selected to represent as much as possible the content of the book and were analyzed: (1) Chapter 1: Static Electricity; Chapter 3: Current Electricity; and Chapter 5: Magnetic Fields.

One evaluation form was filled out for each chapter for the set made up of the textbook and lab manual. The evaluation form consisted of four rubrics along with comments and possible additional indicators. Each rubric focused on evaluating one of the following criteria on a four-scaled basis: (1) alignment of the translated texts to the philosophy of the original textbook; (2) suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students; (3) suitability of the Arabization of the translated textbooks to serve the math concepts; (4) suitability of the translated textbooks to the cultural context of The Gulf States. The scale in each of the four rubrics was rated as: 4 for satisfactory evidence; 3 for almost satisfactory evidence; 2 for little evidence; 1 for no evidence.

The results of the following report are based on the evaluation forms that were filled out. It includes a section on each rubric with a summary of strengths and weaknesses along with comments by the evaluator.

### **Philosophy of the book:**

#### ***Student book: emphasis on:***

- Worldwide advancement across various levels
- Student-centered approach
- Interesting/exciting layout
- Effective educational organization of the book
- Multi-level activities
- Levels that take individual difference into account
- Figures, diagrams and pictures that are well-expressive of the topics of the chapters
- Formative assessment in units and chapters
- Scientific method
- Mental and practical skills that include:
  - Introductory experiments
  - Introduction to physics laboratories
  - Enriching information with experiments
- Integrating physics with various branches of knowledge, with everyday life, with mathematical concepts and with societal issues.

#### ***Activity Book: emphasis on:***



- Conducting experiments that promote students' scientific knowledge
- Helping students to acquire basic manual skills
- Improving students' attitudes towards and interests in science and scientists

### **1. Alignment of the translated texts to the philosophy of the original textbook.**

The book is almost aligned with the philosophy of the original book. The content of the chapter is aligned with some criteria of the philosophy of the original book as it (content) includes the scientist tone (clearly seen by the history of science) through talking about the accomplishments of scientists in pursuit of discovering the physics concepts under study.

There are examples of technological and scientific advancements in all lessons that are well integrated with societal and everyday life issues. Moreover, mathematical concepts are explained within the lesson from a physics perspective in an interesting way. Introductory objectives vary regarding their alignment with the philosophy of the chapter. For example, chapter 1 objectives do highlight some higher order thinking skills (as seen on page 8, such as the ability to *notice the behavior* of electric charge and *analyze* its interaction with matter, as well as the ability to *test* the forces that are related to electric charge). Similarly, within the chapter, (i.e. in lesson), objectives are do include active engagements of the student to prove some physics concepts (such as those found in page 9, “prove” that charged bodies are influenced by attractive and repulsive forces) as well as “prove” that charging includes separation of charges rather than production of charging. Similar case is for chapter 5 (with high order critical thinking objectives).

However, objectives in chapter 3 for example include rote and the recall of scientific concepts, which are not the only learning outcomes that the students will be able to acquire by the end of the chapter. More accuracy should be taken into account regarding not only the alignment of chapter objectives with the philosophy, but also the alignment of the chapter objectives with the content of the chapter itself.

### **2. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students.**

Concerning the use of the Arabic language, the sentences used seem to be appropriate to the students' scientific levels of acquisition. The concepts are defined in simple scientific language that is easily understandable (with the teacher's guidance). New terms are defined, provided with examples and translated for the students. At many instances, there are examples from technology-related events and/or from everyday life to further elaborate the concepts under study.

### **3. Suitability of the Arabization of the translated textbooks to serve the math and science concepts**

Figures and illustrations are well-expressive and serve the science concepts in a good way. The skills provided offer good acquisition of academic, scientific and at fewer times technological/daily life skills of the physics concepts under study.

### **4. Suitability of the translated textbooks to the cultural context of The Gulf States**

The translated chapters are scientifically suitable for KSA students. It does not contain many examples of the KSA culture that is related with the chapter because this would not be relevant. That is, the concepts are well explained and they are not out of context. These



chapters are theoretical, and when real examples are to be given, examples are meaningful to all students (regardless of culture).

I did not find any cultural clash even with un-related examples, because the examples that are found are well explained and elaborated.





<b>Book Evaluation Form</b>		Subject: Physics			
		Grade: Secondary 3			
		Textbook Title: Physics			
		Chapter Title: Chapter 1: Static Electricity			
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>					
<b>77. Alignment of the translated texts to the philosophy of the original textbook</b>					
77.1.	<i>Content of the Chapter</i>			X	
77.2.	<i>Activities included in the chapter</i>				X
77.3.	<i>Learning objectives</i>			X	
77.4.	<i>Practice exercises</i>			X	
77.5.	<i>Assessment exercises</i>				X
77.6.	<i>Skills</i>				X
Illustrate by at last one example any indicator of criterion 1 given a score of less than 3					
		No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>47. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>					
47.1.	<i>Length of sentences</i>				X
47.2.	<i>Complexity of sentences</i>				X
47.3.	<i>Diversity of language structures</i>			X	
47.4.	<i>Number of concepts per chapter</i>				X
47.5.	<i>Reuse of technical terms in subsequent lessons and chapters</i>				X
47.6.	<i>Clarity of definitions of technical terms</i>			X	
47.7.	<i>Using concrete examples to illustrate concepts</i>				X
47.8.	<i>Redundancy of terms and sentences with no educational benefit.</i>			X	
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3					



	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>82. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
82.1. <i>Illustrations</i>			X	
82.2. <i>Content</i>				X
82.3. <i>Activities</i>			X	
82.4. <i>Practice Exercises</i>				X
82.5. <i>Assessment exercises</i>			X	
82.6. <i>Skills</i>				X
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>83. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
83.1. <i>Illustrations</i>			X	
83.2. <i>Content</i>				X
83.3. <i>Activities</i>			X	
83.4. <i>Practice Exercises</i>				X
83.5. <i>Assessment exercises</i>			X	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



<b>Book Evaluation Form</b>	Subject: Physics			
	Grade: Secondary 3			
	Textbook Title: Physics			
	Chapter Title: Chapter 3: Current Electricity			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>78. Alignment of the translated texts to the philosophy of the original textbook</b>				
78.1. <i>Content of the Chapter</i>				X
78.2. <i>Activities included in the chapter</i>			X	
78.3. <i>Learning objectives</i>		X		
78.4. <i>Practice exercises</i>			X	
78.5. <i>Assessment exercises</i>				X
78.6. <i>Skills</i>				X
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 Objectives are bloom levels 1 and 2. Moreover, the content as well as the activities of the book are not aligned with these objectives. Objectives that are almost all recall and rote memorization of concepts are but shortly mentioned within the content. The content however, does include many other learning outcomes that students will acquire and that are not mentioned in the objectives part.</p>				
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>48. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
48.1. <i>Length of sentences</i>			X	
48.2. <i>Complexity of sentences</i>				X
48.3. <i>Diversity of language structures</i>				X
48.4. <i>Number of concepts per chapter</i>				X
48.5. <i>Reuse of technical terms in subsequent lessons and chapters</i>				X
48.6. <i>Clarity of definitions of technical terms</i>			X	
48.7. <i>Using concrete examples to illustrate concepts</i>			X	
48.8. <i>Redundancy of terms and sentences with no educational benefit.</i>				X



Illustrate by at last one example any indicator of criterion 2 given a score of less than 3

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>84. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
84.1. <i>Illustrations</i>				
84.2. <i>Content</i>				X
84.3. <i>Activities</i>				X
84.4. <i>Practice Exercises</i>			X	
84.5. <i>Assessment exercises</i>				X
84.6. <i>Skills</i>				X

Illustrate by at last one example any indicator of criterion 3 given a score of less than 3

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>85. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
85.1. <i>Illustrations</i>			X	
85.2. <i>Content</i>			X	
85.3. <i>Activities</i>				X
85.4. <i>Practice Exercises</i>				X
85.5. <i>Assessment exercises</i>			X	

Illustrate by at last one example any indicator of criterion 4 given a score of less than 3

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



<b>Book Evaluation Form</b>	Subject: Physics			
	Grade: Secondary 3			
	Textbook Title: Physics			
	Chapter Title: Chapter 3: Current Electricity			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>79. Alignment of the translated texts to the philosophy of the original textbook</b>				
79.1.	<i>Content of the Chapter</i>			X
79.2.	<i>Activities included in the chapter</i>		X	
79.3.	<i>Learning objectives</i>	X		
79.4.	<i>Practice exercises</i>		X	
79.5.	<i>Assessment exercises</i>			X
79.6.	<i>Skills</i>			X
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.3 Objectives are bloom levels 1 and 2. Moreover, the content as well as the activities of the book are not aligned with these objectives. Objectives that are almost all recall and rote memorization of concepts are but shortly mentioned within the content. The content however, does include many other learning outcomes that students will acquire and that are not mentioned in the objectives part.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>49. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
49.1.			X	
49.2.				X
49.3.				X
49.4.				X
49.5.				X
49.6.			X	
49.7.			X	
49.8.				X



<i>with no educational benefit.</i>				
Illustrate by at last one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>86. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
86.1. <i>Illustrations</i>				
86.2. <i>Content</i>				X
86.3. <i>Activities</i>				X
86.4. <i>Practice Exercises</i>			X	
86.5. <i>Assessment exercises</i>				X
86.6. <i>Skills</i>				X
Illustrate by at last one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>87. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
87.1. <i>Illustrations</i>			X	
87.2. <i>Content</i>			X	
87.3. <i>Activities</i>				X
87.4. <i>Practice Exercises</i>				X
87.5. <i>Assessment exercises</i>			X	
Illustrate by at last one example any indicator of criterion 4 given a score of less than 3				

Comments and explanation on implementing the indicator.

Additional indicators and other comments.



<b>Book Evaluation Form</b>	Subject: Physics			
	Grade: Secondary 3			
	Textbook Title: Physics			
	Chapter Title: Chapter 5: Magnetic Field			
	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>Criterion/Indicator</b>				
<b>80. Alignment of the translated texts to the philosophy of the original textbook</b>				
80.1.	<i>Content of the Chapter</i>	X		
80.2.	<i>Activities included in the chapter</i>		X	
80.3.	<i>Learning objectives</i>			
80.4.	<i>Practice exercises</i>		X	
80.5.	<i>Assessment exercises</i>			X
80.6.	<i>Skills</i>			X
<p>Illustrate by at last one example any indicator of criterion 1 given a score of less than 3</p> <p>1.1 The content of the chapter is almost only scientific with very rare incidents of relating to daily life or integrating with technology. Although the content is presented in a very interesting layout (as indicated within the philosophy of the original book), there is a big focus on the scientific part of the concepts. Concepts are only presented from physics (and/or mathematical) viewpoints and I think there can be more elaboration regarding the use of these concepts in our daily life. This can be easily done since at the beginning of the chapter, there are common examples of magnet that we use them in our daily life. Therefore, in subsequent events, these examples can be re-integrated within other concepts in the chapter (such as electromagnetism, magnetic fields and galvanometers) avoiding the focus on the abstract part of physics only.</p>				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>50. Suitability of the Arabic language in the translated textbooks to the educational level of The Gulf States students</b>				
50.1.	<i>Length of sentences</i>		X	
50.2.	<i>Complexity of sentences</i>			X
50.3.	<i>Diversity of language structures</i>		X	
50.4.	<i>Number of concepts per chapter</i>			X
50.5.	<i>Reuse of technical terms in subsequent lessons and chapters</i>		X	
50.6.	<i>Clarity of definitions of technical terms</i>			X



50.7. Using concrete examples to illustrate concepts			X	
50.8. Redundancy of terms and sentences with no educational benefit.				X
Illustrate by at least one example any indicator of criterion 2 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>88. Suitability of the Arabization of the translated textbooks to serve the math and science concepts</b>				
88.1. Illustrations				X
88.2. Content				X
88.3. Activities				X
88.4. Practice Exercises			X	
88.5. Assessment exercises			X	
88.6. Skills				X
Illustrate by at least one example any indicator of criterion 3 given a score of less than 3				

	No evidence	Little evidence	Almost satisfactory evidence	Satisfactory evidence
<b>89. Suitability of the translated textbooks to the cultural context of The Gulf States</b>				
89.1. Illustrations			X	
89.2. Content				X
89.3. Activities			X	
89.4. Practice Exercises				X
89.5. Assessment exercises				X
Illustrate by at least one example any indicator of criterion 4 given a score of less than 3				
<p>The items found in this chapter are not (and actually cannot be) taken from the context of KSA simply because this chapter is about magnetic fields and magnets. However, they are well explained and they are not strange to students and are not taken from a different contextual setting. So they do not seem to be problematic at all.</p>				

Comments and explanation on implementing the indicator.  
Additional indicators and other comments.

