

Mathematics 8

Yearly Plan

2016–2017

Mathematics 8 Yearly Plan

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The following is the yearly plan for Mathematics 8. The plan is divided into eight units. Suggestions to help guide your daily mental mathematics are found in the ProGuide for each unit. Use the Mathematics 8 Curriculum Document and Yearly Plan to develop your Mathematics 8 program. Page numbers referenced in this Document refer to the Student Text (print) and ProGuide (print) of the Math Makes Sense 8 program.

The Year at a Glance		
Unit # and Title	Suggested Time Frame	Unit Outcomes
Unit 1 Square Roots and Pythagorean Theorem	(25 hours)	N01, N02, M01
Unit 2 Integers	(20 hours)	N07
Unit 3 Operations with Fractions	(28 hours)	N06
Unit 4 Measuring Prisms and Cylinders	(25 hours)	M02, M03, M04
Unit 5 Percent, Ratio, and Rate	(26 hours)	N03, N04, N05
Unit 6 Linear Equations and Graphing	(25 hours)	PR01, PR02
Unit 7 Data and Probability	(19 hours)	SP01, SP02
Unit 8 Geometry	(17 hours)	G01, G02

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Unit 1 Square Roots and Pythagorean Theorem (25 hours)

Timeline	GCO/SCOs	Suggested Time Allocation	Topic	Curriculum Document/ Supporting Resources
September	Introductory Lesson	2 hours	–Course Outline/Formalizing Norms etc -Textbook walk through	Develop classroom norms •Set tone for problem solving •Develop various strategies/approaches for critical thinking and problem solving
September-20 days	<p>Unit 1 Square Roots and Pythagorean Theorem</p> <p>N01 Students will be expected to demonstrate an understanding of perfect squares and square roots, concretely, pictorially, and symbolically (limited to whole numbers).</p> <p>N02 Students will be expected to determine the approximate square root of numbers that are not perfect squares (limited to whole numbers).</p> <p>M01 Students will be expected to develop and apply the Pythagorean theorem to solve problems.</p>	1 hour	Assessing Prior Knowledge	Curriculum Document: N01 , N02, M01 ProGuide: pp. 2-3 Student Text: pp. 4-5
		5 hours	Perfect Squares and Square Roots	Curriculum Document: N01 ProGuide/Student Text: sections 1.1, 1.2
		4 hours	Approximating Square Roots	Curriculum Document: N02 ProGuide/Student Text: section 1.4 Game (Fitting In) : ProGuide p. 26/ Student Text p. 28 Technology (Investigating Square Roots with a Calculator) : ProGuide p. 27/ Student Text p. 29
		1 hour	Mid-Unit Review	Curriculum Document: N01 and N02 Student Text p. 30
		5 hours	The Pythagorean Theorem	Curriculum Document: M01 ProGuide/Student Text : section 1.5, 1.6 Technology (Verifying the Pythagorean Theorem) ProGuide p. 35/ Student Text pp. 37-38
		3 hours	Using the Pythagorean Theorem to Solve Problems	Curriculum Document: M01 ProGuide/Student Text: section 1.7
		4 hours	Reinforcement, Consolidation, and Assessment	Curriculum Document: N01, N02, M01 Strategies for Success : Getting Unstuck ProGuide pp. 50-51 Student Text pp. 52-53 Unit Problem: The Locker Problem ProGuide pp. 58-59 Student Text pp. 60-61 Unit Review ProGuide pp. 52-55 Student Text p. 54-57 Practice Test ProGuide pp. 56-57 Student Text pp.58-59 ProGuide Unit Test Extra Practice & Test Generator (CD)

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Unit 2 Integers (20 hours)

Timeline	GCO/SCOs	Suggested Time Allocation	Topic	Resources
October-20 days	Unit 2 Integers N07 Students will be expected to demonstrate an understanding of multiplication and division of integers, concretely, pictorially, and symbolically.	2 hours	Assessing Prior Knowledge	Curriculum Document: N07 ProGuide: pp. 2-3 Student Text: pp. 62-63
		6 hours	Multiplying Integers	Curriculum Document: N07 ProGuide/Student Text: section 2.1, 2.2 Game: What's My Product ProGuide p. 16 Student Text p. 76
		5 hours	Dividing Integers	Curriculum Document: N07 ProGuide/Student Text: section 2.3, 2.4
		1 hour	Mid-Unit Review	Curriculum Document: N07 ProGuide p. 23 Student Text p. 83
		2 hours	Order of Operations involving Integers	Curriculum Document: N07 ProGuide/Student Text: section 2.5
		4 hours	Reinforcement, Consolidation, and Assessment	Curriculum Document: N07 Strategies for Success: Understanding the Problem ProGuide pp. 34-35 Student Text pp. 94-95 Unit Problem: Charity Golf Tournament ProGuide pp. 40-41 Student Text pp. 100-101 Unit Review ProGuide pp. 36-38 Student Text pp. 96-98 Practice Test ProGuide p. 39 Student Text p. 99 ProGuide Unit Test Extra Practice & Test Generator (CD)

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Unit 3 Fractions (28 hours)

Timeline	GCO/SCOs	Suggested Time Allocation	Topic	Resources
November-December	Unit 3 Fractions N06 Students will be expected to demonstrate an understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially, and symbolically.	2 hours	Assessing Prior Knowledge	Curriculum Document: N06 ProGuide: pp. 2-3, section 3.8 where appropriate Student Text: pp. 102-103, section 3.8 where appropriate
		9 hours	Multiplying Fractions	Curriculum Document: N06 ProGuide/Student Text: sections 3.1, 3.2, 3.3, 3.4 *Section 3.8 as appropriate Game: Spinning Fractions ProGuide p. 27 Student Text p. 127
		1 hour	Mid-Unit Review	Curriculum Document: N06 ProGuide pp. 27-28 Student Text pp. 127-128
		8 hours	Dividing Fractions	Curriculum Document: N06 ProGuide/Student Text: section 3.5, 3.6, 3.7 *Section 3.8 as appropriate
		3 hours	Order of Operations with Fractions	Curriculum Document: N06 ProGuide/Student Text: section 3.9
		5 hours	Reinforcement, Consolidation, and Assessment	Curriculum Document: N06 Strategies for Success: Checking and Reflecting ProGuide pp. 56-57 Student Text pp. 156-157 Unit Problem: Sierpinski Triangle ProGuide pp. 64-65 Student Text pp. 164-165 Unit Review ProGuide pp. 58-61 Student Text pp. 158-161 Practice Test ProGuide pp. 62-63 Student Text pp. 162-163 ProGuide Unit Test Extra Practice & Test Generator (CD) Cumulative Review (Units 1-3) ProGuide pp. 66-67 Student Text pp. 166-167

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Unit 4 Prisms and Cylinders (25 hours)

Timeline	GCO/SCOs	Suggested Time Allocation	Topic	Resources
December-mid-January	<p>Unit 4 Prisms and Cylinders</p> <p>M02 Students will be expected to draw and construct nets for 3-D objects.</p> <p>M03 Students will be expected to determine the surface area of right rectangular prisms, right triangular prisms, and right cylinders to solve problems.</p> <p>M04 Students will be expected to develop and apply formulas for determining the volume of right rectangular prisms, right triangular prisms, and right cylinders.</p>	1 hour	Assessing Prior Knowledge	<p>Curriculum Document: M02, M03, M04</p> <p>ProGuide pp. 2-3</p> <p>Student Text pp. 168-169</p>
		4 hours	Nets for 3-D Objects	<p>Curriculum Document: M02</p> <p>ProGuide/Student Text: sections 4.1, 4.2</p>
		8 hours	Surface Area of Right Rectangular Prisms, Right Triangular Prisms, and Right Cylinders	<p>Curriculum Document: M03</p> <p>ProGuide/Student Text: sections 4.3, 4.4, 4.7</p>
		1 hour	Mid-Unit Review	<p>Curriculum Document: M02, M03</p> <p>ProGuide p. 28</p> <p>Student Text p. 194</p>
		7 hours	Volume of Right Rectangular Prisms, Right Triangular Prisms, and Right Cylinders.	<p>Curriculum Document: M04</p> <p>ProGuide/Student Text: sections 4.5, 4.6, 4.8</p> <p>Game : Largest Box Problem</p> <p>ProGuide p. 35</p> <p>Student Text p. 201</p>
		4 hours	Reinforcement, Consolidation, and Assessment	<p>Curriculum Document: M02, M03, M04</p> <p>Strategies for Success: Choosing the Correct Answer</p> <p style="padding-left: 40px;">ProGuide pp. 54-55</p> <p style="padding-left: 40px;">Student Text pp. 220-221</p> <p>Unit Problem: Prism Diorama</p> <p style="padding-left: 40px;">ProGuide pp. 62-63</p> <p style="padding-left: 40px;">Student Text pp. 228-229</p> <p>Investigation: Pack it Up</p> <p style="padding-left: 40px;">ProGuide pp. 64-66</p> <p style="padding-left: 40px;">Student Text pp. 230-231</p> <p>Unit Review</p> <p style="padding-left: 40px;">ProGuide pp. 56-59</p> <p style="padding-left: 40px;">Student Text pp. 222-225</p> <p>Practice Test</p> <p style="padding-left: 40px;">ProGuide pp. 60-61</p> <p style="padding-left: 40px;">Student Text pp. 226-227</p> <p>ProGuide Unit Test</p> <p>Extra Practice & Test Generator (CD)</p>

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Unit 5 Percent, Ratio, and Rate (26 hours)

Timeline	GCO/SCOs	Suggested Time Allocation	Topic	Resources
Mid-January-third week in February	<p>Unit 5 Percent, Ratio, and Rate</p> <p>N03 Students will be expected to demonstrate an understanding of and solve problems involving percents greater than or equal to 0%.</p> <p>N04 Students will be expected to demonstrate an understanding of ratio and rate.</p> <p>N05 Students will be expected to solve problems that involve rates, ratios, and proportional reasoning.</p>	1 hour	Assessing Prior Knowledge	Curriculum Document: N03, N04, N05 ProGuide pp. 2-3 Student Text pp. 232-233
		8 hours	Percent	Curriculum Document: N03 ProGuide/Student Text: sections 5.1, 5.2, 5.3, 5.4
		1 hour	Mid-Unit Review	Curriculum Document: N03 ProGuide p. 33 Student Text p. 263
		12 hours	Rates, Rates, and Proportional Reasoning	Curriculum Document: N04, N05 ProGuide/Student Text: sections 5.5, 5.6, 5.7, 5.9, 5.10 Nova Scotia Curriculum Companion (on Mathematics Learning Commons 7-9) and Student e-text sections 5.8A, 5.8B *Sections 5.8A and 5.8B in the Nova Scotia Curriculum Companion replace section 5.8 in the Student Text Game: Triple Play ProGuide p. 48 Student Text p. 278
		4 hours	Reinforcement, Consolidation, and Assessment	Curriculum Document: N03, N04, N05 Strategies for Success: Explaining Your Thinking ProGuide pp. 46-47 Student Text pp. 276-277 Unit Problem: What is the Smartest, Fastest, Oldest? ProGuide pp. 84-85 Student Text pp. 314-315 Unit Review ProGuide pp. 77-81 (omit questions 11, 12, and 13) Student Text pp. 307-311 (omit questions 11, 12, and 13) Practice Test ProGuide pp. 82-83 (omit question 5) Student Text pp. 312-313 (omit question 5) ProGuide Unit Test Extra Practice & Test Generator (CD)

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Unit 6 Linear Equations and Graphing (25 hours)

Timeline	GCO/SCOs	Suggested Time Allocation	Topic	Resources
Fourth week in February— March	<p>Unit 6 Linear Equations and Graphing</p> <p>PR01 Students will be expected to graph and analyze two-variable linear relations.</p> <p>PR02 Students will be expected to model and solve problems, concretely, pictorially, and symbolically, where a, b, and c are integers, using linear equations of the form</p> $ax = b$ $\frac{x}{a} = b, a \neq 0$ $ax + b = c$ $\frac{x}{a} + b = c, a \neq 0$ $a(x + b) = c$	1 hour	Assessing Prior Knowledge	Curriculum Document: PR01, PR02 ProGuide pp. 2-3 Student Text pp. 316-317
		12 hours	Solving Linear Equations	Curriculum Document: PR02 ProGuide/Student Text: sections 6.1, 6.2, 6.3, 6.4, 6.5 Game: Make the Number ProGuide p. 35 Student Text p. 349
		1 hour	Mid-Unit Review	Curriculum Document: PR02 ProGuide p. 36 Student Text p. 350
		6 hours	Graphing and Analyzing Linear Relations	Curriculum Document: PR01 ProGuide/Student Text: sections 6.6, 6.7 Technology : Using Spreadsheets to Graph Linear Relations ProGuide pp. 52-53 Student Text pp. 366-367
		5 hours	Reinforcement, Consolidation, and Assessment	Curriculum Document: PR01, PR02 Strategies for Success: Choosing a Strategy ProGuide pp. 54-55 Student Text pp. 368-369 Unit Problem: Planning a Ski Trip ProGuide pp. 62-63 Student Text pp. 376-377 Unit Review ProGuide pp. 56-59 Student Text pp. 370-373 Practice Test ProGuide pp. 60-61 Student Text pp. 374-375 ProGuide Unit Test Extra Practice & Test Generator (CD) Cumulative Review (Units 1-6) ProGuide pp. 64-65 Student Text pp. 378-379

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Unit 7 Data Analysis and Probability (19 hours)

Timeline	GCO/SCOs	Suggested Time Allocation	Topic	Resources
April-first week in May	<p>Unit 7 Data Analysis and Probability</p> <p>SP01 Students will be expected to critique ways in which data is presented.</p> <p>SP02 Students will be expected to solve problems involving the probability of independent events.</p>	1 hour	Assessing Prior Knowledge	<p>Curriculum Document: SP01, SP02</p> <p>ProGuide pp. 2-3</p> <p>Student Text pp. 380-381</p>
		7 hours	Critiquing the Representation of Data	<p>Curriculum Document: SP01</p> <p>ProGuide/Student Text: section 7.1</p> <p>Technology : Using Spreadsheets to Record and Graph Data</p> <p>ProGuide pp. 13-15</p> <p>Student Text pp. 391-393</p> <p>ProGuide/Student Text: section 7.2</p> <p>Technology : Using Spreadsheets to Investigate Formatting</p> <p>ProGuide pp. 25-27</p> <p>Student Text pp. 403-405</p>
		1 hour	Mid-Unit Review	<p>Curriculum Document: SP01</p> <p>ProGuide p. 28</p> <p>Student Text p. 406</p>
		6 hours	The Probability of Independent Events	<p>Curriculum Document: SP02</p> <p>ProGuide/Student Text: sections 7.3, 7.4</p> <p>Game: Empty the Rectangles</p> <p>ProGuide p. 38</p> <p>Student Text p. 416</p> <p>Technology : Using Technology to Investigate Probability</p> <p>ProGuide p. 45</p> <p>Student Text p. 423</p>
		4 hours	Reinforcement, Consolidation, and Assessment	<p>Curriculum Document: SP01, SP02</p> <p>Strategies for Success: Doing Your Best on a Test</p> <p>ProGuide pp. 36-37</p> <p>Student Text pp. 414-415</p> <p>Unit Problem: Promoting Your Cereal</p> <p>ProGuide pp. 52-53</p> <p>Student Text pp. 430-431</p> <p>Unit Review</p> <p>ProGuide pp. 46-49</p> <p>Student Text pp. 424-427</p> <p>Practice Test</p> <p>ProGuide pp. 50-51</p> <p>Student Text pp. 428-429</p> <p>ProGuide Unit Test</p> <p>Extra Practice & Test Generator (CD)</p>

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Unit 8 Geometry (17 hours)

Timeline	GCO/SCOs	Suggested Time Allocation	Topic	Resources
2nd week in May-End of May	Unit 8 Geometry	1 hours	Assessing Prior Knowledge	Curriculum Document: G01, G02 ProGuide pp. 2-3 Student Text pp. 432-433
	G01 Students will be expected to draw and interpret top, front, and side views of 3-D objects composed of right rectangular prisms.	8 hours	Views of 3-D Objects Composed of Right Rectangular Prisms	Curriculum Document: G01 ProGuide/Student Text: section 8.1 Technology : Using a Computer to Draw Views of Objects ProGuide p. 10 Student Text p. 440 ProGuide/Student Text: sections 8.2, 8.3 Technology : Using a Computer to Construct Objects from Their Views ProGuide p. 24 Student Text p. 454
	G02 Students will be expected an understanding of the congruence of polygons under a transformation.	1 hour	Mid-Unit Review	Curriculum Document: G01 ProGuide p. 25 Student Text p. 455
		2 hours	Congruence of Polygons Under a Transformation	Curriculum Document: G02 Nova Scotia Curriculum Companion (on Mathematics Learning Commons 7-9) and Student e-text section 8.4A *Section 8.4A in the Nova Scotia Curriculum Companion replaces sections 8.4, 8.5, and 8.6 in the Student Text
		5 hours	Reinforcement, Consolidation, and Assessment	Curriculum Document: G01, G02 Strategies for Success: Explaining Your Answer ProGuide pp. 50-51 Student Text pp. 480-481 Unit Review ProGuide pp. 52-55 (omit questions 8-16) Student Text pp. 482-485 (omit questions 8-16) Practice Test ProGuide pp. 56-57 (omit question 8) Student Text pp. 486-487 (omit question 8) ProGuide Unit Test (only questions 1-5) Extra Practice & Test Generator (CD) Cumulative Review (Chapters 1-8) ProGuide pp. 64-67 Student Text pp. 492-495