Foundational Skills to Support Early Reading Understanding

Introduction

Introduction to the *Foundational Skills to Support Reading for Understanding in Kindergarten Through 3rd Grade* Practice Guide

Achieving high levels of literacy among young readers continues to be a challenge in the United States. In 2013, only 35 percent of 4th-graders scored at or above a proficient level on the National Assessment of Educational Progress—numbers that have remained largely unchanged since 1992.[1]

To develop literacy, students need instruction in two related sets of skills: foundational reading skills and reading comprehension skills. This What Works Clearinghouse (WWC) practice guide focuses on the foundational reading skills that enable students to read words (alphabetics), relate those words to their **oral language**, and read **connected text** with sufficient accuracy and **fluency** to understand what they read. This practice guide, developed by a panel of experts comprised of researchers and practitioners, presents four recommendations that educators can use to improve literacy skills in the early grades. These recommendations are based on the best available research, as well as the experience and expertise of the panel members.

> See the Glossary for a full list of key terms used in this guide and their definitions. These terms are **bolded** when first introduced in the guide.

Overarching themes

This guide provides teachers, reading coaches, principals, and other educators with actionable recommendations for developing the foundational reading skills of students in kindergarten through 3rd grade. This guide might also be relevant for educating older students who need reading remediation. Each recommendation provides instructional advice on a specific topic; together, the four recommendations presented in this practice guide highlight three interrelated themes for improving instruction in foundational reading skills.

- **Reinforcing the effectiveness of instruction in alphabetics, fluency, and vocabulary.** In a seminal report, the National Reading Panel (NRP) found strong evidence for the benefits of instruction in alphabetics, fluency, and vocabulary in studies conducted up to the year 2000.[2] Because the NRP's approach, study sources, and use of methodological standards are similar to those of the WWC, the panel determined that a review of research prior to 2000 would likely replicate much of the work of the NRP and reach similar conclusions. This practice guide reviews research published since 2000 and finds new evidence supporting instruction in alphabetics, fluency, and **vocabulary**, as well as new evidence supporting instruction in additional skills.[3] Using this updated evidence base, this guide provides detailed guidance to educators on how to implement these evidence-based practices.

- **Providing instruction in broad oral language skills.** This guide recommends expanding on the NRP report—which only addressed vocabulary—and instructing students in a range of oral language skills, specifically **inferential** and **narrative language** and **academic vocabulary**, which prepare students to read and communicate formal language.

- **Integrating all aspects of reading instruction.** The panel believes that the recommended activities should be part of an integrated approach to foundational reading instruction. For example, as soon as students can **decode** simple words (Recommendation 3), they should have opportunities to practice reading new and familiar words or word parts in connected

text (Recommendation 4). The panel recommends integrating the recommendations based on their expertise and the studies reviewed. Specifically, although no studies directly tested the effects of integrating the recommendations, 25 studies that meet WWC design standards had interventions that did integrate activities from multiple recommendations (see Table D.3).

Overview of the recommendations

1. **Teach students academic language skills, including the use of inferential and narrative language, and vocabulary knowledge.**

   1. Engage students in conversations that support the use and comprehension of inferential language.
   2. Explicitly engage students in developing narrative language skills.
   3. Teach academic vocabulary in the context of other reading activities.

2. **Develop awareness of the segments of sounds in speech and how they link to letters.**

   1. Teach students to recognize and manipulate segments of sound in speech.
   2. Teach students letter–sound relations.
   3. Use word-building and other activities to link students' knowledge of letter–sound relationships with phonemic awareness.

3. **Teach students to decode words, analyze word parts, and write and recognize words.**

   1. Teach students to blend letter sounds and sound–spelling patterns from left to right within a word to produce a recognizable pronunciation.
   2. Instruct students in common sound–spelling patterns.
   3. Teach students to recognize common word parts.
   4. Have students read decodable words in isolation and in text.

5. Teach regular and irregular high-frequency words so that students can recognize them efficiently.
6. Introduce non-decodable words that are essential to the meaning of the text as whole words.

4. **Ensure that each student reads connected text every day to support reading accuracy, fluency, and comprehension.**

   1. As students read orally, model strategies, scaffold, and provide feedback to support accurate and efficient word identification.
   2. Teach students to self-monitor their understanding of the text and to self-correct word-reading errors.
   3. Provide opportunities for oral reading practice with feedback to develop fluent and accurate reading with expression.

Summary of supporting research

Practice guide staff conducted a thorough literature search, identified studies that met protocol requirements, and then reviewed those studies using the WWC group design standards. This literature search focused on studies published since 2000 (that is, studies published after the NRP's systematic review of reading research).[4] Each recommendation is assigned a level of evidence that indicates the quality and quantity of evidence published since 2000 that assessed the effectiveness of the practices outlined in the recommendation.

A search for literature related to foundational reading instruction published between 2000 and 2014 yielded more than 4,500 citations. These studies were screened for relevance according to eligibility criteria described in the practice guide protocol.[5] Studies that included populations of interest, measured relevant outcomes, and assessed the effectiveness of replicable practices used to teach foundational reading skills were included. Of the eligible studies, 235 studies were reviewed using WWC

The **level of evidence** assigned to each recommendation indicates the strength of the evidence for the effect of the practices on student achievement, based on studies published since 2000.

group design standards. From this subset, 56 studies met the WWC's rigorous group design standards, were relevant to the panel's recommendations, and affect the level of evidence. Studies were classified as having a positive or negative effect when the result was

either statistically significant (unlikely to occur by chance) or substantively important (producing considerable differences in outcomes).

The evidence level for each recommendation is based on an assessment of the relevant evidence supporting each recommendation. Table I.1 shows the level of evidence rating for each recommendation as determined by WWC guidelines outlined in Table A.1 in Appendix A. (Appendix D presents more information on the body of research evidence supporting each recommendation.)

Table I.1. Recommendations and corresponding levels of evidence

Recommendation	Levels of Evidence		
	Strong Evidence	Moderate Evidence	Minimal Evidence
1. Teach students academic language skills, including the use of inferential and narrative language, and vocabulary knowledge.			◆
2. Develop awareness of the segments of sounds in speech and how they link to letters.	◆		
3. Teach students to decode words, analyze word parts, and write and recognize words.	◆		
4. Ensure that each student reads connected text every day to support reading accuracy, fluency, and comprehension.		◆	

How to use this guide

This guide provides teachers, reading coaches, principals, and other educators with instructional recommendations that can be implemented in conjunction with existing standards or curricula and does not recommend a particular curriculum. Teachers can

use the guide when planning instruction to support the development of foundational reading skills among students in grades K–3 and in diverse contexts.

The guide can also be useful to professional-development providers, program developers, and researchers. Professional-development

providers can use the guide to implement **evidence-based** instruction and align instruction with state standards or to prompt teacher discussion in professional-learning communities. Program developers can use the guide to create more-effective early-reading curricula and interventions. Finally, researchers may find opportunities to test the effectiveness of various approaches to foundational reading education and explore gaps or variations in the reading-instruction literature.

The panel believes that the recommendations should be implemented in the basic sequence in which they are presented, with adjustments based on students' abilities and needs. Figure I.1 illustrates the panel's suggested timeline for teachers to implement the recommendations in grades K–3. Teachers should implement Recommendation 1 beginning in kindergarten and continuing through 3rd grade. The panel believes that teachers should implement the relevant parts of Recommendations 2 and 3 based on the abilities and reading level of their students, recognizing that some parts of the recommendations apply to students in the early stages of reading acquisition, while others apply to students that are more advanced.

Figure I.1. Timeline for use of recommendations across grades K–3

Grade K	Grade 1	Grade 2	Grade 3
Recommendation 1			
Recommendation 2			
		Recommendation 3	
		Recommendation 4	
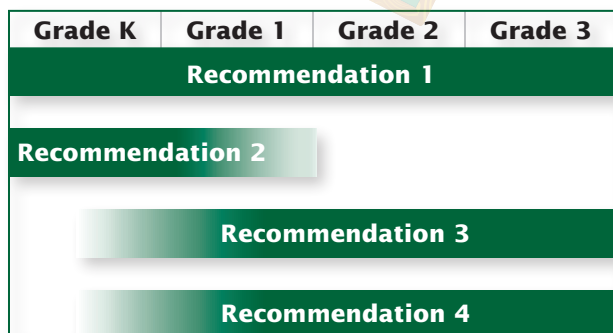
The figure does not mean that students need to master the activities in Recommendation 2 before beginning the activities in Recommendation 3. The recommendations address different aspects of foundational reading skills, and teachers may implement different parts of Recommendations 2 and 3 at the same time, especially as students master the alphabetic principle. Likewise, teachers should assess when their students are ready to advance to new material; this may mean that some teachers implement recommendations earlier or later than others. The panel believes that teachers should initiate Recommendation 4 as soon as students can read a few words and use it as needed throughout reading instruction. The guide includes examples to illustrate how to adapt the activities in Recommendations 1 and 4 for different grades.

Alignment with existing practice guides

This practice guide is a companion to another WWC practice guide that focuses on **reading comprehension**—deriving meaning from the words, sentences, and paragraphs read—in the primary grades: *Improving Reading Comprehension in Kindergarten Through 3rd Grade*.[6] Like that practice guide, this guide provides recommendations intended to describe the essential components of good classroom instruction for English-speaking general education students and provide teachers with deep knowledge and shared understanding of these critical components.

English learners (ELs) and students with disabilities have distinct needs and are the focus of other practice guides[7] (studies reviewed for this guide had samples that were fewer than half ELs or students with an identified disability). However, the panel considers the recommendations in this guide to be relevant to these populations and knows of no evidence to the contrary. Furthermore, the *Teaching Academic Content and Literacy to English Learners in Elementary and Middle School*[8] practice guide finds evidence supporting a recommendation to teach academic vocabulary to English learners that is similar to Recommendation 1 of this guide. The panel also recognizes that elementary reading teachers may seek recommendations related to reading comprehension, writing instruction, or the use of ongoing assessments to

monitor student progress and identify instructional needs. The following practice guides provide content related to these populations, skills, and tools:

- *Improving Reading Comprehension in Kindergarten Through 3rd Grade*, a companion to the current guide, offers five recommendations to help educators improve the reading comprehension skills of students in kindergarten through grade 3.

- *Teaching Elementary School Students to Be Effective Writers*[9] offers four recommendations on writing instruction for students in kindergarten through grade 6.

- *Teaching Academic Content and Literacy to English Learners in Elementary and Middle School*[10] provides four recommendations on what works for English learners during reading and content-area instruction.

- *Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades*[11] offers five recommendations to help educators identify struggling readers and implement strategies to support their reading achievement.

- *Using Student Achievement Data to Support Instructional Decision Making*[12] includes guidance on the use of ongoing assessment to understand students' abilities and shape instruction.

Teach students academic language skills, including the use of inferential and narrative language, and vocabulary knowledge.

Academic language is a critical component of oral language. Academic language skills include the following abilities (see Example 1.1 for an explanation of each):

Implementation Timeline

Grade K	Grade 1	Grade 2	Grade 3
Recommendation 1			

- *articulating ideas beyond the immediate context (inferential language)*
- *clearly relating a series of events, both fictional and nonfictional (narrative language)*
- *comprehending and using a wide range of academic vocabulary and grammatical structures, such as pronoun references*
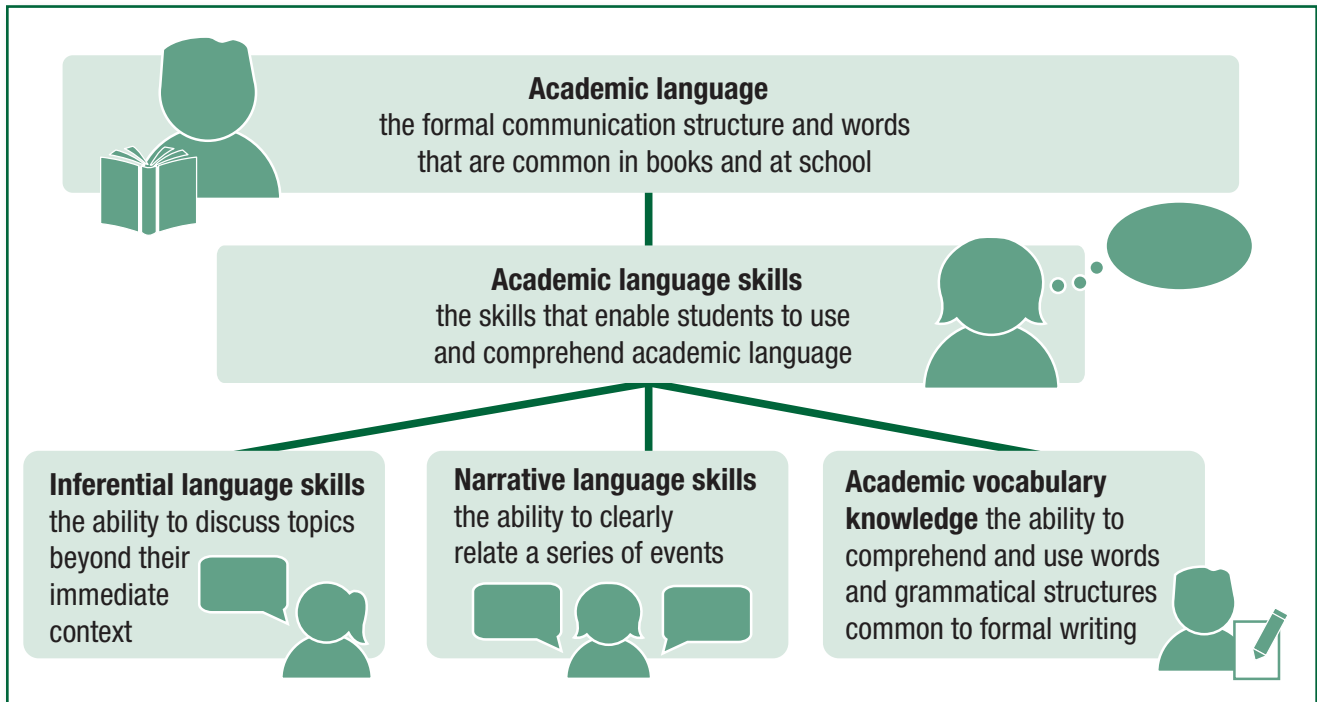
Students who enter kindergarten with limited academic language skills typically lag behind their peers in reading.[13] Academic language skills enable students to understand the formal structures and words found in books and school. Academic language includes words and structures that are common across subjects and unique to individual subjects. While students typically develop social language skills naturally—those used to communicate informally with family and friends—academic language skills usually require instruction. By guiding students to develop their academic language skills, teachers can mitigate some of the challenges that students encounter when learning to comprehend text.

Students of all ages and text-reading abilities need to engage in activities that purposefully develop academic language skills. Inferential language instruction supports students' ability to think analytically and to understand text that connects ideas from multiple contexts. Students with more advanced narrative language skills can follow increasingly intricate series

Example 1.1. Academic language skills

Academic language
the formal communication structure and words that are common in books and at school

Academic language skills
the skills that enable students to use and comprehend academic language

Inferential language skills
the ability to discuss topics beyond their immediate context

Narrative language skills
the ability to clearly relate a series of events

Academic vocabulary knowledge the ability to comprehend and use words and grammatical structures common to formal writing

*of events, such as stories, historical events, phenomena in nature, and instructions. The panel encourages teachers to use a variety of texts, including **informational texts**, during activities involving academic language skills.*

The vocabulary activities in Recommendation 1 are similar to Recommendation 1 in the Teaching Academic Content and Literacy to English Learners in Elementary and Middle School practice guide, to "teach a set of academic vocabulary words intensively across several days using a variety of instructional activities."[14] Both emphasize the need to focus on words that are common across subject areas and to reinforce the learning throughout the day and week. The guidance for teaching academic vocabulary to English learners also focuses on engaging students in discussions, similar to the first and second components of Recommendation 1 in this guide, related to teaching inferential and narrative language. However, this guide provides detailed instructions and examples to teach students narrative and inferential language, and how to reinforce those skills. This guide also addresses the need to explicitly teach students grammar rules common in formal settings.

Summary of evidence: Minimal Evidence

Seven studies that examined interventions teaching students inferential language and vocabulary meet WWC group design standards and include a relevant outcome (see Appendix D).[15] Three studies found that the recommended practices had positive effects on vocabulary outcomes (aligned with the third component of Recommendation 1),[16] and three studies found no discernible effects on vocabulary outcomes.[17] Two of the studies that found positive effects meet WWC group design standards without reservations.[18] The three studies that found positive effects were implemented in the United States during scheduled classes with students in kindergarten through 2nd grade; two of the studies examined general education students,[19] and one included students at risk for reading difficulties.[20] These three studies compared students receiving the intervention to students

receiving regular classroom instruction. All four studies examining **listening comprehension** outcomes found no discernible effects.[21] No study that meets WWC group design standards examined effects on **syntax** outcomes. Overall, the body of evidence indicated positive but inconsistent findings for vocabulary outcomes, no discernible effects for listening comprehension outcomes, and no findings on syntax outcomes. Therefore, the panel and staff assigned a *minimal* level of evidence to Recommendation 1.

How to carry out the recommendation

1. Engage students in conversations that support the use and comprehension of inferential language.

Develop students' inferential language—such as predicting, problem-solving, hypothesizing, or contrasting—with conversations before, during, and after read-alouds or other activities.[22] These conversations should engage students in higher-level thinking that encourages using inferential language.[23] Use open-ended questions to challenge students to think about the messages in both narrative and informational texts and how those messages apply to the world around them, by connecting events to

> **Inferential language** focuses on topics removed from the here and now.

their own lives, hypothesizing causal relationships, or solving problems (see Example 1.2).[24] As students progress, ask increasingly complex questions, such as why an author used a certain metaphor, to encourage them to think critically and use inferential language.

Example 1.2. Inferential language discussion prompts

Informational Text	Narrative Text
• Why do birds fly south for winter? • What would happen if you planted a tree in the desert? • Why is it important to recycle? • How can we encourage people to recycle?	• Why did the character do what he or she did? • What else could he or she have done? • What would you have done in that situation? • Can you imagine facing a similar problem today?

Teachers should first **model** how to provide reasoned answers that fully address the questions and illustrate critical thinking.[25] Prompt students to include additional detail, to connect the targeted idea and their response, and to answer with general statements that are not tied to the specific characters, events, or facts presented in the text (see Example 1.3). A prompt might include the question, "Why do you think that?" Similarly, if the teacher asks, "Why do birds fly south for the winter?" and a student responds, "It's cold," the teacher can encourage the student to restate the question and answer in a full sentence, such as, "Birds fly south for the winter because it is cold." As students' skills develop, they can engage in small-group conversations, with a designated student as the conversation leader.[26]

Example 1.3. Using inferential language in a read-aloud conversation

Teacher: This book is about cheetahs. Cheetahs are a kind of cat; they are actually a type of wild cat. Wild cats are different from the cats we have as pets in our homes.

Student 1: I have a cat.

Teacher: Is your cat a wild cat or a pet?

Student 1: She's my pet.

Teacher: Yes, if your cat lives in your house she is a pet. How would you describe your cat?

Student 1: She is gray. She is nice and soft.

Teacher: Okay, so you would describe your cat as gray, nice, and soft. Can you put the question and the answer together in one sentence? The question was "How would you describe your cat?" so your answer should start with, "I would describe…"

Student 1: I would describe my cat as gray, nice, and soft, and she likes to catch birds.

Teacher: Well, that is one way wild cats are similar to pet cats we have at home. They both like to catch things. What are some ways wild cats might be different from cats that are our pets?

Student 2: Wild cats are wild.

Teacher: Well, that's true. What makes wild cats seem wild?

Student 2: You can't pet them.

Teacher: Can you put the question and the answer together in one sentence? The question was, "What makes wild cats seem wild?"

Student 2: Wild cats seem wild because you can't pet them.

Teacher: Good!

Student 1: And they don't eat cat food. And they probably don't live inside.

Teacher: Exactly. Wild cats are wild! As wild animals, they don't like human contact, they catch their own food, and they live in the wild.

2. Explicitly engage students in developing narrative language skills.

Beginning readers need to develop narrative language skills to understand text and engage in discussions that extend across multiple sentences.[27] Narrative language refers to creating or understanding a fictional or real account of an experience or occurrence, such as how a caterpillar becomes a butterfly. Narrative language skills include the ability to organize information in a logical sequence, as well as connect that information using appropriate complex grammatical structures. Students can develop narrative language skills before and while they master basic text-reading skills.

Students need to learn complex grammatical structures and the specific elements of narrative language that are used to describe experiences or events. Example 1.4 presents several complex grammatical structures that the panel recommends teaching to students in kindergarten through 3rd grade. Teachers are encouraged to identify and teach additional complex grammatical structures if students are ready. The specific elements of narrative language include components of story grammar (characters, setting, plot, etc.) and components of linguistic structure (shown in Example 1.5). Along with complex grammatical

Example 1.4. Complex grammatical structures

Structure	Description	Example
Compound sentence	two complete, related thoughts, joined by a coordinating conjunction	***My favorite food is pizza, and my favorite pizza topping is pepperoni.***
Subordinate clause	a clause, beginning with a subordinating conjunction, that supplements an independent clause and cannot stand on its own	*We'll use the computers **when we finish the science project**.*
Adverbial clause	a subordinate clause that modifies a verb, adjective, or adverb	*I ran **as fast as I could**.*
Prepositional phrase	a phrase beginning with a preposition to demonstrate a relationship such as location or manner	*My pencil is **under the table**.*

Example 1.5. Elements of linguistic structure

Element	Description	Examples
Connectives	using conjunctions, adverbs, and other devices to create connections between parts of a narrative	***because**, **but then**, **later**, **instead**, **suddenly***
Noun phrases	using noun phrases (e.g., article + adjective + noun) for precise descriptions	***My brother's friend** ate **all the chocolate-chip cookies**!*
Verb phrases	inflecting verbs to denote the timing of events	*She **ran** to school. She **will ride** the bus home.*
Pronoun references	providing clear references to pronouns	***Tommy** was sick, so **his** mom made soup with **her** brand-new pot.*

structures, elements of linguistic structure and elements of story grammar contribute to both oral and reading comprehension. They are common deficits among K-3 students with below-average oral language abilities, but are not frequently addressed explicitly in early reading instruction.

Teach beginning readers complex grammatical structures and key elements of narrative language during whole-class or small-group lessons.[28] Introduce students to each new element or structure, model how to use the element to connect and expand ideas, and then provide continued opportunities for students to practice using the new elements. Support students' use by **scaffolding** their responses.[29] Initially, teachers might need

to prompt students to use a given narrative language structure and provide additional modeling. As students become more comfortable with the given element, they will require fewer prompts and modeling and will begin using the narrative structures or elements independently. Some elements and structures will present more challenges to students than others.

Engage students in the use of narrative language through activities that ask them to predict or summarize a story or factual information, or develop detailed descriptions.[30] For example, teachers can have students

- predict actions in the text based on the title and/or images if they have sufficient prior knowledge of the story context[31]

- discuss their earlier predictions and why they did or did not come true

- describe the scene in a picture in increasing detail or describe a scene for a partner to illustrate

- explain how to do something they enjoy, like shooting hoops

- identify when a given element is used in read-alouds

- summarize stories or factual information using a graphic organizer[32]

- summarize or relate the main idea, events, or other specific details of a passage[33]

When providing instruction in the elements of story grammar, the panel recommends first explaining how to organize a good summary and then providing scaffolding as students begin the activity. Initially, prompt students to include each element of the story in their summaries and to connect them appropriately. Gradually reduce prompts for specific story elements, and instead prompt students to draw on their knowledge of how to produce a summary. Finally, only prompt students if they omit important information from the summary.[34]

Have students complete these activities in small groups or pairs.[35] For example, students can form pairs in which one student summarizes a story and the other amends the summary with any missing story elements. Challenge students to present logically ordered predictions, to explain why they are making any predictions, and to include as many of the important components of the story as possible. The panel encourages teachers to have students connect their responses to events in the story in a logical manner to practice as many narrative and linguistic structures as possible to develop their narrative language skills.

The *Improving Reading Comprehension in Kindergarten Through 3rd Grade* practice guide provides additional information on how to teach text structure in both narrative and informational texts.[36]

3. Teach academic vocabulary in the context of other reading activities.

Academic vocabulary consists of words that are common in writing and other formal settings and that students need to learn to understand written text. They include words that frequently appear in instructions for assignments and activities across subject areas, such as *listen*, *group*, *locate*, *define*, *select*, *contrast*, *estimate*, and *concentrate*. Academic vocabulary can also include syntax (grammatical rules) uncommon in speech, such as the phrase *away they went*.

Introduce students to academic vocabulary that is relevant in many subject areas, including words or grammatical rules that support content that students are reading or learning.[37] The panel suggests that schools or grade-level teams develop a common set of vocabulary words that align with reading selections and curriculum standards for the year. Appropriate words are those that will occur frequently throughout the school year and in a variety of contexts and are likely unfamiliar to most students.[38] The common set of words can draw on lists of academic vocabulary and common root words.[39]

Each week, select a small group of words or grammatical rules to teach that are included in texts that students will hear or read.[40] The number of words or rules should depend on their complexity and student needs. Teach these words, phrases, and grammatical rules explicitly. When introducing a new word or phrase, provide a clear and concise definition that primary-grade students will understand, and then give an example of meaningful, supportive sentences that include the word.[41]

Alternatively, read the sentence with the new vocabulary word, and then replace the word in the sentence with its definition.[42] See Example 1.6 for an illustration of these activities.

After introducing students to new words, encourage deeper understanding by providing extended opportunities for them to use and discuss the words.[43] Activities that support deeper understanding allow students to

- make connections between a new vocabulary word and other known words

- relate the word to their own experiences

- differentiate between correct and incorrect uses of the word

- generate and answer questions that include the word[44]

Finally, ensure that students encounter new academic vocabulary words or phrases in many different contexts throughout the day and year.[45] Expose students to these words during read-alouds and classroom discussions in language-arts instruction as well as in other contexts, such as science experiments and math word problems.[46] Review new vocabulary words regularly, incorporate them into conversations and writing assignments, and draw attention to the words when they appear in text.

Example 1.6. Academic vocabulary instruction

Before reading, a 2nd-grade teacher selects academic vocabulary, including the word *investigate*, from a biography of Marie Curie that will be read aloud to students. The teacher develops a student-friendly definition.

Investigate: to try to find out the truth about something

The teacher reads, "Marie Curie decided to investigate the energy that came from a certain kind of rock called uranium."

The teacher then follows up by saying, "*Investigate* means 'to try to find out the truth about something.' So, Marie Curie decided to find out the truth about the energy that came from a certain kind of rock called uranium. She wanted to *investigate* this energy. Is there anything that you would like to *investigate*?"

After reading the text, the teacher talks about other things that scientists investigate and then asks students to relate the word to their own experiences by recording what they would like to investigate. Student responses are recorded in a graphic organizer titled "Things We Want to Investigate." The teacher encourages the students to use the word *investigate* in their answers.

Throughout the year, the teacher makes a point to continue using the word *investigate* in different contexts, for example, "Today in math we are going to *investigate* how to share things so that everyone has the same amount." The teacher also supports students in using the word *investigate*, for example, "It sounds like you are interested in finding out about dinosaurs. Can you use our new word *investigate* to talk about that?" The teacher corrects any incorrect uses of the word.

Potential obstacles to implementing Recommendation 1 and the panel's advice

Obstacle 1.1. *Students enter my classroom with a range of oral language skills, and some may not be ready to participate in academic language activities.*

Panel's Advice. Students with weaker oral language skills may be reluctant to participate in whole-class discussions, so differentiate instruction to support the oral language development of each student. For example, teachers can integrate academic language activities into small-group reading instruction, where they can more easily tailor instruction to students' particular needs. All students need to develop academic language skills and will benefit from a rich exposure to language.

Obstacle 1.2. *There is not enough time for language instruction.*

Panel's Advice. Teachers do not need to dedicate a block of time specifically to language instruction. Instead, the panel recommends integrating language instruction with other literacy instruction as part of the reading block. For example, teachers can build inferential and narrative discussions around already-scheduled read-aloud time. Teachers can also integrate language instruction into other content areas by using texts in science and social studies to foster rich discussions using inferential language and academic vocabulary.

Develop awareness of the segments of sound in speech and how they link to letters.

*The National Reading Panel (NRP) report found that teaching students to recognize and manipulate the **segments of sound** in words (also referred to as **phonological awareness**) and to link those sounds to*

Implementation Timeline

Grade K	Grade 1	Grade 2	Grade 3
Recommendation 2			

*letters is necessary to prepare them to read words and comprehend text.[47] Recent evidence reviewed for this guide supports the NRP's conclusion. The ability to isolate sounds and then link those sounds to letters will help students read about 70 percent of regular monosyllabic words, such as fish, sun, and eat.[48] The system for linking sounds to letters is referred to as the **alphabetic principle**.*

*To effectively decode (convert from print to speech) and **encode** (convert from speech to print) words, students must be able to[49]*

- *identify the individual sounds, or **phonemes**, that make up the words they hear in speech*
- *name the letters of the alphabet as they appear in print*
- *identify each letter's corresponding sound(s)*

*Teachers should begin the instruction described in this recommendation as soon as possible. These activities support students in breaking down the sounds within spoken language and then mapping individual sounds to printed letters. Once students know a few consonant and vowel sounds and their corresponding letters, they can start to sound out and **blend** those letters into simple words. The process of combining letters into simple words, common spelling patterns, and increasingly complex words is described in Recommendation 3.*

Summary of evidence: Strong Evidence

Seventeen studies that examined interventions to help students develop awareness of segments of sound and letter–sound correspondence meet WWC group design standards and include a relevant outcome (see Appendix D).[50] All 17 studies found positive effects in letter names and sounds and/or **phonology** outcomes: 12 studies found positive impacts on phonology outcomes,[51] and nine studies found positive impacts on letter names and sounds outcomes.[52] Eight of the studies examined interventions implementing all three components of the recommendation,[53] with most of the other studies including two recommendation components. Twelve of the studies meet WWC group design standards

without reservations.[54] The studies included diverse American students in the relevant grades—kindergarten and 1st grade; six studies included students at risk for reading difficulties,[55] while 11 studies included readers at all levels.[56] Twelve of the studies implemented the interventions with groups of two to eight students[57] and supplemented regular literacy instruction. The studies typically compared students receiving the intervention to students receiving regular classroom instruction. Overall, the body of evidence consistently indicated that the practices outlined in this recommendation had positive impacts on students' knowledge of letter names and sounds and phonology. Therefore, the panel and staff assigned a *strong* level of evidence to Recommendation 2.

How to carry out the recommendation

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1. Teach students to recognize and manipulate segments of sound in speech.

Teach students how to recognize that words are made up of individual sound units (phonological awareness).[58] Begin by introducing students to larger segments of speech (words) with which they will be more familiar, and gradually draw their attention to smaller and smaller sound segments. This will prepare them to learn about the individual sounds that letters represent (the second component of this recommendation describes how to carry this out) and then recognize those sounds and letters as they are used in words (see the third component of this recommendation).

The panel recommends first demonstrating that sentences can be broken into words and then that some words can be broken into smaller words. Have students practice identifying the unique words in sentences or compound words, as in Example 2.1.

Next, demonstrate how words can be broken into **syllables**.[59] Many students will start breaking down spoken sentences and words into syllables in preschool; others will need this instruction at the beginning of

kindergarten. Tell students what syllables are, and model how to identify them. Then have students practice identifying and manipulating syllables within familiar words by

- placing their hands on their chin and paying attention to the number of times their chin moves down as they say words slowly[60]

- holding up a finger for each syllable as they say a word[61]

- blending syllables articulated by the teacher into a word[62]

Once students can break words into syllables, teach them to recognize even smaller units within a syllable, called **onsets** and **rimes**.[63]

> Throughout the guide, /_/ is used to denote a particular sound. For example, "/c/" and "/ool/" indicate first the sound made by the *c* in the word *cool*, and then the sound made by the remaining letters.

Example 2.1. Sample activities to identify words

Identifying words in sentences[64]

Teacher: We talked about how you can combine multiple words to form a sentence. I'm going to say a sentence, and I want you to count the number of *words* in that sentence. Ready?

Students: Yes!

Teacher: The boy ate two pieces of pizza.

Student: Six?

Teacher: Close. Listen one more time. The boy ate two pieces of pizza.

Student: Seven!

Teacher: Correct! There are seven words in that sentence.

Building and dividing compound words[65]

Teacher: Sometimes you can put two words together to form another word. For example, if I put *straw* and *berry* together, I get *strawberry*. What do you get if you put *book* and *shelf* together?

Student: *Bookshelf.*

Teacher: That's right! You can also break some words into smaller words. What do you get if you take the *cow* out of *cowboy*?

Student: *Boy*?

Teacher: That's right!

An onset is the initial consonant, **consonant blend**, or **digraph** in a syllable (e.g., the /c/ in *cool*). The rime is the vowel and the remaining phonemes in that syllable (e.g., the /ool/ in *cool*). Focus students' attention on recognizing and manipulating the onsets and rimes by having students segment familiar one-syllable words into their onsets and rimes and manipulate the onsets or rimes to create new words.[66] Teachers can draw from a number of activities that have students practice identifying onsets and rimes. Example 2.2 illustrates some of these exercises.

Finally, teach students to isolate and manipulate individual phonemes, the smallest units of sound in a word.[67] Begin **phonemic-awareness** instruction by demonstrating how to isolate individual sounds in words and segment words into their component sounds with modeling and guided practice.[68] For initial lessons, use two- or three-phoneme words such as *dig*, *sun*, and *at*.[69]

Students can practice isolating the sounds in words by using **Elkonin sound boxes** and by sorting pictures. Students can use Elkonin boxes and colored discs or letter tiles to mark the unique sounds they hear in words (see Example 2.3).[70] Additionally, students can sort cards with pictures based on the beginning, middle, or ending sounds of the word each picture represents.[71]

Example 2.2. Sample activities for onset–rime awareness[72]

Day One: Assembling Words

Teacher: I'm going to say two parts of a word. Listen carefully. What word do you get when you put these two parts together: /c/ and /ool/?

Students: *Cool*.

Teacher: Very good!

Day Two: Rhyming

Teacher: (after explaining what a rhyme is) What word rhymes with *can*?

Students: *Man*.

Teacher: Good! Does *can* rhyme with *tan*?

Students: Yes.

Teacher: Correct! Does *can* rhyme with *hat*?

Students: No.

Teacher: Right! Which of these other words also rhyme with *can*? *Ban*, *cat*, *fan*, *plan*.

Students: *Ban*, *fan*, and *plan*.

Teacher: Exactly!

Day Three: Onset Matching

Teacher: I have pictures of four animals. What type of animal is this? (revealing an image of a duck)

Students: Duck.

Teacher: Right! What sound does this animal's name start with?

Students: /d/

Teacher: What is this animal's name? (revealing an image of a dog)

Students: Dog.

Teacher: Does this animal's name start with the same sound as *duck*?

Students: Yes!

Teacher: Good. What is this animal called? (revealing an image of a sheep)

Students: Sheep.

Teacher: Does this animal start with the same sound as *duck*?

Students: No.

Teacher: Correct! What sound does this start with?

Students: /sh/

Teacher: Right! Now how about this final animal: what is this animal's name? (revealing an image of a donkey)

Students: Donkey.

Teacher: Correct! Does it start with the same sound as *duck*?

Students: Yes!

**Teacher:** That's correct! *Duck*, *dog*, and *donkey* all begin with /d/. *Sheep* does not begin with /d/.

Example 2.3. Phonemic awareness using Elkonin sound boxes

Have students use sound boxes to mark the phonemes in selected two- or three-phoneme words. Provide each student with a set of boxes matching the number of phonemes in the selected word. Place either a colored disc or letter tile over each box, depending on their familiarity with printed letters. Tell students the first word. Have students repeat the word slowly, pulling one disc or letter tile down into the box for each unique sound that they say. Then, have students run their finger under the boxes from left to right as they blend the individual sounds together and say the word.

If students are using colored discs, try to select words (e.g., *fan*) featuring consonants that are produced by creating a continuous flow of sound (i.e., *f, h, l, m, n, r, s, v, z*). Words featuring **continuous sounds** are easier for students to elongate as they identify the unique sounds. The panel recommends using words with continuous sounds initially, until students are able to recognize the unique sounds in a word.

If students use letter tiles, select words that contain letter sounds students have already learned so that they will be successful in mapping the printed letter tiles to the sounds in the word used in the activity. Additionally, if students struggle to distinguish sounds, draw attention to specific sounds by presenting students with words that differ by only one phoneme, such as *dog* and *dig*.

Once students have learned to connect several sounds to print, repeat this exercise, having them write the corresponding letters in the boxes, rather than pulling down discs or letter tiles.
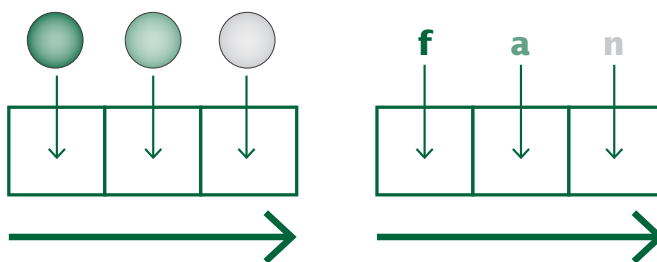
2. Teach students letter–sound relations.

Once students have learned to isolate phonemes in speech, teach students each letter of the alphabet and their corresponding sounds, working with a few phonemes at a time.[73] Many students enter kindergarten knowing the names of a few letters they have learned at home or in preschool, such as the letters in their name. The panel recommends building upon this foundation by reinforcing familiar letters and introducing new ones.
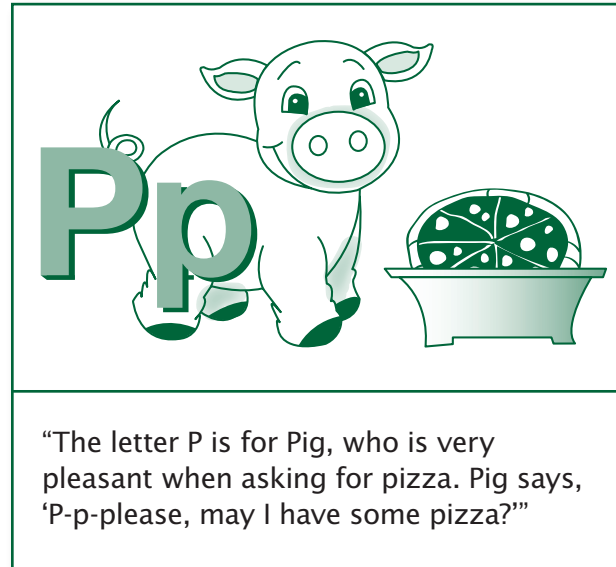
Present consonants and **short vowel** sounds represented by single letters first, since these appear frequently in words students will encounter in the early stages of reading. For example, the first group of phonemes taught could be /s/, /m/, /d/, /p/, /a/.[74]

The panel recommends next introducing consonant blends (e.g., *fl, sm, st*) and common two-letter consonant digraphs (e.g., *sh, th, ch*). Rather than asking students to memorize consonant blends as units, the panel recommends teaching each sound in a blend and then asking students to blend the sounds together. A digraph makes a single sound and must be taught as a unit. Then teach **long vowels** with **silent *e***, and finally two-letter vowel teams (vowel digraphs, e.g., *ea* and *ou*). Letters or letter combinations may correspond to multiple sounds; start with the most common sound each letter represents, and introduce each letter sound one at a time.

For each phoneme, begin by naming the letter or letters that represent the phoneme (e.g., *p* for /p/ or *s* and *h* for /sh/). Introduce the letters in both uppercase and lowercase.[75] Then, show a memorable picture of a familiar, regular word containing that phoneme (e.g., *pig*).[76] For each picture, the panel recommends telling the students a story that incorporates the corresponding sound of the letter, so that students remember the character and the sound when they see the letter in print (see Example 2.4). Say the sound that the phoneme makes in isolation, and have the students repeat that sound.

Finally, ensure that students have continued practice with the phoneme. Review the new letter sound together with a small group of previously learned letter sounds, and have students write the letters in meaningful contexts, such as writing their name or familiar words containing the letters, such as *mad* and *sad*.[77]

Example 2.4. Sample memorable picture and letter of the alphabet

"The letter P is for Pig, who is very pleasant when asking for pizza. Pig says, 'P-p-please, may I have some pizza?'"

3. Use word-building and other activities to link students' knowledge of letter–sound relationships with phonemic awareness.

The final step in teaching students the alphabetic principle is connecting their awareness of how words are segmented into sounds with their knowledge of different letter–sound relationships.[78] This allows students to begin spelling and decoding words. Teachers can use Elkonin sound boxes with letter tiles and word-building activities for this instruction as soon as students have learned their first few letter sounds.

Use word-building exercises to enhance students' awareness of how words are composed and how each letter or phoneme in a word contributes to its spelling and pronunciation.[79] For example, provide students with a set of letter tiles or magnetic letters, and have them add or remove letters to create words or to change one word into a different word. Begin by modeling the activity and working through a few examples with students as a group. Then, have students work independently to add single missing letters to build CVC (consonant-vowel-consonant) words first (e.g., adding *a* between *f* and *n* to create *fan*). Finally, engage students in advanced word-building activities that combine sound addition and sound substitution, as shown in Example 2.5.

Gradually include more advanced words in the activity as students become familiar with more advanced phonemic patterns, such as CVC words with a silent *e* (CVC*e*) or with two consonants for the initial or final sounds (CCVC and CVCC, respectively). For example, teachers can extend Example 2.5 to include instructions to make *cane* after *can*, *cart* after *cat*, or *flat* after *fat*.

Example 2.5. Advanced word-building

Provide students with letter tiles *f*, *a*, *t*, *c*, and *n*. Have them make the word *fat*, and then ask them to make other words by adding, moving, or replacing one letter tile at a time.

| f | a | t | c | n |

Teacher: Take the *f*, *a*, and *t* tiles and put them together so that the *f* is first, the *a* is in the middle, and the *t* is last. Does anyone know what the word is?

| f | a | t |

Student: *Fat.*

Teacher: Now, change a letter to make it say *fan*.

| f | a | n | ~~t~~

Teacher: Next, change a letter to make it say *can*.

| c | a | n | ~~f~~

Teacher: Now, make it say *cat*.

| c | a | t | ~~n~~

Teacher: Finally, make it say *fat* again.

| f | a | t | ~~c~~

Potential obstacles to implementing Recommendation 2 and the panel's advice

Obstacle 2.1. *Many students mix up letter shapes and sounds.*

Panel's Advice. Letter reversals (when students confuse the shape or sound of one letter for a different letter, such as confusing *d* for *b*) are common among children in the early grades. Focus on one letter at a time, teaching the first letter shape (e.g., *b*) in a variety of ways until the student can identify it instantly. Then, teach the student another letter or two, reviewing and reinforcing the first letter a bit longer. Finally, focus on the other letter (e.g. *d*) exclusively. After that, introduce both letters in different words to make sure students are recognizing each independently. For some children, particularly older students, continued problems with letter reversals can suggest disabilities or other reading challenges that require additional attention. If children continue to struggle with letter reversals, the panel recommends introducing a handwriting program. Handwriting programs focus students' attention and hand-eye coordination on the letter shape. See Recommendation 3 of the *Teaching Elementary School Students to Be Effective Writers* guide for more information about handwriting instruction.

Obstacle 2.2. *Some students have persistent problems with phonological awareness.*

Panel's Advice. Students who struggle persistently with phonological awareness often benefit from one-on-one or small-group intervention to help them isolate sounds in speech and link the sounds to letters. Early intervention can often remedy this phonological core deficit that otherwise may lead to deficiencies in single word decoding, which is a hallmark of reading disabilities or dyslexia.

Teach students to decode words, analyze word parts, and write and recognize words.

Once students know a few consonants and vowels, they can begin to apply their letter–sound knowledge to decode and read words in isolation or in connected text.[80] Students also need to learn how to break down and read

Implementation Timeline

Grade K	Grade 1	Grade 2	Grade 3
Recommendation 3			

*complex words by segmenting the words into pronounceable word parts. To do this, students must understand **morphology**, or the knowledge of the meaningful word parts in the language. Learning to recognize letter patterns and word parts, and understanding that sounds relate to letters in predictable and unpredictable ways, will help students decode and read increasingly complex words. It will also help them to read with greater fluency, accuracy, and comprehension.*

The more words students read and the more they learn sound–spelling patterns (groups of letters that represent a single sound, such as ph*) and word parts (letters or combinations of letters that appear in multiple words and hold a specific meaning, such as* -ing*), the more they will be able to recognize words in both familiar and unfamiliar contexts. Similarly, helping students to immediately recognize high-frequency words facilitates more fluent reading.[81] Increasing the ease of word recognition allows students to focus more on word meaning when they read, ultimately supporting reading comprehension.*

Teaching students to decode and recognize words and word parts was one of the effective instructional techniques identified by the National Reading Panel (NRP).[82] Recent compelling evidence reviewed for this practice guide supports the NRP's conclusions.

Summary of evidence: Strong Evidence

Eighteen studies that examined the effects of teaching students to decode words, analyze word parts, and write words meet WWC group design standards and include a relevant outcome (see Appendix D).[83] In total, 13 studies had positive effects on word reading and/or encoding outcomes:[84] 11 of these studies had positive impacts on word reading outcomes,[85] and four of these studies had positive impacts on encoding outcomes.[86] No study that meets WWC group design standards examined morphology outcomes.

The 13 studies that found positive effects contributed to the strong level of evidence.[87] Six of these studies examined interventions that aligned with five or six of the six components of Recommendation 3,[88] and an additional three studies were relevant to three or four of the components.[89] Seven of the studies meet WWC group design standards without reservations.[90] The studies included diverse student samples from kindergarten through 3rd grade; eight studies examined students at risk for reading difficulties,[91] and the other five studies included students of all ability levels.[92] Eight interventions were implemented in small groups of students,[93] four additional interventions examined one-on-one interventions,[94] and one intervention was implemented with the whole class.[95] About half of the studies implemented the interventions as supplements to regular literacy instruction, and all of the studies took place in schools. Overall, the body of evidence consistently indicated that the practices outlined in Recommendation 3 had positive effects on word reading and encoding outcomes for diverse students. Therefore, the panel and staff assigned a *strong* level of evidence to Recommendation 3.

How to carry out the recommendation

1. Teach students to blend letter sounds and sound–spelling patterns from left to right within a word to produce a recognizable pronunciation.

Teach students how to read a word systematically from left to right by combining each successive letter or combination of letters into one sound.[96] This is called **blending**. Start with simple consonant-vowel-consonant (CVC) words that are familiar to students. Demonstrate how to blend, and provide feedback as students begin to apply it independently.[97] Then, as students show progress in learning the skill, gradually progress to longer words and words that are new to the students.

Teachers can instruct students to blend either by **chunking** sounds or by **sounding out** each letter individually and then saying the sounds again quickly.

In the chunking approach, students combine the first and second letter sounds and letter–sound combinations (multiple letters producing one sound) and practice them as one chunk before adding the next sound to form

Blending is the process of reading a word systematically from left to right by combining each successive letter or combination of letters into one sound.

Chunking is a type of blending in which students read the sounds from left to right but add each sound to the previous sound before going on to the next sound in the word.

Sounding out a word is a type of blending that involves saying the sound of each letter or letter combination one by one until the end of the word, and then saying them all together again quickly.

another chunk. Students add each successive sound to the chunk they created just before it to build the complete word, as in Example 3.1.

Example 3.1. Blending *hat* by chunking and sounding out

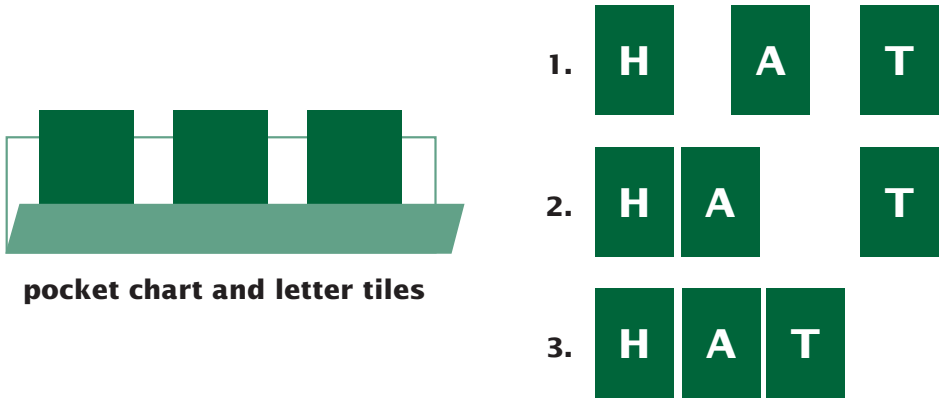| Chunking	Sounding Out
Teacher: How does this word start?	**Teacher:** How does this word start?
Student: /h/	**Student:** /h/
Teacher: Then what's the next sound?	**Teacher:** Then what's the next sound?
Student: /a/	**Student:** /a/
Teacher: What sound do you get when you put those two together?	**Teacher:** And then what sound comes next?
Student: /ha/	**Student:** /t/
Teacher: And then what sound comes next?	**Teacher:** What happens when you put them together?
Student: /t/	**Student:** /h/ /a/ /t/
Teacher: What happens when you add /ha/ and /t/?	**Teacher:** What is the word?
Student: *Hat*!	**Student:** *Hat*!

For the sounding-out approach to blending, demonstrate how to say each letter sound in a word, starting at the leftmost letter and moving right, and then join all the sounds together to form the word.[98] Teach students to "sound out smoothly," elongating and connecting the sounds as much as possible (e.g., /mmmaaannn/ rather than /m/.../a/.../n/). This will help students remember and combine the sounds to arrive at the correct word.

Another way to demonstrate chunking or sounding out is to use a pocket chart with letter tiles (see Example 3.2), magnetic letters, or an Elkonin sound box.[99] Space the letters out initially, and then move the tiles together as you read the word. Students can follow along with tiles on their desks.

Listen for students who add a strong schwa sound (/ə/, or "uh") after **stop sounds** (e.g., /b/ pronounced as *buh*). This may affect students' ability to blend sounds into recognizable words. Encourage them to minimize the schwa sound for sounds that require a brief vowel sound (e.g., voiced consonants

Example 3.2. Blending by chunking with a pocket chart and letter tiles

pocket chart and letter tiles

1. H A T
2. H A T
3. H A T

such as /b/ and /d/) and to eliminate the schwa sound for other consonants, to make it easier to recognize a word as they blend the sounds together.

The panel recommends teaching students to check their pronunciation by asking themselves if the word they produced by blending the letter sounds is familiar to them (i.e., if it "makes sense" or if it is a "real word"). If the word is not familiar to them, ask them to read the word again to make sure they blended correctly (see Recommendation 4 for more detail on self-monitoring).

2. Instruct students in common sound–spelling patterns.

Demonstrate to students how letters are often combined to form unique sounds that appear in multiple words (e.g., -ng; see Example 3.3 for a list of types of sound–spelling patterns).[100] Present letter combinations to students one at a time, with ample time to focus on each combination and its pronunciation, and with plenty of examples from familiar words to illustrate the pronunciation. Begin with initial consonant patterns, and as students advance, introduce

Example 3.3. Consonant, vowel, and syllable-construction patterns[101]

Category	Pattern	Examples
Consonant patterns	**Consonant digraphs** and **trigraphs** (multi-letter combinations that stand for one phoneme)	*th, sh, ch, ph, ng* *tch, dge*
	Blends (two or more consecutive consonants that retain their individual sounds)	*scr, st, cl, ft*
	Silent-letter combinations (two letters; one represents the phoneme, and the other is not pronounced)	*kn, wr, gn, rh, mb*
Vowel patterns	**Vowel teams** (a combination of two, three, or four letters standing for a single vowel sound)	*ea, oo, oa, igh, eigh*
	Vowel diphthongs (complex speech sounds or glides that begin with one vowel and gradually change to another vowel within the same syllable)	*oi, ou*
	R-controlled vowels or **bossy r's** (vowels making a unique sound when followed by *r*)	*ar, er, ir, or, ur*
	Long *e*	*ee, ie, ea, e_e, ey, ei, y, ea*
	Long *a*	*a_e, ai, ay, a_y, ei, ea, ey*
Syllable-construction patterns	**Closed syllables** (a short vowel spelled with a single vowel letter and ending in one or more consonants)	*in-sect* *stu-dent*
	VC*e* (a long vowel spelled with one vowel + one consonant + silent *e*)	*com-pete* *base-ball*
	Open syllables (ending with a long vowel sound, spelled with a single vowel letter)	*pro-gram* *tor-na-do*
	Vowel team (multiple letters spelling the vowel)	*train-er* *neigh-bor-hood*
	Vowel-*r* (vowel pronunciation changing before /r/)	*char-ter* *cir-cus*
	Consonant-*le* (unaccented final syllable containing a consonant before *l* followed by a silent *e*)	*drib-ble* *puz-zle*

vowel patterns and syllable-construction patterns.[102] Learning to recognize these patterns in words enables students to identify more complex words by pronouncing smaller parts of the word as they read.

Teachers can use the following activities to introduce and practice sound–spelling patterns:[103]

- Give students word cards with and without the target pattern, and ask them to sort the cards into groups or sort them on a **word wall** in the classroom.

- Ask students to think of words that use a given spelling pattern and pronunciation.

If these words are at the students' reading level, ask students to try writing them. Writing practice will extend students' familiarity with each pattern and help them internalize the different spelling patterns.

- Use Elkonin sound boxes to build words with specific sound–spelling patterns (see Example 3.4). Each distinct and recognizable sound should have its own sound box; consonant digraphs and other letter combinations that produce one sound should have one box for the group of letters. For silent-*e* words, place the *e* outside the set of boxes.

Example 3.4. Building words with Elkonin sound boxes

Select a series of words that demonstrate a recently taught sound–spelling pattern. Provide students with a worksheet of sound boxes where each sound–spelling pattern has its own box. Silent *e*'s should be placed outside the series of boxes, as they do not contribute to a sound corresponding to their placement within the word. Either have students write the words in the boxes as you say them, or provide them with a collection of letter tiles that includes all the letters and spelling patterns needed to create the words. Say the words one at a time, and have students create the words by writing letters or moving letter tiles into the appropriate boxes.

Students write in boxes
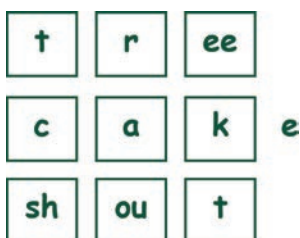
Students move letter tiles into boxes

3. Teach students to recognize common word parts.

Once students have learned a few common spelling patterns, show them how to analyze words by isolating and identifying meaningful word parts within them that share a similar meaning or use.[104] Breaking down words into smaller, meaningful word parts can enable young readers to effectively read more challenging words. Students can also use their knowledge of the meaning of different word parts to infer meaning for a **multisyllabic word**.

Teach students about **suffixes** (e.g., -s, -ed, -ing, -est), **contractions** (e.g., aren't, it's, you're), forms of **prefixes** (e.g., dis-, mis-, pre-), and basic **roots** (e.g., aqua, cent, uni), and how to combine them to create words. Have students practice the new word parts by writing words or manipulating parts of the words to create new words (e.g. adding the suffix -ing to the words park, call, and sing), and then read the words aloud.[105] The panel also recommends having students practice building and modifying words by adding prefixes and suffixes to words in an exercise that expands on the earlier work with Elkonin sound boxes (see Example 3.5).

Help students decode more complex words by teaching a word-analysis strategy: identify the word parts and vowels, say the different parts of the word, and repeat the full sentence in which the word appears (as illustrated in Example 3.6).[106] Model the word-analysis strategy by using words that students have recently encountered in text, and mark individual word parts on the board.

Example 3.5. Manipulating word parts

Select a series of words that demonstrate a recently taught suffix, prefix, or root. Provide students with a worksheet of roots to which students can add prefixes and suffixes. Have students write the words in and around the boxes as you say them. Say the words one at a time, and have students create the words.
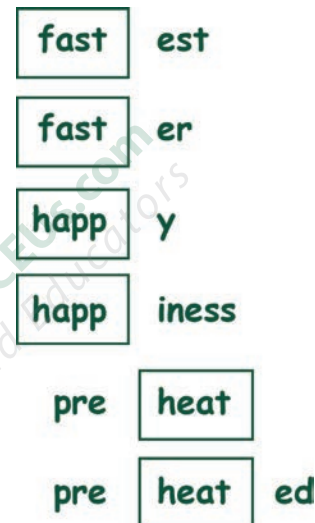
Example 3.6. Word-analysis strategy[107]

1. Circle recognizable word parts. Look for prefixes at the beginning, suffixes at the end, and other familiar word parts.	(re)(vis)it(ing), (un)happ(i)ness
2. Underline the other vowels.	(re)(vis)it(ing), (un)happ(i)ness
3. Say the different parts of the word.	re-vis-it-ing, un-happ-i-ness
4. Say them again fast to make it a real word.	revisiting, unhappiness
5. Make sure the word makes sense in the sentence.	

When students read the word, have them adjust the vowel sounds as needed to achieve a recognizable word when said at speed. For example, they may need to pronounce vowels with the schwa sound that usually sounds like a short u or sometimes a short i (e.g., the o in harmony). As students apply the steps independently, post instructions on the classroom wall or provide students with written instructions to use as a reference.

4. Have students read decodable words in isolation and in text.

Provide students with opportunities to practice the letter sounds and sound–spelling patterns taught in the classroom using word lists, decodable sentences, short decodable texts, or texts that contain many examples of words spelled with recently learned letter sounds or sound–spelling patterns.[108]

Give each student a copy of a word list and/or connected text passage for the letter combination being taught, or write or display the words and passage on a board for the whole group to read together. Ask students to underline the letter combination in each word in the word list, and then in the appropriate words in the passage. Example 3.7 shows a sample word list and a short passage of connected text that a teacher could use with students who have recently learned the letter combination *oi* (a **diphthong**).

Example 3.7. Sample word list and connected text for a lesson on *oi*

Word list

soil	join	oink
voice	noise	choice
coin	foil	avoid

Connected text passage

Sam went out to buy foil from the store. He lost his coins on the way. He looked for his coins, but he could not see them.

Sam asked Luis to join him and help look for the coins. They could not find them.

Then, Sam and Luis heard a voice. It was Mia. She found Sam's coins! Sam, Luis, and Mia went to the store together to buy the foil.

5. Teach regular and irregular high-frequency words so that students can recognize them efficiently.

Help students learn to quickly recognize words that appear frequently in all kinds of text, known as high-frequency words. Because these words occur so often in text, learning to recognize them quickly will speed up the reading process so that students can focus more on the meaning of the text.

Teach students high-frequency words with irregular and regular spellings (see Example 3.8).[109] **Irregular words** have exceptions to the typical sound–spelling patterns and are not easy for early readers to decode. Teach these words **holistically**—that is, as whole words, rather than as combinations of sound units.[110] For regular words, have students apply their letter–sound skills—for example, using Elkonin sound boxes—to identify the word initially. Have students practice reading the words frequently until they learn to recognize them quickly.[111]

Example 3.8. High-frequency words

Irregular words		Regular words	
the	*there*	*in*	*did*
was	*want*	*and*	*then*
from	*said*	*had*	*with*
have	*friend*	*that*	*down*
of		*him*	

Teachers can use the following activities to teach and provide practice on high-frequency words:

- Use flashcards to directly teach any new words. Show students a word and pronounce it. Have students repeat the word, spell the word, and then say the whole word again. Then mix up the cards and provide practice so students learn to recognize the words quickly.

- Select a small number of high-frequency words that students have just encountered in a text. Read a word aloud, and then ask a student to point to the word in the text, spell the word, and repeat the word aloud.[112]

- Create a word wall of high-frequency words in the classroom. Have students read the word wall with a partner. Refer to the wall often, and ask students to point out a word on the wall when they come across it.

- Present students with a list of new high-frequency words to learn. Teach each word. Then ask students to write the words on large cards or construction paper, with different students writing different words. Have them add the words to the word wall in the classroom.

- Write the words on flashcards and have students practice them in small groups, as in Example 3.9.

- Have students practice their high-frequency words outside of their regular literacy instruction, as in Example 3.10.

Example 3.9. High-frequency word practice with flashcards

1. Create flashcards for a small number of words students have been introduced to recently; include both words that students are beginning to recognize and words they still struggle with.

2. Present the flashcards, and ask students in small groups to take turns identifying words correctly within 3 seconds.

3. If students do not correctly read a word within 3 seconds, tell them the word and place the word on a "teacher pile." If students do correctly identify the word within the time period, place it on a "student pile."

4. Repeat steps 2 and 3, decreasing the allotted time to 2 seconds, then 1 second, then asking students to identify the words immediately.

5. At the end of the activity, reteach and provide practice in all the words in the "teacher pile."

Example 3.10. The "Star Words" activity

1. For each student, the teacher puts three to five high-frequency words on individual cards and connects the cards with a ring.

2. Throughout the week, other adults (aides, other teachers, or parents) ask the student to read the words on the ring.

3. For each word the student reads correctly, the adult puts a star on the card.

4. When the student receives three stars on each card, more high-frequency words can be added to the ring.

6. Introduce non-decodable words that are essential to the meaning of the text as whole words.

Non-decodable words are comprised of irregular sound–spelling patterns or sound–spelling patterns that students have not yet learned. Books may include complex words that contain sound–spelling patterns that students have not learned, but that are important to the story or information (e.g., *Tyrannosaurus rex*, *pigeon*, and *villain*). Before introducing a new text, determine if it includes any non-decodable words and, if so, identify a few that are repeated often within the text, are meaningful, and that students will encounter in future texts or settings.[113] Introduce these non-decodable words to students in advance of reading the new text, including their spelling and meaning. Teaching non-decodable words expands students' reading opportunities beyond decodable texts. The panel recommends limiting the number of these words introduced at a time, because learning them holistically places considerable demands on students' memory.

Potential obstacles to implementing Recommendation 3 and the panel's advice

Obstacle 3.1. *My students often invent spellings for words when I am not able to respond to their questions immediately. Should I discourage this habit?*

Panel's Advice. When students, particularly kindergartners and 1st-graders, are writing independently, encourage them to try to spell words on their own, even if they might spell the word incorrectly. This provides them with an important opportunity to practice applying their letter–sound knowledge. As they develop spelling and language skills, students should use invented spelling less frequently. Remind students to use their knowledge of sound–spelling patterns to inform their spelling and writing. Encourage students to review how they spelled words to see if the spelling is logical and looks correct, and to attempt a different spelling if the first spelling looks incorrect. By the time students are in 3rd grade, ask them to use the number of syllables in a word to help determine whether their spelling appears logical. Words that appear frequently in writing, especially irregular high-frequency words and words that students misspell frequently, can be posted on a word wall and/or added to students' personal dictionaries or writing journals.

Obstacle 3.2. *Students are able to identify the sounds of the letters in a word, but they have trouble arriving at the correct pronunciation for the word.*

Panel's Advice. Students should be taught to sound out or blend sounds smoothly, without stopping between sounds, as described in the first component of Recommendation 3. Teachers should listen for students who add a schwa sound after stop sounds (e.g., /b/ becomes buh) and should work with those students to reduce or eliminate the schwa sound. When teaching students to sound out or blend a multisyllabic word using the method described in the second component of Recommendation 3, teachers should encourage students to be flexible with their vowel pronunciation in order to arrive at a recognizable word.

Ensure that each student reads connected text every day to support reading accuracy, fluency, and comprehension.

Reading connected text (multiple related sentences) poses different challenges than reading isolated words or phrases. Reading connected text accurately, fluently, and with appropriate phrasing and comprehension requires students to identify words quickly, integrate ideas in the text with their background knowledge, self-monitor their understanding, and apply strategies to support comprehension and repair misunderstandings.[114] The National Reading Panel (NRP) found compelling evidence that instruction to increase reading fluency is critical to both reading comprehension and future reading success and ease.[115] The new research examined for this guide confirms those earlier conclusions.

Having students read connected text daily, both with and without constructive feedback, facilitates the development of reading accuracy, fluency, and comprehension and should begin as soon as students can identify a few words. Students should interact with a variety of connected texts, including texts of varied levels, diverse genres, and wide-ranging content. In particular, students should read both informational and narrative text, beginning in the early grades.

For recommendations on teaching reading comprehension, see the guide, Improving Reading Comprehension in Kindergarten Through 3rd Grade*, a companion to this practice guide.[116]*

Implementation Timeline

Grade K	Grade 1	Grade 2	Grade 3
Recommendation 4			

Summary of evidence: Moderate Evidence

Twenty-two studies that examined the effectiveness of interventions with connected text meet WWC group design standards and include a relevant outcome (see Appendix D).[117] Although 18 studies showed positive effects on word reading, **oral reading accuracy**, **oral reading fluency**, and/or reading comprehension outcomes,[118] eight of these studies also reported no discernible effects on other outcomes in these areas.[119] In addition, three studies found no discernible effects for any outcome,[120] and one study found a negative effect for one outcome.[121] Because of this inconsistent pattern of positive effects, the panel and staff did not assign a strong evidence rating to this recommendation.

The 18 studies that found positive effects contributed to the moderate level of evidence;[122] the remainder of this paragraph focuses on those studies. Nine of these studies had interventions that included all three components of Recommendation 4,[123] and the interventions in an additional five studies aligned with two components of Recommendation 4.[124] Fifteen studies meet WWC group design standards without reservations[125] The studies collectively included diverse students in kindergarten through grade 3; 11 studies examined students at risk for reading difficulties,[126] and the other seven studies examined general education students.[127] The interventions in 11 studies were delivered one-on-one,[128] while six studies examined interventions implemented with small groups of students,[129] and one intervention used a combination of small groups and whole-class instruction.[130] Sixteen studies occurred in the United States,[131] and two studies occurred in the United Kingdom.[132] Overall, the 18 studies related to Recommendation 4 found an inconsistent pattern of positive effects. Therefore, the panel and staff assigned a *moderate* level of evidence to Recommendation 4.

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1. ## As students read orally, model strategies, scaffold, and provide feedback to support accurate and efficient word identification.

Students need to practice reading connected text while they are learning the alphabetic principle and decoding, as described in Recommendations 2 and 3.[133] For example, first introduce a particular sound–spelling pattern (e.g., *th*) by presenting isolated words, and then have students read texts featuring words that contain the given pattern.

To help students practice decoding and **word identification**, plan activities in which students receive support from a more proficient reader—such as a teacher, parent, or another student—who can provide constructive feedback or support. Work one-on-one or in small groups with students, modeling the use of effective word-reading strategies in oral reading, and providing prompting and scaffolding when students encounter challenging words. The activities can use **instructional-level text** with examples of recently taught sound–spelling patterns.[134] Instructional-level text provides some challenge without overwhelming the student, as presented in Example 4.1. Students reading an instructional-level text should be able to read most of the words and grammatical structures, missing no more than one word out of every 10.

Example 4.1. Text levels

As text difficulty decreases from **frustration level** to instructional level and finally to **independent level**, texts present less challenge and students require less support to read texts accurately.

| Frustration Level | Instructional Level | Independent Level |

Support Needed

| More | Challenge | Less |
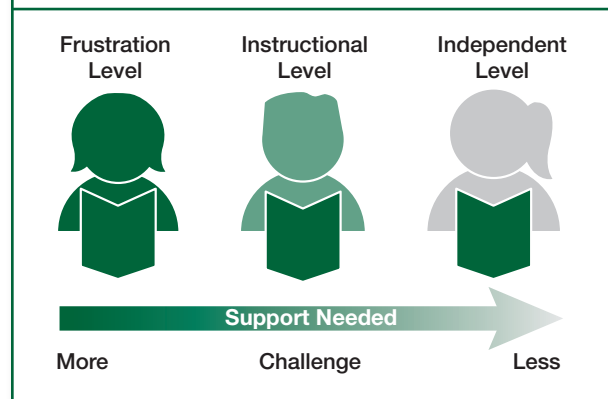
When students encounter words that they find difficult to read, remind them to apply the decoding and word-recognition skills and strategies they have learned and to then reread the word in context, as illustrated in Example 4.2.[135]

Example 4.2. Prompting students to apply word-reading strategies

For less advanced readers:

1. **"Look for parts you know."**
   Point out known letter sounds, sound–spelling patterns, or rime patterns if the student does not recognize any.
2. **"Sound it out."**
   If the student has difficulty, prompt each step of the process as shown in Recommendation 3.
3. **"Check it! Does it make sense?"**
   Prompt the reader to reread the sentence.

For more advanced readers:

1. **"You know this word part. Say this part."**
   Point to familiar prefixes or suffixes (e.g., -*ing*) or the first syllable of the word. Repeat for additional parts or syllables as needed.
2. **"Now read the whole word."**

When students cannot decode words or sound–spelling patterns using their existing knowledge and strategies—such as the irregular words *of* and *was*—simply tell students the words or sound–spelling patterns and ask them to repeat the word.[136] The panel recommends asking the student to reread the sentence to be sure the word makes sense.

The panel discourages teachers from allowing students to use guessing strategies to identify unfamiliar words, because these will not be effective with more-advanced texts. For example, discourage students from guessing unknown words using beginning letters or pictures.[137] The panel also cautions against giving hints that encourage students to guess a word as if answering a riddle (e.g., "What do you call the place where you live?" if students cannot make sense of the letters *h-o-m-e*).

As students' reading skills develop, scaffold by providing fewer prompts and supports and expecting students to apply skills and strategies independently.[138] For example, rather than prompting the student to sound out a word, the teacher can ask the student, "What can you try?" This encourages the student to identify and then implement the strategy independently. Eventually, students will begin to identify unknown words without prompting from the teacher. This process of gradually releasing responsibility to students is important for students' growth as independent readers, and it is essential to the development of word-reading skills.[139] Students may again need teacher support when they progress to more challenging types of words and more challenging texts.

2. Teach students to self-monitor their understanding of the text and to self-correct word-reading errors.

Teach students to monitor their understanding as they read and to correct word-reading errors when they occur.[140] Competent readers can recognize when the text does not make sense

because they have misread a word, and can correct their mistake. Often students do not recognize word-reading errors because they have not been paying attention to their own reading to know whether their reading made sense.

Model and teach self-monitoring and self-correction using activities such as the "Fix It" game (see Example 4.3), and integrate these strategies with word-reading and fluency instruction.[141] Model each step in the game so that students understand what they need to do. Then play one or two rounds of the game with students in small groups to demonstrate the types of errors they should look for and how to correct them.

Example 4.3. The "Fix It" game

Steps:

1. The teacher introduces the task by explaining that sometimes we make mistakes when we read, and the mistakes make the sentences sound silly because the words don't make sense. When a sentence or passage makes sense, it sounds right; it doesn't sound silly or mixed-up.
2. The teacher reads a list of sentences; some contain a word that does not make sense, while other sentences do make sense.
3. Students must say whether or not each sentence makes sense or sounds right. If it doesn't, students must explain why not.
4. If a sentence does not make sense, students must "fix it."

Example:

Teacher: "The bus stepped at the corner." Does that make sense?
Student(s): No.
Teacher: Why not?
Student(s): A bus can't step.
Teacher: Fix it!
Student(s): "The bus stopped at the corner."
Teacher: Right! That makes sense! Remember that when you read, it has to make sense. If it doesn't, you have to go back and fix it!

When a student makes a word-reading error on a word he or she should be able to read, pause so the student can correct the error; provide support if needed.[142] Rather than simply telling the student the correct word, have students reread the sentence in which the misread word appears. For students who cannot identify the error word on their own, read the sentence(s) exactly as the student did, including the error. Ask the student, "Did that make sense?" or "Did that sound right?" Use these scaffolds less frequently as students begin to independently self-monitor and self-correct their errors.

3. Provide opportunities for oral reading practice with feedback to develop fluent and accurate reading with expression.

Have students practice to develop reading fluency—the ability to read orally at a natural pace and with **expression**, including appropriate pauses at the ends of sentences.[143] Through

modeling and feedback, help students understand how to read the text in meaningful phrases rather than word by word.

Model expression and phrasing in fluent reading.[144] Introduce students to punctuation marks, and explain how to interpret them.[145] Provide feedback and additional modeling on how to phrase text and read with expression, including which words to emphasize. Decrease the support for expressive reading as students begin to read text in progressively longer phrases.

Using familiar texts, model how to read accurately at a fluent pace. Initially, set a slow, steady pace for student reading, and gradually increase the reading rate and accuracy, moving on to more challenging text.[146] When reading text along with students, read with expression in a quiet voice and set a pace that reflects students' word-reading abilities, slowing down a bit for words that present particular challenges.[147] To develop fluency when students read independently the text should be at their independent level, and when students read with feedback the text should be at their instructional level (reading levels are shown in Example 4.1).[148] It is important not to ask students to read frustration-level text without feedback, as it can lead them to practice ineffective word-reading strategies that reduce comprehension.

Activities to practice reading fluently include the following:

- individual oral reading with support[149]

- individual oral reading with a recording device, with teacher feedback provided later

- partner reading[150]

- **choral reading** in small groups with careful monitoring to ensure that all students are participating, as opposed to copying their peers

- **echo reading**, where a more experienced reader (often the teacher) reads a section of text aloud and then the student reads the same section aloud

- **alternated reading**, where the student and a more experienced reader (often the teacher), take turns reading continuous sections of text

- **simultaneous reading**, where the student(s) and teacher read the same text aloud at the same time

- individual oral reading with computerized reading devices, provided that the text is read at a pace appropriate to the students' reading rate[151]

When working with e-books or other computerized reading devices, make sure that the text used is appropriate to students' word-reading and comprehension abilities so that students actively practice oral reading.

To support oral reading fluency, give students assignments for both **repeated reading**[152]—in which they read the same text multiple times for mastery—and **wide reading**[153]—in which they read many different texts. In repeated reading, students are less likely to practice incorrect word reading or to guess unknown words. They are repeatedly exposed to the same words, which should help students recognize them more efficiently. Wide reading, on the other hand, exposes students to more diverse vocabulary and world knowledge.

Teachers can support students' fluency practice in the following ways:

- Preempt word-reading challenges presented in new texts by identifying and practicing challenging words with students before they read the full text.[154]

- Remind students that the purpose of reading is to derive meaning from the text. To support comprehension, regularly ask students a few questions after reading a text.

- If students adopt a guessing strategy to identify words, rather than taking the time to use the strategies they have been taught, temporarily reduce or suspend fluency practice, and increase activities designed to support word-reading accuracy (described earlier in this recommendation).

Potential obstacles to implementing Recommendation 4 and the panel's advice

Obstacle 4.1. *How do I select texts that are accessible to all students in my classroom?*

Panel's Advice. Teachers can monitor student progress and adjust the assigned text for students of above- or below-average reading ability.[155] Text selection should reflect student abilities, the purpose of instruction, and the degree of scaffolding and feedback available. For example, independent-level texts may be appropriate for independent fluency practice. In contrast, frustration-level texts may be appropriate for practice applying word-reading skills with individual teacher support. This may mean that some students use different texts for a given activity than others, based on their reading ability, or that students practice different skills when working with the same text.

For students with serious comprehension difficulties, select texts that students will be able to comprehend with support—that is, clearly written, well-organized texts, ideally about topics familiar to students. More-proficient readers may require text above their grade level to keep them challenged and engaged.

Obstacle 4.2. *My beginning readers can only decode a few letter sounds, so they rely on illustrations to identify words rather than applying other word-identification strategies.*

Panel's Advice. In the early stages of reading development, students know only a few letter sounds, so most texts contain words they cannot yet decode. This problem can be preempted by having students read decodable text—text that is written so that students can read it using the letter sounds and high-frequency sight words they have learned. In non-decodable text, rather than allowing students to rely on the illustrations—a habit that will not be effective with more-difficult texts and may become difficult to break—use the opportunity to model sounding out words for students. When students come to an unfamiliar word, follow the process shown in Example 4.2. This will provide the students with the correct word, but it will also demonstrate that this is the strategy students should use independently when possible. When students stop on a word that is very challenging or irregular, tell them the word and have them repeat the word and reread the sentence, as described in the first component of this recommendation.

Obstacle 4.3. *I have limited time and resources for one-on-one instruction. How can I maximize my instructional time to provide each student with individualized feedback?*

Panel's Advice. Throughout the week, teachers can provide individualized instruction or feedback to each student while other students are working independently or in small groups. While the teacher works with one student or a small group of students, the rest of the class can complete partner reading or independent reading with computerized reading devices. If another adult or an older student is available, the rest of the class could work on echo reading, alternated reading, or simultaneous reading activities.

Establish clear classroom routines and expectations around independent and small-group reading activities, so that students are accustomed to and comfortable with these types of activities. Independent and small-group activities are most effective if the teacher has carefully taught the routines for the activity, has provided opportunities for students to practice with teacher feedback, and implements the routine regularly to maintain familiarity.

Glossary

A

Academic language is the formal language that is common in books and at school, but that students are unlikely to encounter in everyday conversations with friends and family.

Academic language skills include the ability to articulate complex ideas, the ability to relate a series of events comprehensibly, and the ability to use and comprehend a wide range of vocabulary and grammatical structures.

Academic vocabulary consists of words and grammatical structures that students do not encounter in their daily conversations but that are common in formal settings, and therefore need to be taught if students are to successfully understand written text. This includes words that commonly appear in instructions, such as *contrast*, *concentrate*, *select*, *locate*, *define*, and *estimate*.

The **alphabetic principle** is the concept that letters and letter combinations represent individual phonemes in written words.

In **alternated reading**, the student and a second reader, typically the teacher or another more proficient reader, take turns reading continuous sections of the text, without repeating any of the text.

B

Blending refers to reading a word systematically from left to right by combining the sounds of each successive letter or combination of letters.

C

In **choral reading**, students all read the same text aloud at a set pace.

Chunking is a decoding strategy in which the reader adds letter sounds successively and cumulatively to produce a word.

Connected text consists of multiple related sentences.

A **consonant blend** is made up of two or more consecutive consonants that retain their individual sounds (e.g., /bl/ in *block* or /str/ in *string*).

A **continuous sound**, also referred to as a continuant sound, is a sound that can be held without distortion (e.g., /f/, /l/, /m/, /n/, /r/, /s/, /v/, /z/).

A **contraction** is a shortened form of a word or group of words, with the omitted letters often replaced in written English by an apostrophe (e.g., *isn't* for *is not*, or *don't* for *do not*).

D

Decoding is the ability to translate a word from print to speech, usually by employing knowledge of letter–sound relationships; also, the act of deciphering a new word by sounding it out.

A **digraph** is a group of two consecutive letters that are read as a single sound (e.g., /ea/ in *bread*; /ch/ in *chat*; /ng/ in *sing*).

A **diphthong** is a vowel produced by the tongue shifting position during articulation. The vowel feels as if it has two parts, as the sound begins with one vowel and gradually changes to another vowel within the same syllable (e.g., *ow*, *oy*, *ou*, *oi*).

E

In **echo reading**, a more proficient reader (usually the teacher) reads a section of the text aloud, and then the student reads that same section of text aloud.

Elkonin sound boxes are tools used during phonemic-awareness and encoding instruction. One box is provided for each sound in a target word. Elkonin boxes are sometimes referred to as *sound boxes*.

Encoding refers to determining the spelling of a word based on the sounds in the word.

Evidence-based practices, policies, or recommendations are those that are supported by studies that meet WWC design standards with or without reservations.

Expression is an element of fluent reading that involves reading with expression, including proper intonation, pausing, and phrasing.

F

Fluency. See *oral reading fluency*.

Frustration-level text is text that is difficult for readers to read accurately.

H

Holistic teaching here refers to teaching words as whole words rather than as combinations of sound units.

I

Independent-level text is text that is relatively easy for readers to read accurately without support.

Inferential language moves beyond the immediate context. Inferential language focuses on topics removed from the here and now, thus requiring students to predict, reason, problem-solve, hypothesize, and/or contrast.

Informational text analyzes or explains factual information about the natural or social world. Informational texts may include pieces that argue in favor of one position or another, true narratives such as biographies, and procedural texts and documents. Textbooks and other texts used to support science and social studies learning in school contain primarily informational text.

Instructional-level text is text that is challenging but manageable for readers to read accurately with support.

Irregular words are words that have exceptions to the typical sound–spelling patterns. Irregular words are difficult to decode because the sounds of the letters in the word do not add up to the correct pronunciation.
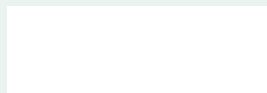
L

Letter reversal is when students confuse (i.e., incorrectly identify or incorrectly write) letter shapes and/or sounds.

Listening comprehension outcomes measure a student's ability to follow, process, and understand spoken language, including comprehension of informational and narrative texts.

Long vowels are the vowel sounds in English that are also the names of the alphabet letters *a*, *e*, *i*, *o*, and *u* (as in, for example, *halo*, *bind*, and *told*).

M

Modeling refers to a teacher overtly demonstrating a strategy, skill, or concept that students will be learning and using.

Morphology refers to the knowledge of meaningful word parts in a language (typically the knowledge of prefixes, suffixes, and/or roots and base words).

Multisyllabic words contain more than one vowel sound, and thus, more than one syllable.

N

Narrative language refers to the production or comprehension of a fictional or real account of an experience. Narrative language skills include the ability to clearly relate a series of events, as well as applying more-nuanced grammatical structures to connect pieces of information.

Non-decodable words are words that the reader is unable to decode.

O

Onset–rime pairs involve two parts of a syllable: the *onset* consists of the initial consonant(s), and the *rime* consists of the vowel and any consonants that follow it. (For example, in the word *sat*, the onset is *s* and the rime is *at*. In the word *flip*, the onset is *fl* and the rime is *ip*).

Oral language is the system we use to communicate with others through speaking and listening.

Oral reading accuracy refers to the ability to read a given passage of text aloud accurately, but without regard to reading rate. In some tests, results are reported in the form of the percentage of words read accurately; in other tests, students read several texts of increasing difficulty, and the score represents the highest text level a student can read at a predetermined level of accuracy (e.g., 90 percent accuracy).

Oral reading fluency is the ability to read a passage of text aloud accurately, at an appropriate rate, and with expression (i.e., with appropriate expression, including appropriate pausing and oral interpretation of the text).

P

A **phoneme** is the smallest unit of sound within a language system. A phoneme may be a word by itself, or it may be combined with other phonemes to make a word.

Phonemic awareness is the ability to understand that sounds in spoken language work together to make words. Phonemic awareness is auditory; it does not involve printed letters. It includes the ability to notice, think about, and manipulate the individual phonemes in spoken words. Phonemic awareness is a type of phonological awareness.

Phonological awareness is the ability to recognize that words are made up of individual sound units. It is an umbrella term that is used to refer to a student's sensitivity to any aspect of phonological structure in language. It encompasses awareness of individual words in sentences, syllables, and onset–rime segments, as well as awareness of individual phonemes. Phonological awareness can also refer to the awareness of segments of sounds in words.

Phonology refers to the sound structure of language. Phonology tasks are auditory/oral tasks that focus on students' ability to articulate the sounds of language, without involving letter or word knowledge.

A **prefix** is a morpheme that precedes a root or base word and contributes to or modifies the meaning of a word (e.g., *re–* in *reprint*).

R

Reading comprehension refers to the understanding of the meaning of a passage and the context in which the words occur. Reading comprehension depends on various underlying components including decoding (the ability to translate words into speech), knowledge of word meanings, fluency, and the ability to understand and interpret spoken language.

Repeated reading refers to the instructional practice of having students practice rereading the same text as a way to support the development of oral reading fluency.

The **root** of a word is the element that contains the main meaning of the word. The root is used to form a family of words with related meanings by adding other elements, such as prefixes, suffixes, and inflected endings, before and/or after the root. A root is not necessarily a complete word by itself (e.g., *spect* in *inspector*).

Rime See *onset–rime pairs.*

S

Scaffolding refers to the temporary support provided to students to enable them to answer a question correctly or perform some other task that they have not been able to perform independently. This support may occur as immediate, specific feedback that a teacher offers during student practice—including reminders, prompts, or "hints." It may involve giving students encouragement or cues, breaking a problem down into smaller steps, using a graphic organizer, or providing an example. Scaffolding may be embedded in the features of the instructional design, such as starting with simpler skills and building progressively to more difficult skills or providing readers with accessible text. The support

is decreased, or faded, as students become able to accomplish the task without help. However, when new or more-advanced tasks are introduced (or more-difficult texts are encountered), scaffolding may be required once again.

Segments of sound are sounds that are part of a word, as in /c/, /a/, and /t/ in *cat*. Awareness of the segments of sound in speech is also referred to as phonological awareness.

Short vowels are the sounds of /a/, /e/, /i/, /o/, and /u/ heard in *bat*, *bet*, *bit*, *bob*, and *bub*, as well as the sound of /y/ heard in *gym*.

A **silent-*e* pattern** is a sound–spelling pattern with a final silent *e* that changes the pronunciation of the vowel that precedes it.

In **simultaneous reading**, the teacher and student(s) read the same text aloud, at the same pace.

Sounding out a word is a type of blending that involves saying the sound of each letter or letter combination one by one until the end of the word, and then saying them all together again quickly.

Stop sounds are made with quick puffs of air, and the sound cannot be maintained (e.g., /b/, /d/, /g/, /k/, /p/, /t/). Words beginning with stop sounds may be more difficult for students to sound out than words beginning with continuous sounds.

A **suffix** is a morpheme attached to the end of a base, root, or stem that changes the meaning or grammatical function of the word (e.g., –*en* in *oxen* or –*ness* in *kindness*).

A **syllable** is a segment of a word that contains one vowel sound. The vowel sound may be represented by one or more letters, and it may or may not be preceded and/or followed by a consonant.

Syntax refers to the formation of sentences and the associated grammatical rules.

V

Vocabulary refers to knowledge about the meanings, uses, and pronunciation of words.

W

Wide reading refers to reading a diverse variety of texts.

Word identification refers to recognizing in print a word in one's spoken vocabulary.

A **word wall** is a prominent space on the classroom wall that is used to display high-frequency irregular words and/or words that contain the sound–spelling patterns that students have learned.

Postscript from the Institute of Education Sciences

What is a practice guide?

The Institute of Education Sciences (IES) publishes practice guides to share evidence and expert guidance on addressing education-related challenges not readily solved with a single program, policy, or practice. Each practice guide's panel of experts develops recommendations for a coherent approach to a multifaceted problem. Each recommendation is explicitly connected to supporting evidence. Using What Works Clearinghouse (WWC) design standards, the supporting evidence is rated to reflect how well the research demonstrates the effectiveness of the recommended practices. *Strong evidence* means positive findings are demonstrated in multiple well-designed, well-executed studies, leaving little or no doubt that the positive effects are caused by the recommended practice. *Moderate evidence* means well-designed studies show positive impacts, but there are questions about whether the findings can be generalized beyond the study samples or whether the studies definitively show evidence that the practice is effective. *Minimal evidence* means that there is not definitive evidence that the recommended practice is effective in improving the outcome of interest, although there may be data to suggest a correlation between the practice and the outcome of interest. (See Table A.1 for more details on levels of evidence.)

How are practice guides developed?

To produce a practice guide, IES first selects a topic. Topic selection is informed by inquiries and requests to the WWC Help Desk, a limited literature search, and evaluation of the topic's evidence base. Next, IES recruits a panel chair who has a national reputation and expertise in the topic. The chair, working with IES and WWC staff, then selects panelists to co-author the guide. Panelists are selected based on their expertise in the topic area and the belief that they can work together to develop relevant, evidence-based recommendations. Panels include two practitioners with expertise in the topic.

Relevant studies are identified through panel recommendations and a systematic literature search. These studies are then reviewed against the WWC design standards by certified reviewers who rate each effectiveness study. The panel synthesizes the evidence into recommendations. WWC staff summarize the research and help draft the practice guide.

IES practice guides are then subjected to external peer review. This review is done independently of the IES staff that supported the development of the guide. A critical task of the peer reviewers of a practice guide is to determine whether the evidence cited in support of particular recommendations is up-to-date and that studies of similar or better quality that point in a different direction have not been overlooked. Peer reviewers also evaluate whether the level of evidence category assigned to each recommendation is appropriate. After the review, a practice guide is revised to meet any concerns of the reviewers and to gain the approval of the standards and review staff at IES.

Institute of Education Sciences levels of evidence for What Works Clearinghouse practice guides

This section provides information about the role of evidence in IES's WWC practice guides. It describes how practice guide panels determine the level of evidence for each recommendation and explains the criteria for each of the three levels of evidence (strong evidence, moderate evidence, and minimal evidence).

The level of evidence assigned to each recommendation in this practice guide represents the panel's judgment of the quality of the existing research to support a claim that, when these practices were implemented in past research, positive effects were observed on student outcomes. After careful review of

the studies supporting each recommendation, panelists determine the level of evidence for each recommendation using the criteria in Table A.1. The panel first considers the relevance of individual studies to the recommendation and then discusses the entire evidence base, taking the following into consideration:

- the number of studies

- the study designs

- the internal validity of the studies

- whether the studies represent the range of participants and settings on which the recommendation is focused

- whether findings from the studies can be attributed to the recommended practice

- whether findings in the studies are consistently positive

A rating of *strong evidence* refers to consistent evidence that the recommended strategies, programs, or practices improve student outcomes for a diverse population of students.[156] In other words, there is strong causal and generalizable evidence.

A rating of *moderate evidence* refers either to evidence from studies that allow strong causal conclusions but cannot be generalized with assurance to the population on which a recommendation is focused (perhaps because the findings have not been widely replicated) or to evidence from studies that are generalizable but have some causal ambiguity. It also might be that the studies that exist do not specifically examine the outcomes of interest in the practice guide, although the studies may be related to the recommendation.

A rating of *minimal evidence* suggests that the panel cannot point to a body of evidence that demonstrates the practice's positive effect on student achievement. In some cases, this simply means that the recommended practices would be difficult to study in a rigorous, experimental fashion;[157] in other cases, it

means that researchers have not yet studied this practice, or that there is weak or conflicting evidence of effectiveness. A minimal evidence rating does not indicate that the recommendation is any less important than other recommendations with a strong or moderate evidence rating.

In developing the levels of evidence, the panel considers each of the criteria in Table A.1. The level of evidence rating is determined by the lowest rating achieved for any individual criterion. Thus, for a recommendation to get a strong rating, the research must be rated as strong on each criterion. If at least one criterion receives a rating of moderate and none receives a rating of minimal, then the level of evidence is determined to be moderate. If one or more criteria receive a rating of minimal, then the level of evidence is determined to be minimal.

The panel relied on WWC design standards to assess the quality of evidence supporting education programs and practices. The WWC evaluates evidence for the causal validity of instructional programs and practices according to WWC design standards. Information about these standards is available at http://whatworks.ed.gov. Eligible studies that meet WWC designs standards without reservations or meet WWC design standards with reservations are indicated by **bold text** in the endnotes and references pages.

A final note about IES practice guides

In policy and other arenas, expert panels typically try to build a consensus, forging statements that all its members endorse. Practice guides do more than find common ground; they create a list of actionable recommendations. Where research clearly shows which practices are effective, the panelists use this evidence to guide their recommendations. However, in some cases research does not provide a clear indication of what works. In these cases, the panelists' interpretation of the existing (but incomplete) evidence plays an important role in guiding the

recommendations. As a result, it is possible that two teams of recognized experts working independently to produce a practice guide on the same topic would come to very different conclusions. Those who use the guides should recognize that the recommendations represent, in effect, the advice of consultants. However, the advice might be better than what a school or district could obtain on its own. Practice guide authors are nationally recognized experts who collectively endorse the recommendations, justify their choices with supporting evidence, and face rigorous independent peer review of their conclusions. Schools and districts would likely not find such a comprehensive approach when seeking the advice of individual consultants.

**Institute of Education Sciences**

Table A.1. Institute of Education Sciences levels of evidence for What Works Clearinghouse practice guides

Criteria	STRONG Evidence Base	MODERATE Evidence Base	MINIMAL Evidence Base
Validity	High internal validity (high-quality causal designs). Studies must meet WWC design standards with or without reservations.[158] AND High external validity (requires multiple studies with high-quality causal designs that represent the population on which the recommendation is focused). Studies must meet WWC design standards with or without reservations.	High internal validity but moderate external validity (i.e., studies that support strong causal conclusions but generalization is uncertain). OR High external validity but moderate internal validity (i.e., studies that support the generality of a relation but the causality is uncertain).[159]	The research may include evidence from studies that do not meet the criteria for moderate or strong evidence (e.g., case studies, qualitative research).
Effects on relevant outcomes	Consistent positive effects without contradictory evidence (i.e., no statistically significant negative effects) in studies with high internal validity.	A preponderance of evidence of positive effects. Contradictory evidence (i.e., statistically significant negative effects) must be discussed by the panel and considered with regard to relevance to the scope of the guide and intensity of the recommendation as a component of the intervention evaluated.	There may be weak or contradictory evidence of effects.
Relevance to scope	Direct relevance to scope (i.e., ecological validity)—relevant context (e.g., classroom vs. laboratory), sample (e.g., age and characteristics), and outcomes evaluated.	Relevance to scope (ecological validity) may vary, including relevant context (e.g., classroom vs. laboratory), sample (e.g., age and characteristics), and outcomes evaluated. At least some research is directly relevant to scope (but the research that is relevant to scope does not qualify as strong with respect to validity).	The research may be out of the scope of the practice guide.
Relationship between research and recommendations	Direct test of the recommendation in the studies or the recommendation is a major component of the intervention tested in the studies.	Intensity of the recommendation as a component of the interventions evaluated in the studies may vary.	Studies for which the intensity of the recommendation as a component of the interventions evaluated in the studies is low; and/or the recommendation reflects expert opinion based on reasonable extrapolations from research.

(continued)

Table A.1. Institute of Education Sciences levels of evidence for What Works Clearinghouse practice guides *(continued)*

Criteria	STRONG Evidence Base	MODERATE Evidence Base	MINIMAL Evidence Base
Panel confidence	The panel has a high degree of confidence that this practice is effective.	The panel determines that the research does not rise to the level of strong but is more compelling than a minimal level of evidence. The panel may not be confident about whether the research has effectively controlled for other explanations or whether the practice would be effective in most or all contexts.	In the panel's opinion, the recommendation must be addressed as part of the practice guide; however, the panel cannot point to a body of research that rises to the level of moderate or strong.
Role of expert opinion	Not applicable	Not applicable	Expert opinion based on defensible interpretations of theory (theories). (In some cases, this simply means that the recommended practices would be difficult to study in a rigorous, experimental fashion; in other cases, it means that researchers have not yet studied this practice.)
When assessment is the focus of the recommendation	For assessments, meets the standards of *The Standards for Educational and Psychological Testing.*[160]	For assessments, evidence of reliability that meets *The Standards for Educational and Psychological Testing* but with evidence of validity from samples not adequately representative of the population on which the recommendation is focused.	Not applicable
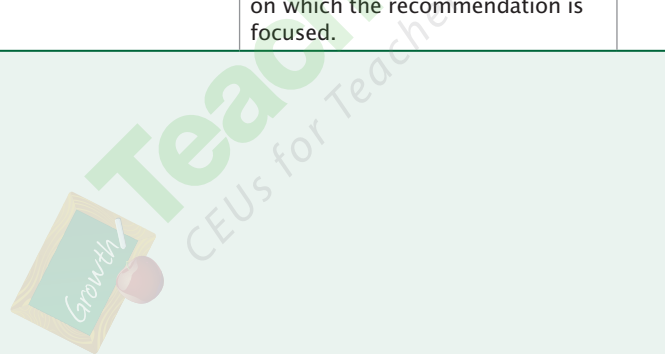
This course was developed from the public domain document: Foundational Skills to Support Reading for Understanding in Kindergarten Through 3rd Grade - Foorman, B., Beyler, N., Borradaile, K., Coyne, M., Denton, C. A., Dimino, J., Furgeson, J., Hayes, L., Henke, J., Justice, L., Keating, B., Lewis, W., Sattar, S., Streke, A., Wagner, R., & Wissel, S. (2016). (NCEE 2016-4008). Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education. Retrieved from the NCEE website: http://whatworks.ed.gov.