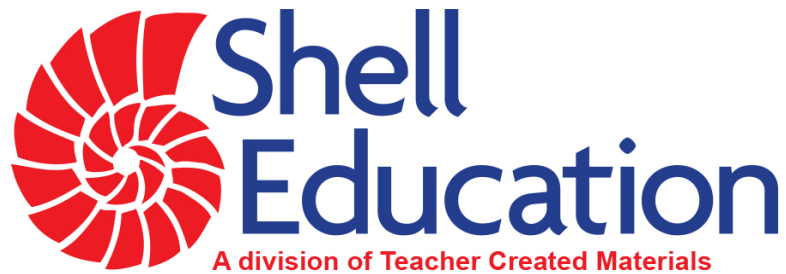Sample Pages from

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To **Create** a World in which **Children** Love to **Learn!**

What the
Science
of Reading
Says

Literacy Strategies

for Grades 3-5

Laura Keisler

Table of Contents

INTRODUCTION

What the Science of Reading Says

This book is one in a series of professional resources that provide teaching strategies aligned with the Science of Reading. The term the *Science of Reading* pervades the national conversation around the best literacy instruction for all students. The purpose of this series is to close the gap between the knowledge and understanding of what students need to become literate humans and the instructional practices in our schools. This gap is widely acknowledged yet remains intact. While research is available, journals are not easy to navigate. However, with concise resources that build understanding of the body of research and offer strategies aligned with that research, teachers can be equipped with the logical steps to find success. This book will help you navigate the important Science of Reading research and implement strategies based on that research in your classroom.

> The Science of Reading is the collection of excellent research that leads to the understanding of how students learn to read.

What is meant by the phrase *Science of Reading*? The Science of Reading is the collection of excellent research that leads to the understanding of how students learn to read. Research dedicated to understanding how we learn to read and write has been conducted for more than fifty years. This research has explored topics ranging from the skills needed to read and write, to the parts of the brain involved in reading development, to the best way to teach children how to read. The research clearly demonstrates the following: 1) the most effective early reading instruction includes an explicit, structured, phonics-based approach to word reading; and 2) reading comprehension relies on word reading (being able to decode individual words) and language comprehension (being able to understand what words and sentences mean).

According to the Report of the National Reading Panel (2000), a comprehensive literacy program should contain explicit skills instruction in phonemic awareness, phonics, fluency, vocabulary, and reading and language comprehension. Effective literacy instruction includes explicit instruction in all five of the components of reading plus writing. Ideally, this will occur in classrooms that emphasize and facilitate motivation for and engagement in reading through the use of a variety of authentic texts, authentic tasks, cooperative learning, and whole- and small-group instruction that connects reading to students' lived realities. Motivation and engagement are important considerations in our teaching. Cultural and linguistic relevance and responsiveness are essential. Authentic opportunities for speaking, listening, and writing are critical. Gradual release of responsibility is necessary to build independence and is an integral part of promoting a culture of literacy that students will embrace and take with them once they leave our care. Let us explore more closely what we can learn from the Science of Reading.

The Science of Reading: Models of Reading

The widely accepted model of the Simple View of Reading (SVR) proposed by Gough and Tunmer (1986) and later refined by Hoover and Gough (1990) depicts reading comprehension as the product of word recognition and language comprehension. This model of reading offers educators a simple, comprehensible way of organizing their understanding of the constructs that can predict successful literacy outcomes (Snow 2018). Hoover and Tunmer (2018) describe these constructs as:

- Word recognition: the ability to recognize printed words accurately and quickly to efficiently gain access to the appropriate word meanings contained in the internal mental lexicon.
- Language comprehension: the ability to extract and construct literal and inferred meaning from speech.
- Reading comprehension: the ability to extract and construct literal and inferred meaning from linguistic discourse represented in print.

| **Word Recognition**
The ability to transform print into spoken language | × | **Language Comprehension**
The ability to understand spoken language | = | **Reading Comprehension** |
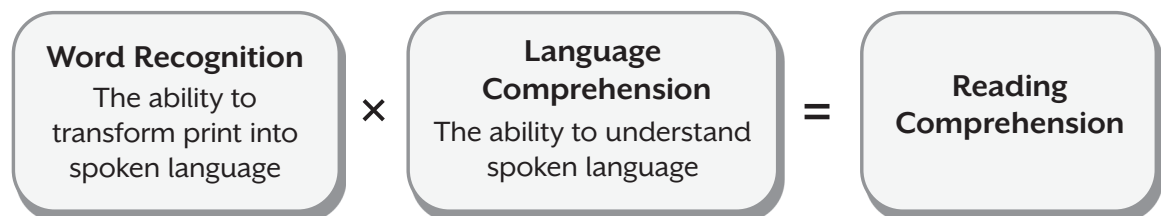
The Simple View of Reading

Later work (Hoover and Tunmer 2020; Scarborough 2001) further describes the crucial elements within each of these constructs by incorporating the best of what science tells us about how we read. Scarborough's Reading Rope identifies the underlying skills required for effective and efficient word recognition and language comprehension.

THE MANY STRANDS THAT ARE WOVEN INTO SKILLED READING

LANGUAGE COMPREHENSION

BACKGROUND KNOWLEDGE
(facts, concepts, etc.)

VOCABULARY
(breadth, precision, links, etc.)

LANGUAGE STRUCTURES
(syntax, semantics, etc.)

VERBAL REASONING
(inference, metaphor, etc.)

LITERACY KNOWLEDGE
(print concepts, genres, etc.)

WORD RECOGNITION

PHONOLOGICAL AWARENESS
(syllables, phonemes, etc.)

DECODING (alphabetic principle, spelling-sound correspondences)

SIGHT RECOGNITION
(of familiar words)

increasingly strategic

increasingly automatic

SKILLED READING:
Fluent execution and coordination of word recognition and text comprehension.

Scarborough's Reading Rope

Credit: Hollis Scarborough, "Connecting Early Language and Literacy to Later Reading (Dis)abilities: Evidence, Theory, and Practice" in *Handbook of Research in Early Literacy*, edited by Susan B. Neuman and David K. Dickinson © Guilford Press, 2001.

Wesley Hoover, William Tunmer, Philip Gough, and Hollis Scarborough are psychologists who dedicated their research to understanding what reading is and what must be present or learned for reading to occur. They have described the SVR as *simple* because it is intended to focus our attention only on what is important in reading, not to explain the process of *how* reading happens. Similarly, Scarborough expanded on the SVR to focus attention on more specific details of language comprehension and word recognition such as prior knowledge and phonological awareness, attempting to include space for process with the addition of automaticity and strategy. Both the SVR and the Reading Rope are models—hypotheses that attempt to explain the phenomena of reading. The models describe necessary but not sufficient conditions for reading. Many teachers know that decoding skills can be present, language comprehension can be apparent, and yet comprehension can be impeded. These foundational models do not account for motivation, development, social emotional considerations, linguistic differences, and a host of other factors relevant to literacy teaching and learning.

How to Use This Book

This book includes a variety of strategies that can be integrated into any language arts curriculum to improve students' reading and writing skills: promoting word consciousness, analyzing word parts, activating and developing knowledge through vocabulary development and content learning, using think-alouds and monitoring comprehension, questioning, summarizing, using visual representations and mental imagery, using text structure and text features, incorporating mentor text, using graphic organizers, and modeling writing. These research-based instructional strategies will help teachers bridge the gap between the science of literacy instruction and classroom practice.

The strategies are presented in three sections: I) Word Recognition; II) Reading Comprehension and Content Knowledge; and III) Writing. These three sections correspond with three professional resources: *What the Science of Reading Says about Word Recognition* (Jump and Johnson 2023), *What the Science of Reading Says about Comprehension and Content Knowledge* (Jump and Kopp 2023), and *What the Science of Reading Says about Writing* (Jump and Wolfe 2023).

Each section opens with an overview of research in that area to emphasize the importance of that particular component. There is a clear and detailed explanation of the component, suggestions for instruction, and best practices. This information provides teachers with the solid foundation of knowledge to provide deeper, more meaningful instruction to their students.

Following each overview are a variety of instructional strategies to improve students' reading and writing. The strategies in the book include the following:

- background information that includes a description and purpose of the strategy, and the research basis for the strategy
- the objective of the strategy
- a detailed description of how to implement the strategy, including any special preparation that might be needed
- suggestions for differentiating instruction

When applicable, the strategy includes one or more activity sheets as reproducibles in this book and in the digital resources. Grade-level examples of how the strategy is applied are also included when applicable. For more information about the digital resources, see page 180.

Word Recognition

The strategies in this section correspond with key competencies identified in *What the Science of Reading Says about Word Recognition* (Jump and Johnson 2023). These research-based instructional strategies will help teachers bridge the gap between the science of literacy instruction and classroom practice.

Strategy	Skills and Understandings Addressed			
	Phonics	Beyond Foundational Phonics	Sight Word Automaticity	Fluency
Word Engineer Notebook	■	■	■	
Build Words with Prefixes	■	■	■	
Build Words with Suffixes	■	■	■	
Word Morph	■	■		
Beat the Clock			■	■
Word Sort	■	■		■
Word Break		■		
Phrased Reading				■

Word Sort

Objectives

- Know and apply grade-level phonics and word analysis skills when decoding words.
- Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology to accurately read unfamiliar multisyllabic words in context and out of context.

Background Information

Word Sort (Bear and Barone 1998; Bear et al. 2020) requires readers to categorize words by finding common features, spelling patterns, roots, bases, and so on. This categorization helps readers build their understandings of the patterns and form generalizations that aid in decoding, encoding, and fluency building. Readers later apply these generalizations to unknown words. Bear and Barone (1998) and Bear et al. (2020) describe three types of sorts: sound, pattern, and meaning. Pattern sorts reinforce morphological analysis skills for upper elementary readers. Words can be sorted by common affixes, base words, and suffix spelling generalizations. Word sorts can be closed or open. In a closed sort, the teacher defines the sorting criteria (e.g., labeling the sort with specific prefix or suffix headings). In open sorts, students analyze the list of words to identify commonalities and then create the categories themselves.

Materials

- list of words to be sorted
- sentence strips or cards (optional)

Process

1. Develop a list of words that share the focus and distinction of the Word Sort. For example, if the focus is on making words plural, develop a list including examples of words that become plural by adding –*s* and others that become plural by adding –*es*.
2. Introduce the list of words to students. Read the words aloud, paying special attention to words that may be unfamiliar or difficult to pronounce.
3. Chorally read the words with students.
4. Conduct a think-aloud to establish the categories for sorting. Model asking questions such as "What do I notice about these words?" or "What do some of these words have in common?" Alternately, as students become familiar with Word Sorts, invite them to generate the categories rather than conducting a think-aloud.

5. Write the categories for the Word Sort on the board.

6. Model sorting several words, checking for student understanding of the sorting criteria. Have students work individually or with partners to sort the rest of the words.

7. Bring students back together to review the sorts. Reflect on the categories and what the words have in common. Reinforce the generalizations by paying attention to the categories and asking questions that allow students to verbalize their understanding.

Differentiation

- Most students in upper elementary grades can write the words directly in their Word Engineer or word study notebooks. However, you can also give students the words in card format for them to physically sort. Students can glue the word cards onto a sheet of paper or later record the words in their notebooks. Preview these cards or lists before the lesson if necessary.

- Word Sorts can be made easier or more difficult for small-group instruction. The number of categories can be increased or decreased, the contrast of the criteria can be made easier or more difficult, and the words chosen for the sort can be more or less complex depending on the number of affixes, lengths, morphemes, and the balance of familiar and unfamiliar words.

- Word sorting by the focus criteria can be reinforced throughout the week by conducting "word hunts." Encourage students to record words that match the criteria from their textbooks, library books, and other reading material. They can also be encouraged to record words they hear in discussions or encounter in media. At the end of the week, place students in groups or pairs to share the words they found during the week.

Examples

Closed Sort

Teach the rules of adding –s or –es to make certain words plural (for nouns that end in *ch*, *x*, *s*, *z*, or *s*-like sounds, add –es). Give students a list of words and have them sort them by their suffixes and explain the rule.

Sample word list: glasses, pencils, lunches, cats, bunches, lamps, boxes, bikes, inches, houses, taxes, plants

–s	–es
pencils	glasses
cats	lunches
lamps	bunches
bikes	boxes
houses	inches
plants	taxes

Open Sort

Teach the generalization for vowel digraphs (the first vowel in the pair is the long vowel sound). Give students a list of words that contain different vowel digraphs that represent the long *e* sound. Have them read each word, discuss the pattern, and sort by the digraph.

Sample word list: sheet, cheat, feet, neat, sheep, peek, speak, read, weak, week, meet, beach, fleet, peach

–ee	–ea
sheet	cheat
feet	neat
sheep	speak
peek	read
week	weak
meet	beach
fleet	peach

Meaning Morphs

Objectives

- Determine the meaning of general academic and domain-specific words or phrases as they are used in grade-level text.

- Use common, grade-appropriate Greek and Latin affixes and bases as clues to the meaning of a word.

Background Information

Meaning Morphs complement Word Morphs (page 35), extending students' application of morphology to meaning making. As students become more advanced readers, they acquire a large knowledge store of prefixes, suffixes, and bases. Using this to build vocabulary knowledge is highly effective. The *Meaning Morphs* chart is a fantastic way for students to learn individual words. They can add it to their Word Engineer notebooks (page 25) and use it to collect words they learn throughout the year. This strategy scaffolds students' independent use of morphological analysis. Students write unknown words on the chart, identify prefixes, suffixes, and bases, and use them as clues to the meaning, thereby using morphological analysis as a problem-solving tool. Instruction in morphological analysis supports vocabulary knowledge, particularly when it comes to complex words (Bowers, Kirby, and Deacon 2010; Crosson et al. 2021; Nagy, Carlisle, and Goodwin 2013).

Materials

- *Meaning Morphs* (page 80)
- text selection

Process

1. Distribute *Meaning Morphs* to students, or have them create the chart in their Word Engineer notebooks.

2. Ask students to pay attention to words they do not know as they read a text selection. Students can work independently or in pairs to record the unknown words. Students should examine no more than three words per reading selection.

3. After students have finished reading, demonstrate how to analyze a word for its parts using the *Meaning Morphs* chart.

4. Ask students to look up the meanings of any prefixes, suffixes, or bases they do not know. (Anchor charts providing some of this information are a useful resource.) Encourage students to guess the meaning of the words based on the clues provided by the word parts.

5. Discuss the words as a class, and ask students to explain the definitions they created along with their thinking.

6. Review the actual definitions as a class, comparing and contrasting them to students' guesses.

7. Have students use the strategy throughout the year in different content areas to reinforce and practice morphological awareness.

Differentiation

This strategy can be differentiated based on students' grade level and knowledge of morphology. For example, words chosen from fifth-grade texts will be far more complex than those from third grade and will contain more Greek and Latin derivations. Students with more novice skills may need scaffolding such as prefix/suffix definition charts or a focus on finding words containing base words and bound morphemes.

Meaning Morphs *Example*

Unknown Word	Bases	Prefixes	Suffixes	My Guess Definition
autobiography	bio (life) graph (write)	auto– (self)		To write about your own life
incredible	cred (believe)	in– (not)	–ible (capable of)	To not be able to believe
revival	viv (to live)	re– (again)	–al (process of)	The process of making someone come back to life

Name: _____ **Date:** _____

Meaning Morphs

Directions: Record unknown words from the text. Look up unknown prefixes, suffixes, or bases. Use the information to write each word's definition.

Unknown Word	Bases	Prefixes	Suffixes	My Guess Definition

Signal Sleuths

Objectives

- Acquire and use grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being and that are basic to a particular topic.

Background Information

Signal Sleuths is a strategy to enhance comprehension by identifying words that signal text structure. These "signal," or connecting, words show relationships between ideas and concepts, link ideas together, and indicate transitions from one idea to another. Knowledge of these words has a positive effect on reading comprehension because the words provide clues about how ideas are connected (August et al. 2020). Learning to recognize signal words and identify text structure helps readers monitor comprehension, make inferences and predictions, and focus on key concepts. Recognizing signal words also builds students' word consciousness by focusing attention on how and when words are used, along with their meanings. Students may need explicit instruction on signal words for each text structure prior to identifying them independently. Once students are familiar with signal words, they can independently hunt for and record the words while reading.

Materials

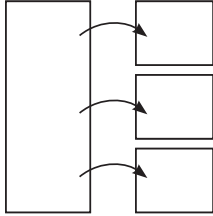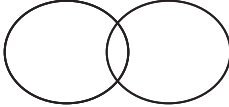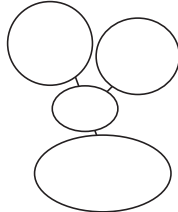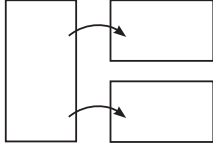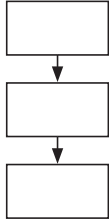- *Signal Sleuths* (page 99)
- text selection

Process

1. Select a section of text and identify its primary text structure. Be sure to select text that contains an easily identifiable pattern. Prepare a grade-level-appropriate list of the signal words associated with this text structure.

2. Provide students with copies of *Signal Sleuths*, or give them sticky notes they can use to make notes. Explain that authors use signal words to provide readers with specific clues about how a text will be organized and what information is most important.

3. Model how to identify signal words in the text, and then demonstrate how to annotate the text to highlight important ideas and information gleaned from the text pattern.

4. Ask students to read a section independently and make note of signal words in the section. When students are finished, ask them to share the signal words with partners.

5. Discuss how identifying signal words helps us understand what we are reading. Point out that learning signal words also helps us use different text structures when we are writing.

Differentiation

Students who need extra support will benefit from having a list of signal words for the specific text structure available as a reference while they read. Additionally, some students may benefit from breaking the reading into smaller sections and using a highlighter to mark the signal words. This activity can be extended by having students identify an appropriate graphic organizer for the text structure they identified.

Examples of Common Signal Words

Text Structure	Signal Words	Graphic Organizer
cause-effect	as a result, as a consequence, because, brought about, consequently, due to, for, in order to, led to, since, so, that is why, the effect of, the outcome was, the reason was, therefore	
compare-contrast	also, although, as opposed to, as well as, both, different, however, like, much as, not only…but also, on the contrary, on the other hand, same, similar(ly), too, yet	
description	all, for example, for instance, in addition, in fact, most(ly), some, specifically, such as, to illustrate, too	
problem-solution	answer, challenge, conclusion, dilemma, fortunately, issue, led to, one challenge, problem, question, solved, therefore, trouble, unfortunately	
sequence of events	after, before, during, eventually, finally, first, following, immediately, in the end, last(ly), meanwhile, next, now, then, when, while	

Signal Sleuths *Example*

Text Structure: Compare and Contrast

Page or Paragraph	Signal Words	What These Words Tell Me
1	But in science	This was contrasting the two meanings of the word power.
7	They both	The new solar generator and the older solar generator both use the sun for power.
8	Unlike older models	The new solar generator does not need full sun to make power the way the older ones did.

Name: _____ **Date:** _____

Signal Sleuths

Directions: As you read, look for signal words that connect ideas and give clues about the structure of the text. Explain how the signal words are used in the text.

Text Structure:_____

Page or Paragraph	Signal Words	What These Words Tell Me