

The background of the page is light blue and features various decorative elements. Scattered throughout are small stars and circles in shades of blue, yellow, and green. Some stars are solid, while others are outlines. At the bottom of the page, there are stylized waves in three colors: a dark blue base, a yellow middle layer, and a light blue top layer.

Research Base

Content Area Reading Sets (CARS)

Introduction

Since the early 2000s, many schools have increased their literacy blocks, hoping to improve literacy scores on both state and national tests. As a result, the time dedicated to content-area instruction (science and social studies) has decreased. (Teale, Paciga, and Hoffman 2007) Blending science and social studies content into the literacy block can have positive effects on students' comprehension, knowledge, and vocabulary. An added advantage is having engaging content for students to learn and practice literacy skills—basic skills like reading new words and more advanced skills like summarizing and drawing inferences. (Hwang et al. 2021) *Content Area Reading Sets*, which can be used in the literacy block or with science and social studies instruction, focus specifically on enhancing students' knowledge and vocabulary to help them become the best readers they can be.

Content Area Reading Sets bring these research insights into the classroom with carefully curated collections of texts aligned to science and social studies themes, providing multiple exposures to connected content. The sets are designed so teachers can immediately act on this evidence without having to create their own collections or search for thematically linked books.

A knowledge-rich curriculum is not about privileging certain students but about ensuring that all students—regardless of background—have access to the cultural and intellectual capital needed to engage fully in civic and professional life.

—Robert Pondiscio (2025)

The Importance of Background Knowledge and Vocabulary

Imagine trying to read a book about civil engineering without any knowledge of the topic. You could probably decode at least most of the words, but without background knowledge of civil engineering, how much would you really understand?

Now, think about a child in school who is learning about a topic in science or social studies, say butterflies. If that child has some background knowledge of butterflies—perhaps has seen a butterfly—they will have a starting point for understanding concepts about butterflies. If the child knows about relevant vocabulary such as *life cycle*, *larva*, *metamorphosis*, *habitat*, and *migration*, how much more information might the child absorb? With some knowledge of butterflies, how much easier will it be for that child to read and learn about moths and insects as well as the life cycles, migration, and habitats of other animals?

Skilled readers are able to decode words and make sense of printed text. They are able to take the words that the author writes and assign meaning based on their knowledge to comprehend the meaning. "Research has shown that in doing so, they fluidly coordinate many component skills, each of which has been sharpened through instruction and experience over many years." (Scarborough 2001)

To illustrate this point, Scarborough created a graphic known as the Reading Rope. The strands of the rope are divided into two sections—Language Comprehension and Word Recognition—shown separately before being woven together to make a complete rope. Background knowledge and vocabulary are two key strands of the Language Comprehension (upper) portion of Scarborough's Reading Rope.

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.)

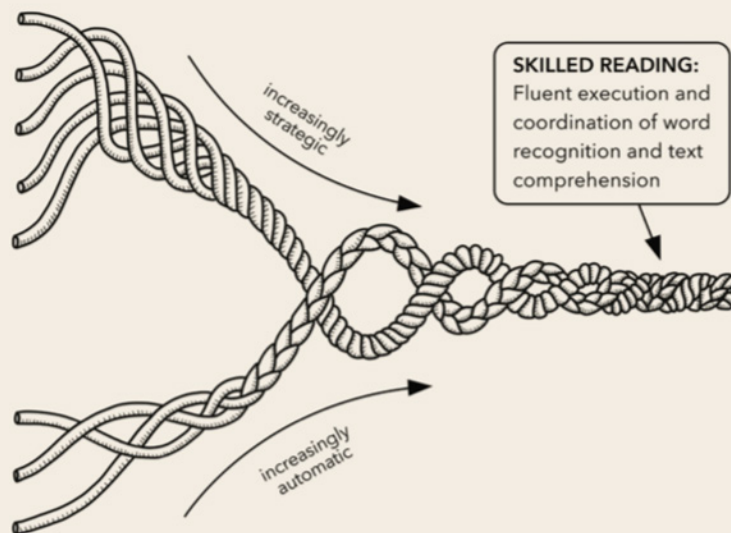
LITERACY KNOWLEDGE
(print concepts, genres, etc.)

WORD RECOGNITION

PHONOLOGICAL AWARENESS
(syllables, phonemes, etc.)

DECODING (alphabetic principle,
spelling-sound correspondences)

SIGHT RECOGNITION
(of familiar words)



The image, used with permission from the Publisher, originally appeared in the following publication: Scarborough, H.S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook of early literacy research* (Vol. 1, pp. 97-110). Guilford Press. Permission conveyed through Copyright Clearance Center, Inc.

Separating background knowledge from vocabulary is practically impossible. They are intertwined with one another—not to mention with other aspects of reading as shown literally in Scarborough's Reading Rope. Nevertheless, let's turn a lens on each one to understand how both are integral to reading comprehension.

By weaving together the critical elements of background knowledge and vocabulary through thoughtfully curated collections of whole-text books, Content Area Reading Sets help teachers strengthen students' comprehension in a way that aligns with how skilled reading develops.

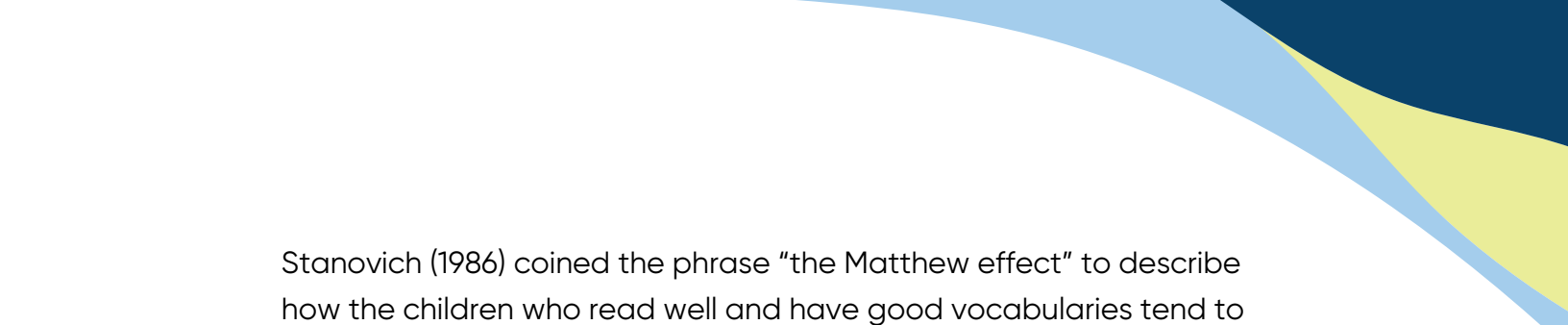
We bring knowledge to the comprehension process, and that knowledge shapes our comprehension. When we comprehend, we gain new information that changes our knowledge, which is then available for later comprehension.

—Nell K. Duke, P. David Pearson, Stephanie L. Strachan,
Allison K. Billman (2011)

Background Knowledge is Important...

Children arrive at school with varying levels of background knowledge and vocabulary. Possessing background knowledge is like having a set of hooks upon which to hang new learning. The hooks are also a way to organize information, relating it to previous experiences and making it easier to retrieve. Once there, the information can be moved around as more knowledge is added and new relationships are formed. (Hattie 2023)

Much of the background knowledge that children have when they come to school is from having been read to from an early age. The children who have been read to regularly have had exposure to different kinds of sentence structures, information, and words. These children have a good base (set of hooks, if you will) upon which to take on new information, ideas, and vocabulary. Some children have not been read to regularly and, therefore, have less experience (fewer hooks) with language structures, information, and vocabulary. These children have to work harder to make sense of the texts they read.



Stanovich (1986) coined the phrase “the Matthew effect” to describe how the children who read well and have good vocabularies tend to read more and therefore learn more vocabulary and end up reading even better than before. Children who do not read well—who work harder to read and are familiar with fewer words—tend to read less and therefore do not grow as quickly or deeply in their reading ability.

Content Area Reading Sets give all students access to rich, engaging texts that not only build hooks for future learning but also supply information to fill the hooks, thereby leveling the playing field.

A study known as the “baseball effect” (Recht & Leslie, 1988) showed that children are apt to read with more comprehension if they already have knowledge of the subject of the text. In the study, students were divided into groups based on their knowledge of the game of baseball and their reading ability. After reading about a baseball game and doing an activity, the less skilled readers who knew quite a bit about baseball outperformed the more skilled readers who did not know about baseball on a test of reading comprehension.

This and other studies have shown that comprehension of texts related to topics with which students have prior knowledge is greater even for students who are thought not to be strong readers. “Of course, students’ comprehension and learning is [sic] also influenced by their reading skills (such as decoding and fluency). But even the advantage of strong reading skills turns out to be greatest for students with strong domain knowledge.” (Adams 2011)

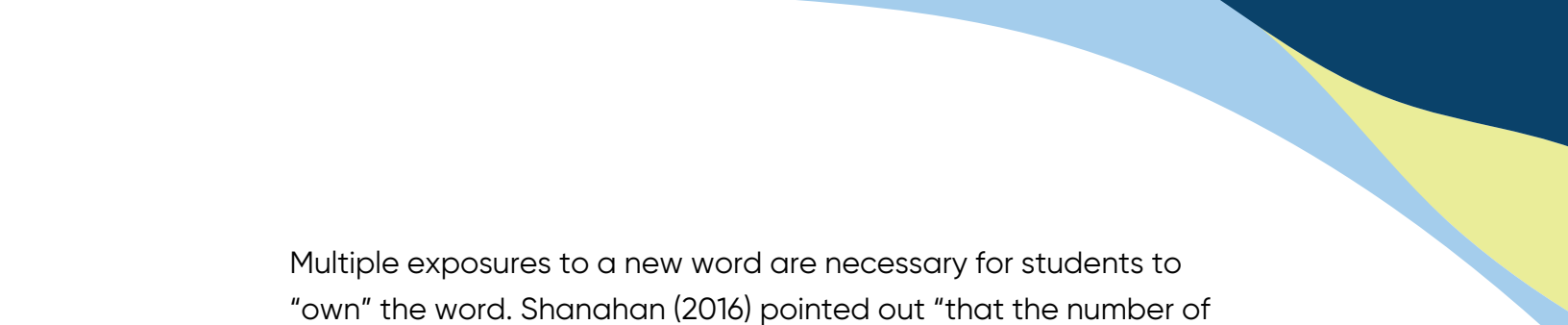
... and so is Vocabulary

It is through words that we learn. Words represent the ideas of any knowledge that we learn, so it's unsurprising that the relationship between knowledge and vocabulary is a close one. Understanding vocabulary is essential for reading comprehension and learning new knowledge.

But learning every individual word necessary for learning would be an overwhelming task. Teachers can play an important role here by teaching key words prior to having students read a text. Going back to the example about butterflies, if students are taught vocabulary such as cycle, migration, and habitat, they have a head start when reading about other kinds of cycles (life, bi-, motor-), animal or human migration, and other types of habitats. In addition to learning the meanings of words, the students might also become aware of different forms of words (migrate, migrating), synonyms and antonyms (migrate → move, relocate, travel; stay, remain), and related words (cyclone, recycle). (Hadley, Dickinson, Hirsch-Pasek, and Golinkoff 2019; McKeown and Beck 2014) —Keith Stanovich (1986)

If the development of vocabulary knowledge substantially facilitates reading comprehension, and if reading itself is a major mechanism leading to vocabulary growth— which in turn will enable more efficient reading—then we truly have a reciprocal relationship that should continue to drive further growth in reading throughout a person's development.

—Keith Stanovich (1986)



Multiple exposures to a new word are necessary for students to “own” the word. Shanahan (2016) pointed out “that the number of repetitions needed to learn a word is about 10–15 times, with lots of variation—among kids and words.” In other words, poor readers may require many more exposures to a word than a stronger reader. Reading various texts, writing, and talking about a theme or topic over a period of time gives students a chance to absorb the concepts and vocabulary because they encounter some of the same words multiple times and in different contexts—two key components of taking on new vocabulary. (McKeown and Beck, 2014)

Each Content Area Reading Set has a variety of thematically themed, whole books for students to hear and read over time—eight books for reading aloud plus twelve books in sets of six for small group, partner, and independent reading. In addition, Content Area Reading Sets provide a student response sheet called Learning New Vocabulary to help students solidify their knowledge of new words through writing and drawing.

The more background knowledge one has, the more vocabulary one can learn. The more vocabulary one knows, the greater the comprehension of new concepts leading to more background knowledge. Background knowledge, vocabulary, and comprehension create a cycle of their own, a virtuous cycle.

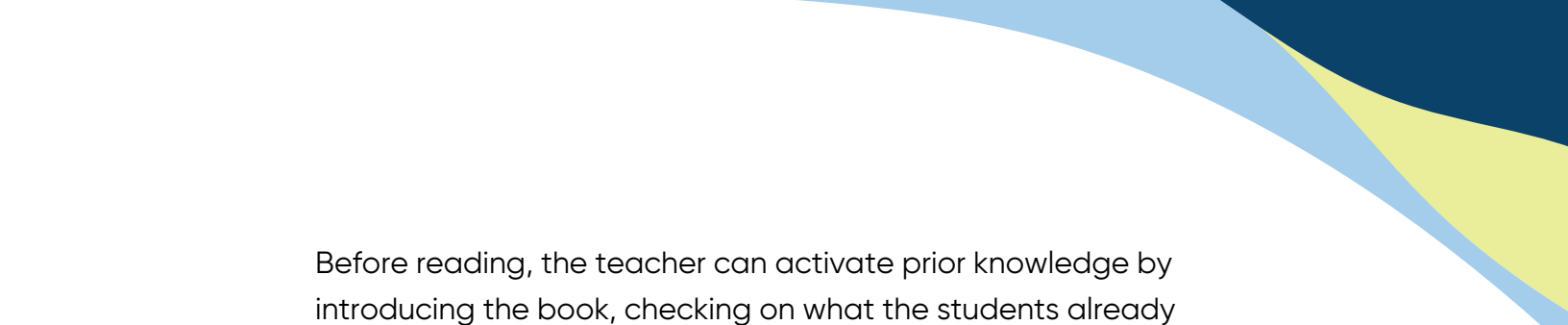
Reading aloud, a common instructional strategy, is one widely researched context that is rich with opportunities for teaching vocabulary.

—Nell K. Duke et al. (2011)

The Power of Reading Aloud

Reading books aloud to students is a productive way to introduce concepts, ideas, and vocabulary that are more complex than what they would encounter in their independent reading. Reading aloud has multiple advantages for students of all ages. Not reading aloud regularly to students means that they will not have the benefits of rich experiences with different ideas and vocabulary. ("Gen Z Parents Not Reading to Children Alarms Experts," Newsweek, June 7, 2025)

When a teacher reads a book aloud to the class, the solitary act of reading is made social. Sharing a book together makes the read-aloud experience not only more informational but also more engaging and more motivational. ("Helping Students Access Complex Knowledge from Texts," ASCD blog, March 14, 2023) In addition to hearing the book, students benefit from discussing the book before, during, and after reading. (Foorman et al. 2016) These discussions help students construct new knowledge as well as enhance their skills in critical thinking, listening, and speaking.



Before reading, the teacher can activate prior knowledge by introducing the book, checking on what the students already know about the topic, asking what students notice or wonder about the topic, and teaching key vocabulary.

During the read aloud, the teacher might point out features of the text, ask questions, share noticings, highlight the pre-taught vocabulary, and elicit students' own noticings. The teacher can also model what might go on in a reader's mind to help students know that active thinking is part of the reading process. (Shanahan et al. 2010)

After reading, the teacher can help deepen students' understanding of the text and reinforce key vocabulary. Reviewing vocabulary, summarizing the text, discussing themes and messages, and connecting to other texts and the world all contribute to enriching the read-aloud experience.

Content Area Reading Sets make read-aloud instruction simple and enriching by providing eight thematically aligned trade books per set. Accompanying teacher resources make it easy to implement research-based reading practices.


In sum, once kids can decode fluently reading comprehension depends heavily on knowledge. By failing to provide a solid grounding in basic subjects we inadvertently hobble children's ability in reading comprehension. As I have put it elsewhere, Teaching Content IS Teaching Reading.

—Dan Willingham (2012)

Content Area Reading Sets Build Knowledge and Vocabulary

In recent years, the “science of reading” has had a great deal of attention. Often, the interpretation of that phrase has been interpreted as a laser-like focus on foundational literacy skills. Without a doubt, foundational literacy skills are necessary if students are to become strong, proficient readers.

However, “building knowledge of the natural and social world is also essential to developing strong readers who can not only decode words but also comprehend what they are reading.” (“Looking to Research for Literacy Success,” ASCD blog, February 28, 2023) Reading, discussing, and writing about content-area texts broadens students’ knowledge of the world and expands students’ vocabulary while also providing contexts for building foundational literacy skills.



Several types of student response sheets, available in the online resources for Content Area Reading Sets, provide an efficient way for teachers to help their students process the information they are learning.

Content Area Reading Sets support standards-based instruction by building domain knowledge on topics covered in NGSS and C3, helping students meet grade-level content goals while strengthening their literacy skills. Because the topics and themes are correlated to standards, they are likely to be relevant to students because they are already part of their science, social studies, or English language arts instruction.

Content Area Reading Sets turn decades of reading research into daily practice, giving educators the tools to build students' knowledge, vocabulary, and comprehension in a standards-aligned, practical way. Content Area Reading Sets fill an important need in today's classrooms. If students are to be able to read widely and think critically, they will need a solid foundation of knowledge and vocabulary on which they can continually build. Content Area Reading Sets will launch them on their way.

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