Thinking Maps and the Science of Reading

Using Thinking Maps to Support Word Recognition, Language Comprehension and Skilled Reading

Thinking Maps is a research-based approach to teaching and learning that can be used to support a variety of evidence-based practices…including the body of work known as the science of reading. The eight visual Thinking Maps align to cognitive processes that underlie information processing and learning in all four language domains: listening, speaking, reading and writing. They can be used in a variety of ways to enhance evidence-based reading instruction, including both word recognition and language comprehension.

What Is the Science of Reading?

The science of reading is not a specific program, but rather a body of research around how children learn to read and the teaching methods that support the development of skilled, fluent readers. Drawing on cognitive science, linguistics, neuroscience and educational theory, the science of reading points to evidence-based approaches to reading instruction that have been proven to raise reading achievement. Science of reading research has been used to inform standards and curricula for reading instruction which are now encouraged or mandated in many states.

While the science of reading continues to evolve with new evidence, there is broad agreement among researchers that reading is not a single skill, but rather a set of skills that must be exercised in tandem during fluent reading. One well-accepted model for understanding the process of reading is Scarborough's Reading Rope, developed by Dr. Hollis Scarborough in the late 1990s. This model breaks down the reading process into two strands, each made up of smaller strands (see image). These include:

- **Word Recognition:** The ability to accurately and fluently recognize words, including decoding unfamiliar words and recognizing sight words. Word recognition skills rely on phonological awareness, phonics, and orthographic knowledge.
- **Language Comprehension:** The understanding of spoken and written language, including vocabulary, background knowledge, syntax, verbal reasoning, and literacy knowledge. Language comprehension skills are crucial for making meaning from text.
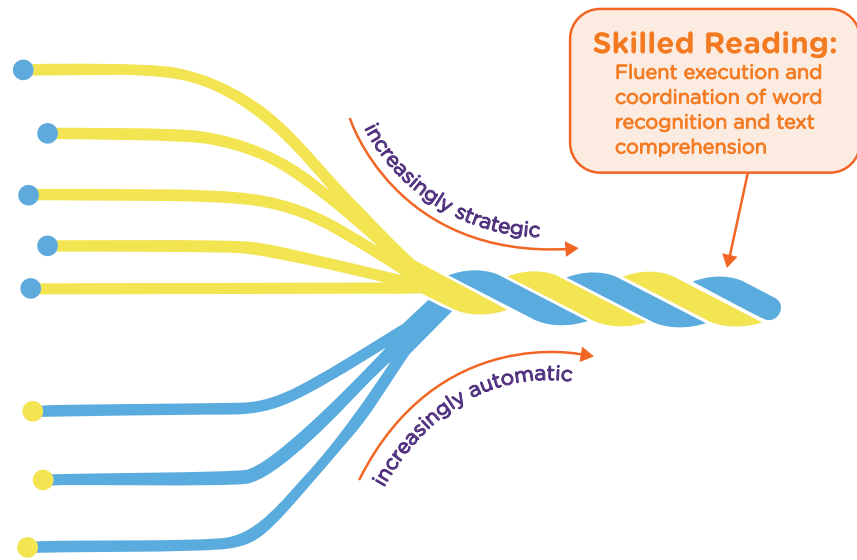
THE MANY STRANDS THAT ARE WOVEN INTO SKILLED READING

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, etc.)

SIGHT RECOGNITION
(of familiar words)

increasingly strategic

increasingly automatic

Skilled Reading:
Fluent execution and coordination of word recognition and text comprehension

Based on "Scarborough's Reading Rope": Scarborough, H. S. (2001).[1]

Thinking Maps and the Science of Reading

Thinking Maps is a shared visual language for learning that can be used to support all of the other tactics and curricula teachers are using for reading instruction. It is not an "extra" thing to implement in the classroom, but rather a supportive tool that can be fully integrated with other evidence-based practices aligned with the science of reading. Thinking Maps can give teachers and students a framework to support each of the strands of the "Reading Rope."

Thinking Maps can be used at all levels of reading instruction, from Pre-K through high school.

- For early reading instruction, Thinking Maps provide a visual means to explore phonemes, morphemes, and words to support phonics instruction as well as sight word recognition. Early readers, with help from teachers, can also use Thinking Maps to define words, explore relationships between words, understand sentence structure, and support comprehension of reading passages.

- As students progress through the grade levels, they learn to use Thinking Maps in increasingly sophisticated ways to build vocabulary, analyze text structures and features, build background knowledge, and facilitate comprehension of written material. Thinking Maps act as "conceptual nets" to help students analyze and process complex texts, supporting language comprehension.

- Students also learn to use the Thinking Maps Frame of Reference questions to activate metacognition, consider points of view and sources of information, and draw conclusions from written text—all important aspects of building background knowledge, comprehension and verbal reasoning.

- The Thinking Maps program *Write from the Beginning...and Beyond* develops student writing skills across the curriculum; this also reinforces reading by supporting vocabulary growth, understanding of text structure, metacognitive awareness, grammatical proficiency, critical thinking, and active engagement with text.

- *Path to Proficiency* has additional strategies for building literacy skills and differentiating instruction for students with different language learning needs.

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[1] 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 for research in early literacy (pp. 97–110). New York, NY: Guilford Press

What Are Thinking Maps?

Thinking Maps is a whole-school, brain-based approach to teaching and learning designed to build the foundational critical thinking, problem solving, comprehension, and communication skills necessary for academic success. The eight Thinking Maps, which correlate to core cognitive processes, provide a shared visual "language for learning" that is used across all grade levels and content areas to improve academic outcomes for students of all backgrounds and ability levels.
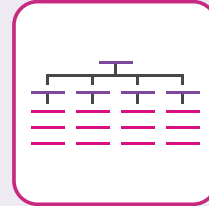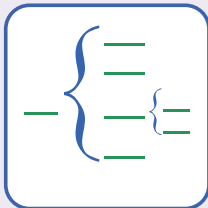
Circle Map
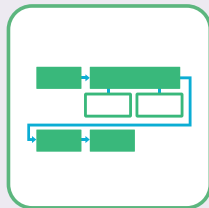Defining or Brainstorming
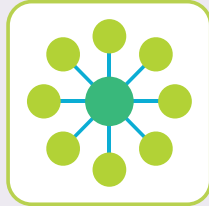
Bubble Map
Describing with Adjectives
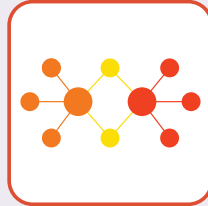
Double Bubble Map
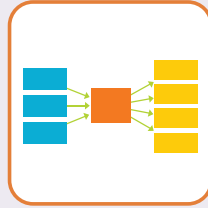Comparing and Contrasting

Tree Map
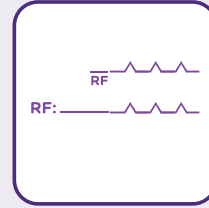Classifying

Brace Map
Part-To-Whole

Flow Map
Sequencing

Multi-Flow Map
Cause and Effect

Bridge Map
Seeing Analogies

Thinking Maps and Word Recognition

The visual nature of Thinking Maps makes them highly useful for teaching, practicing and reinforcing word recognition skills, including phonemic awareness, sight recognition, word analysis and decoding.
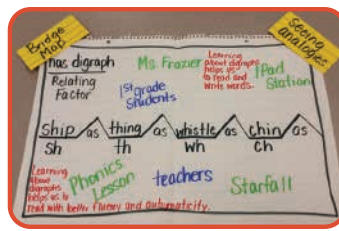
Word Recognition

Phonological Awareness

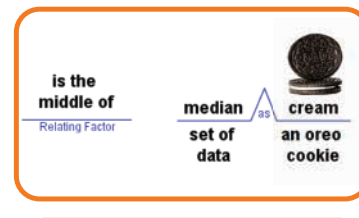Classify words by starting or ending phonemes, brainstorm words starting with the same sound
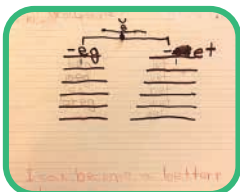
Decoding

Break words into component morphemes, explore rhyming words, define a process for decoding
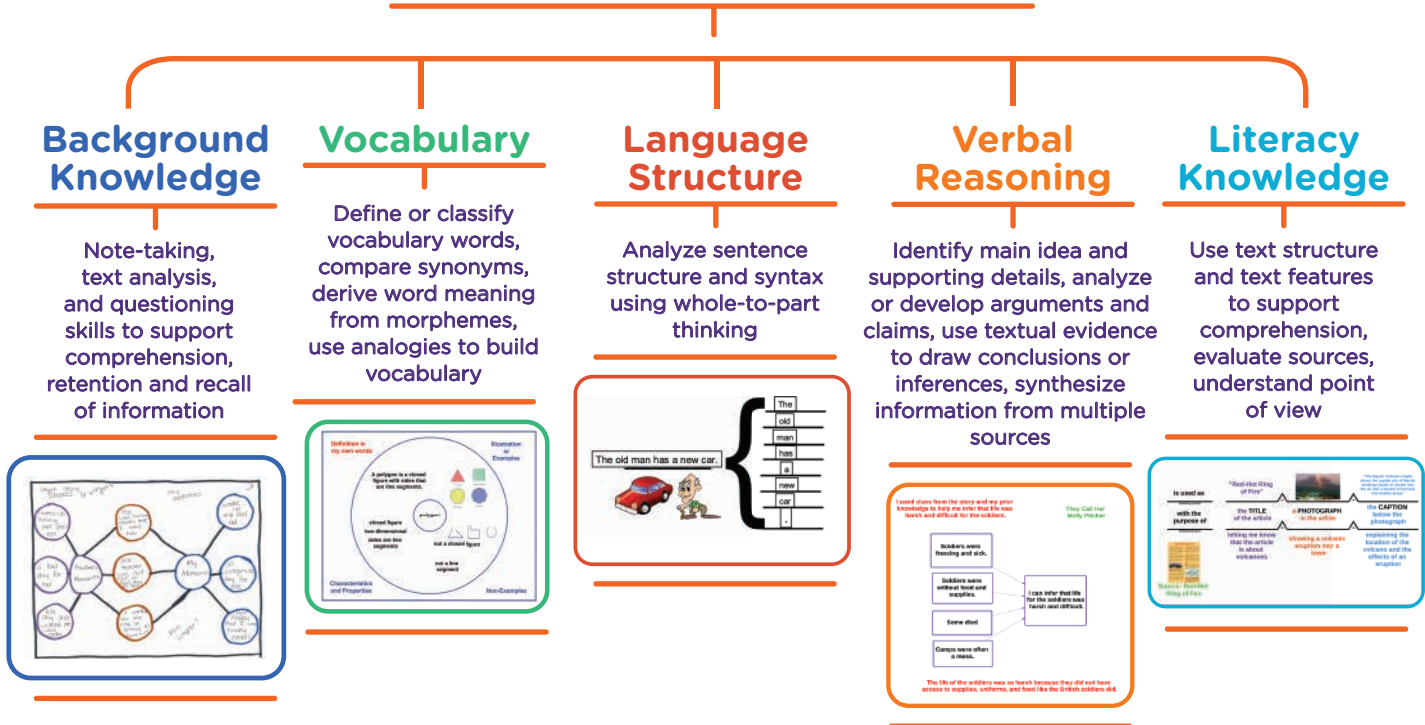
Sight Recognition

Use familiar words as the basis of learning more difficult words

Thinking Maps and Language Comprehension

Thinking Maps are uniquely suited to support all of the elements of language comprehension, including building background knowledge, developing verbal reasoning skills, and understanding and analyzing text at the sentence, passage or whole book level. The visual tools help students organize, analyze, and make connections with language and text. As students become proficient in the use of Thinking Maps, they are also developing the critical skills that underlie language comprehension.

Language Comprehension

Background Knowledge

Note-taking, text analysis, and questioning skills to support comprehension, retention and recall of information

Vocabulary

Define or classify vocabulary words, compare synonyms, derive word meaning from morphemes, use analogies to build vocabulary

Language Structure

Analyze sentence structure and syntax using whole-to-part thinking

Verbal Reasoning

Identify main idea and supporting details, analyze or develop arguments and claims, use textual evidence to draw conclusions or inferences, synthesize information from multiple sources

Literacy Knowledge

Use text structure and text features to support comprehension, evaluate sources, understand point of view

Want to know more about Thinking Maps and literacy instruction?

Talk to your Thinking Maps representative about your literacy goals. We can help you develop a training plan to address student needs in reading comprehension, writing, literary analysis, response-to-text, and other key literacy skills.

Contact your Thinking Maps representative to learn more.

https://www.thinkingmaps.com/find-your-rep/   1-800-243-9169