



**Reading Assist**



**Bridging Young Readers  
to Forever Readers**  
(SOMLA) 2024 CONFERENCE

# Science of Reading

## Part 1 What is the Science of Reading?

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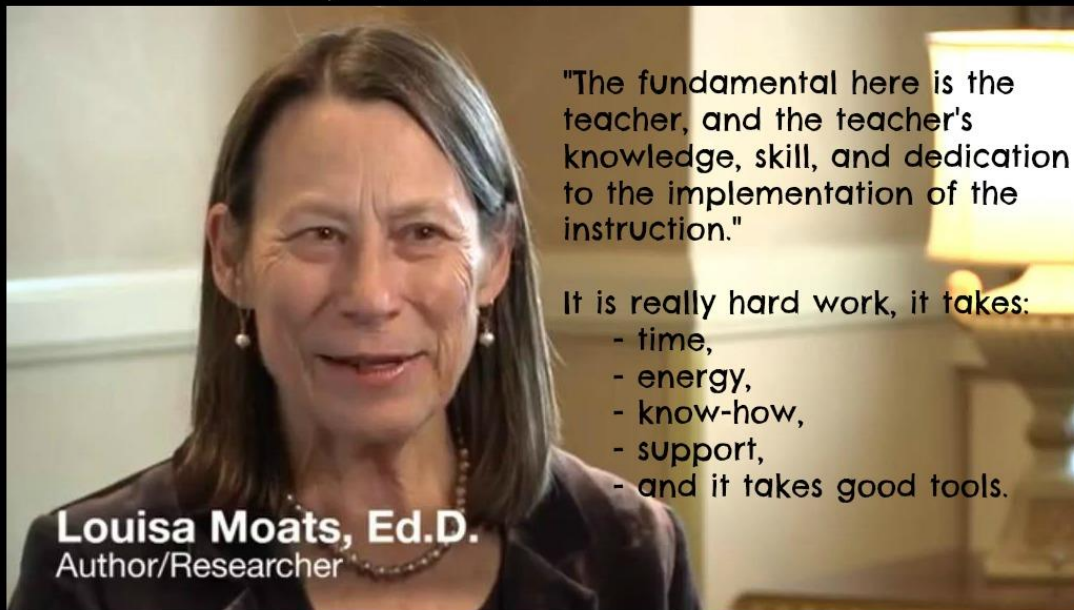
[readingassist.org](http://readingassist.org)



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It's  
YOU!

**Teachers, not programs, teach children to read.**



"The fundamental here is the teacher, and the teacher's knowledge, skill, and dedication to the implementation of the instruction."

It is really hard work, it takes:

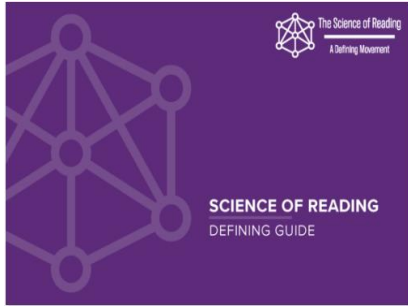
- time,
- energy,
- know-how,
- support,
- and it takes good tools.

**Louisa Moats, Ed.D.**  
Author/Researcher





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## Let's begin with a definition

SoR is a vast, interdisciplinary body of **scientifically-based research about reading and issues related to reading and writing**. This research has been conducted over the last **five decades across the world**, and it is derived from **thousands of studies** conducted in multiple languages. The science of reading has culminated in a preponderance of evidence to inform **how proficient reading and writing develop; why some have difficulty; and how** we can most effectively **assess and teach** and, therefore, **improve student outcomes** through prevention of and intervention for reading difficulties.

<https://www.thereadingleague.org/what-is-the-science-of-reading/defining-guide-ebook/>





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## From Louisa Moats

“The body of work referred to as the “science of reading” **is not an ideology, a philosophy, a political agenda, a one-size-fits-all approach, a program of instruction, nor a specific component of instruction.** It is the emerging **consensus** from many related disciplines, based on literally thousands of studies, supported by hundreds of millions of research dollars, conducted across the world in many languages. These studies have revealed a great deal about how we learn to read, what goes wrong when students don’t learn, and what kind of instruction is most likely to work the best for the most students.”



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So, how was this large body of research distilled into the skills necessary to learn to read?

# Simple View of Reading and “The Big 5”

**Decoding**

**X**

**Language  
Comprehension**

**=**

**Reading  
Comprehension**

1. Phonemic Awareness  
2. Phonics


**X**

3. Vocabulary &  
Oral Language

**=**

4. Reading  
Comprehension

5. Oral Reading Fluency




Phonemic Awareness

Knowledge of, and capacity to manipulate the smallest distinct sounds (phonemes) in spoken words.




Phonics

Learning and using the relationship between sounds and their letter-symbols to sound out (decode) written words.




Fluency

The ability to read accurately, quickly, and expressively. Fluent readers are able to focus on reading for meaning.



Vocabulary

The words readers need to know to comprehend and communicate. Oral vocabulary: words recognized and used in listening and speaking. Reading vocabulary: words recognized or used in reading and writing.



Comprehension

Extracting and constructing meaning from written text using knowledge of words, concepts, facts, and ideas.

Take a moment and read these words.

Can you read them out loud?

ЧТЕНИЕ ИНТЕРВЕНЦИИ

$$0 \times 1 = 0$$

**Decoding x Language Comprehension =  
Reading Comprehension**





The snables tramped the mengs to the dwip.

The dwip fropped. The mengs clambled a sib

boogle. The snables gicked and gicked.

$$1 \times 0 = 0$$

**Decoding x Language Comprehension =  
Reading Comprehension**





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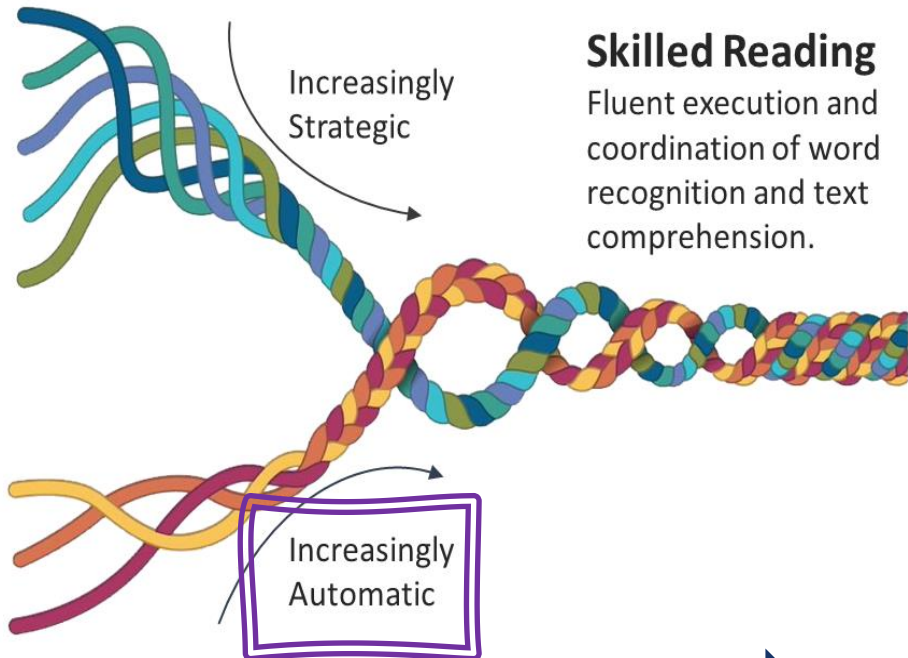
Decoding x Lang. Comp.  
= Reading Comprehension

## Language Comprehension

- Background Knowledge
- Vocabulary Knowledge
- Language Structures
- Verbal Reasoning
- Literacy Knowledge

## Word Recognition

- Phonological Awareness
- Decoding (and Spelling)
- Sight Recognition



Scarborough, H. 2001. Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and

**TIME ! AND PRACTICE.**

## LANGUAGE COMPREHENSION:

- ❖ **Background Knowledge:** a person's background knowledge, is a collection that has been formed from all of life's experiences. We **ALL** bring diverse bits of background knowledge—consciously or subconsciously—to every subsequent experience, and we use them to connect or glue new information to old. Background knowledge is an essential component in learning because it helps us make sense of new ideas and experiences.
- ❖ **Vocabulary:** Vocabulary is the knowledge of words and word meanings: the definition, but also how that word fits into the world. Vocabulary development is learned through both direct instruction as well as indirectly through exposure to a variety of texts.
- ❖ **Language Structures:**
  - **Syntax** is the set of rules, principles, and processes that govern the structure of sentences in a given language, usually including word order. Sentences have a subject/ predicate....etc.
  - **Semantics** is the meaning or interpretation of a word, sentence or other language form. An example of this is the word **bolt**.
- ❖ **Verbal Reasoning**
  - **Inference** is a conclusion or opinion formed from known facts and evidence.
  - A **metaphor** is a figure of speech that describes an object or action in a way that isn't literally true, but helps explain an idea or make a comparison.
- ❖ **Literacy Knowledge**
  - **Print Concepts** is the understanding that print carries meaning, that books contain letters and words. It also includes an understanding of what books are used for and how a book "works": how to turn pages, how to find the top and bottom of a page, and how to identify the title and the front and back covers.
  - **Genre** means a type of art, literature, or music characterized by a specific form, content, and style. Literature has four main genres: poetry, drama, fiction, and non-fiction.
- ❖ **Attention:** Is the student able to focus on information and hold it in memory to determine meaning and comprehend it.

**WORD RECOGNITION** is the act of seeing a word and recognizing its pronunciation immediately and without any conscious effort.

**Phonological awareness, decoding, and sight recognition.**

- **Phonology** is the sounds of spoken language~ contrast with auditory skills which refers to ALL the sounds we hear.  
- Phonemes are oral: The word cat has three sounds: /c/ /a/ /t/
- **Decoding** or word identification can mean reading a word, regardless of whether the word was sounded out, guessed or recognized from memory. It is also used to distinguish the word reading aspect from comprehension aspect.
- The **Alphabetic principle** simply stated is when a student makes the connection that the sounds we make when we say words are connected to letters. **Phonics is the instructional practice** used to teach how sounds of speech in the English language are connected to letters and letter clusters. (sh, oa, igh)
- **Sight recognition** or word recognition is the instant recognition of familiar words. No sounding out required.



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# Reading is not natural

- Learning to speak is natural.
- Spoken language has become “hard-wired” in the brain with structures built specifically for language
- There are no naturally designated neural pathways for reading.
- The brain must co-opt structures designed for other purposes to enable reading to take place.



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## Everyone Learns To Read In The Same Way...

- **Sounds & Letters** (phonemes & graphemes)  
Learning to hook sounds to letter names
- **Phonic Decoding**  
Combining letter sound knowledge with phonological  
blending to sound out unfamiliar words
- **Orthographic Mapping**  
Expanding a readers sight vocabulary



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Which of these provides the greatest likelihood that a student will learn to read?

- Reading to children
- Having lots of books in the home
- Being exposed to explicit, systematic instruction
- Waiting until the child is ready to learn
- Matching instruction to the student's style of learning



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# Science of Reading

Part 2 What instructional changes can  
you make?

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## How do students become fluent readers and writers?

They develop a large **sight word** vocabulary





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## But really, what is a sight word?

- Any word that you automatically recognize
- Literate adult is able to recognize 30,000 – 70,000 words and word parts
- Impossible to consciously memorize each of these words as a whole



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## Words become sight words through Orthographic Mapping

- Learning the sound/symbol correspondences
- Paying attention to the sequence of graphemes
- Blending the corresponding phonemes into whole words **cat** /k/ /a/ /t/ 
- Getting **LOTS of practice** so the sequences become unitized and words can be recognized instantly



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# What can you do?



Small Changes  
Can Change Everything.



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## Abandon the 3-cueing system

- » *“Use the picture and think about what makes sense.”*
- » *“Skip the word and go on.”*
- » *“Try a word that might make sense.”*

These strategies take the students’ attention away from the structure of the words



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# Encourage decoding

## Continuous Sound Blending:

Students stretch sounds together beginning at first sound and moving through to end sound without stopping. The Sounds are recoded to make the whole word.

map      fit      sun



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# Discourage Guessing!

Decoding Dragon keeps the Guessing Monster away!



- Don't guess!
- Sound the word all the way through.
- Keep track with your finger.
- Break long words into syllables.



Artwork by Ailsa Dunnachie-Young (c) Lyn Stone 2019 [www.lifelongliteracy.com](http://www.lifelongliteracy.com)

Lyn Stone



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## Break long words into syllables

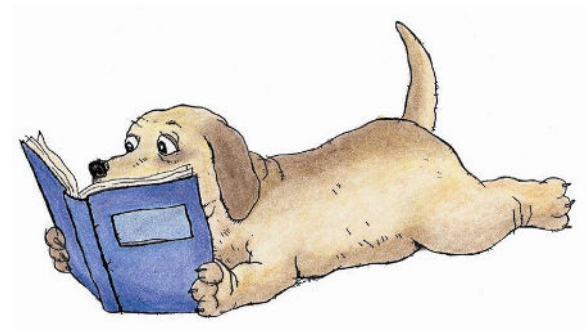
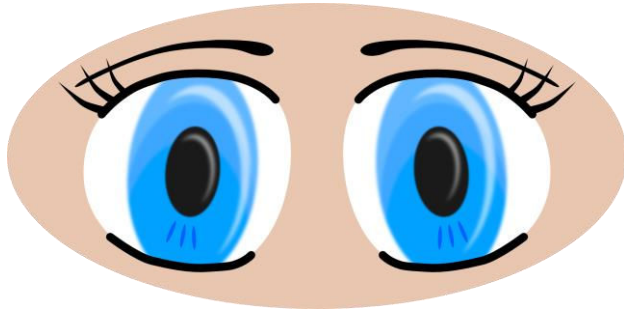
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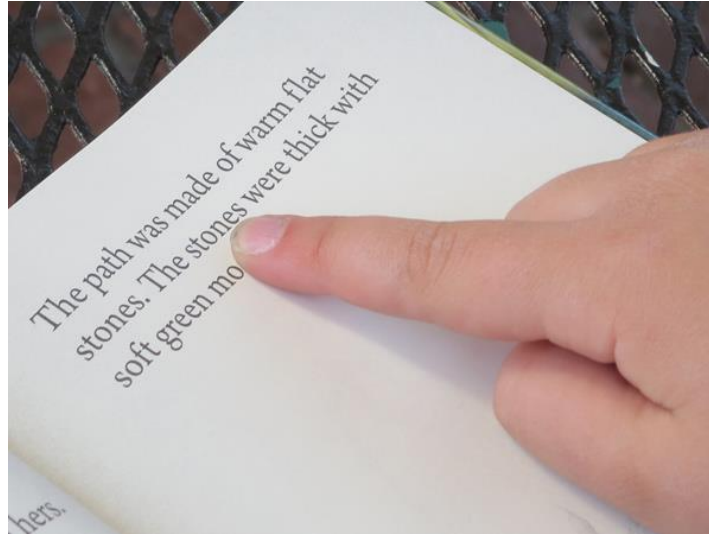
# Eyes on the Words





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# Encourage Finger Tracking



# Teach Key Words and Hand Signals for “Short” Vowel Sounds



a



e



i



o



u



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## Practice Reading Look-Alike Words

gland	gloat	great
graft	grant	grist
grind	grand	glad



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# Truths about Fluency

- It's **not** all about speed – rate is correlated with comprehension, but it's not the whole story – **Accuracy** comes first!
- But accuracy alone is **not** enough – It's very important, but a certain level of automaticity measured by rate is also necessary for comprehension.
- Sustained silent reading and independent reading **will not** improve accuracy and automaticity – benefits good readers but struggling readers are most likely misreading a lot of words if they are even really trying to read.

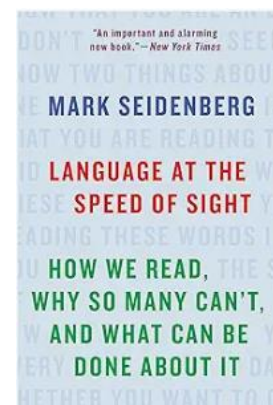
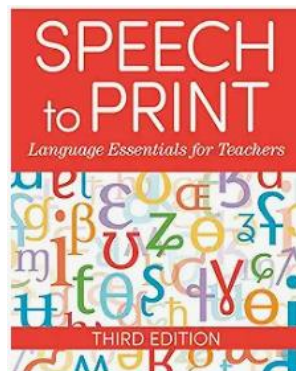
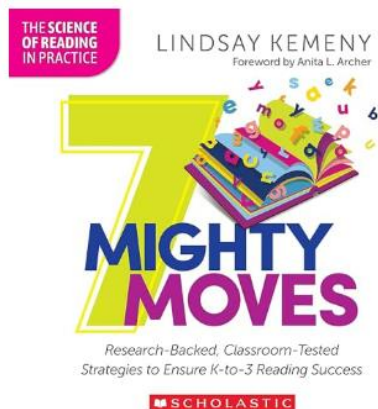
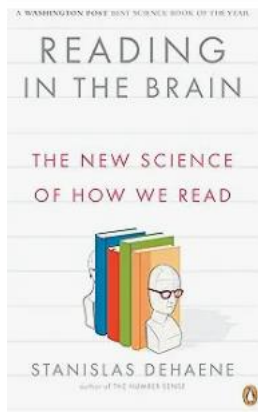
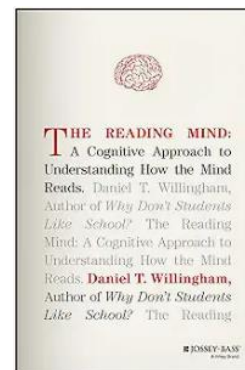
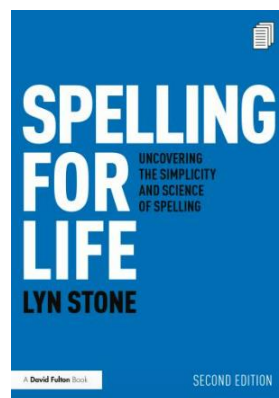
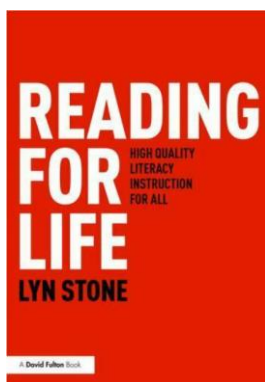
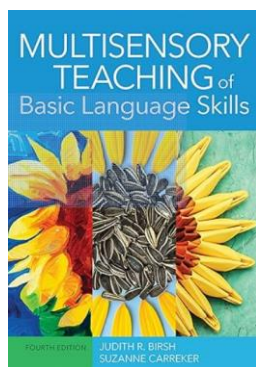
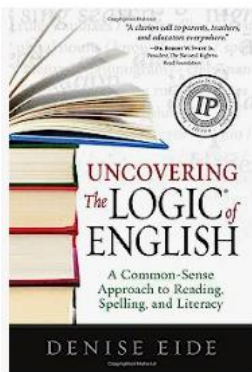


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# Chaining



sat → sit → sip → tip → top



Use this QR code for a link to the resources mentioned today.



[www.readingassist.org/resources](http://www.readingassist.org/resources)