What is the Science of Reading?

The Basics for Families

The science of reading is a growing collection of information from research that shows how people's brains best learn to read and write.

Scientists of all kinds (education, neuroscience, speech-language, and more) have explored how people learn to read *and* tested the best way for teachers to teach reading and writing.

How does the science get used within schools?

Schools in Ohio are required to select from a set of approved materials to teach reading that are based on this collection of research. When students are struggling with reading, there are additional materials and strategies that schools can use to support them. Want to know more? Read the Ohio Revised Code (Ohio Law) 3313.6028 and you can find the list of Approved English Language Arts core curriculum and instructional materials from the Ohio Department of Education and Workforce's website.

What do students need to be taught, according to this research?

- To hear the sounds and syllables in spoken words
- Letter names, how to write letters, and letter-sound relationships
- How to sound-out words
- How to use the sounds within words to spell them
- How words are used to build sentences (grammar)
- How ideas can be organized in paragraphs and longer readings and writings
- Word meanings using word parts (prefixes, bases, suffixes)
- Unfamiliar words to boost vocabulary
- Ways to get the most meaning out of longer readings

To be fluent readers and writers, students should be taught reading and writing directly from the teacher, in an ordered way that teaches basic skills first. We know that new skills for reading should be introduced one at a time, with lots of chances for students to practice the skills they have already learned. We call this way of teaching reading and writing Structured Literacy.

Why is reading a challenge for some kids?

Learning to speak is natural for most of our brains. It happens without specific teaching. Our writing system is an invented code and is not natural for our brains to learn. Our writing system uses letters as symbols to represent the sounds in speech. We must be taught how the symbols, when put together, build words and represent meaning. Good reading instruction helps to connect the spoken language areas of our brain to the areas that identify symbols (letters) in the visual area. With enough practice, a network forms in the brain that allows us to see a written word and rapidly know both its meaning and how it is pronounced. Learn about dyslexia, which can affect learning to read for up to 1 in 5 people.

Why do schools, parents, and others who support reading and writing development all need to be paying attention to the science of reading?

In the past, colleges and universities did not teach all teachers the science of reading. They often taught teachers to provide reading instruction using other methods like Balanced Literacy or Whole Language. Some large companies that were writing the curriculum for schools also told schools to use materials that were not based in science, for many years. As a result, many families had to pay for expensive tutoring and testing outside of the school system to figure out why their children could not read, especially if their child was dyslexic.

In Ohio and most other states, laws and policies have been put in place so that schools will teach reading based on the science of reading. Teachers are provided with training and resources to make sure they are following the science when they teach reading, in all subject areas. But, there are still many materials and teaching methods being used that do not follow the science.

What the science of reading is not

- Just a fad or trend that will come and go, or fade away
- A particular program or curriculum
- Limited to phonics or letter-sound relationships

Signs that the science of reading is not being used

- When a school is not using a structured approach to teach specific reading and writing skills over time, with lots of chances for students to practice.
- Telling a child to read a word based on pictures, or the story, or the first letter only.
- Asking students to read with cues such as “Does it look right?”; “Does it sound right?”; “Does it make sense?”; “Does the word look like another word you know?”
- Assuming a child will figure out how to read and spell through reading more on their own or being read to without teaching them how to read words.
- Drawing shapes around words.
- “Brain-based” exercises such as “crossing the midline.”
- Vision therapy and using colored overlays.
- Telling a child to memorize whole words.
- Testing a child’s reading skills with tools that rely on the three-cueing system such as running records/reading records.
- Focusing on “loving reading” without teaching a child *how* to read.
- Having students read books with unscientific “levels” (sometimes called Leveled Readers) instead of books they can practice reading based on the exact skills they have already learned.

The Ohio Statewide Family Engagement Center partnered with the Ohio Department of Education and Workforce and Ohio families to develop this information.

Ways to learn more

1. Watch a science of reading video 
2. Ask your school specific questions and advocate 
3. Find more resources for parents on the Ohio Statewide Family Engagement Center's website 
4. Email your questions about this information to ReadOhio@education.ohio.gov.

March 2025