# Current Research and the Reading Crisis

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Iowa State Special Education Conference
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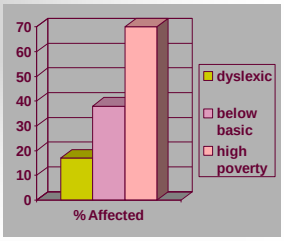
## Who Are We Concerned About?

- 11-17 % of children are dyslexic
- 33% are "below basic" in reading nationally (NAEP) at 4th grade
- 70-80% of high poverty kids

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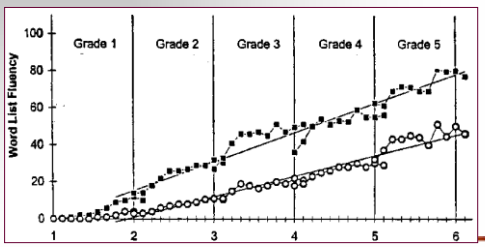
## Reading Trajectories Are Established Early (Torgesen; Foorman; Vellutino; Malfese)

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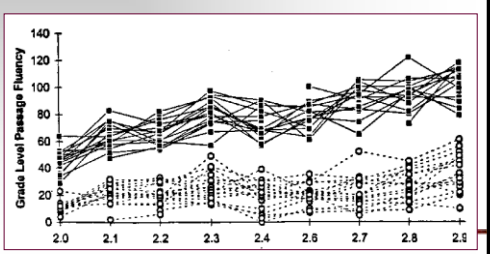
## Children Rarely "Catch Up" On Their Own (Fletcher; Foorman; Juel; Mehta; Good)

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## Early Identification is Critical

Dynamic Indicators of Basic Early Literacy Skills (DIBELS Next)
AIMSweb
Texas Primary Reading Inventory (TPRI)
Predictive Assessment of Reading (PAR)

- efficient
- inexpensive
- powerful predictors of later reading

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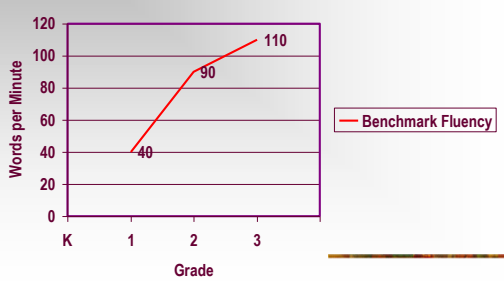
## CCSS: Read with sufficient accuracy and fluency to support comprehension.

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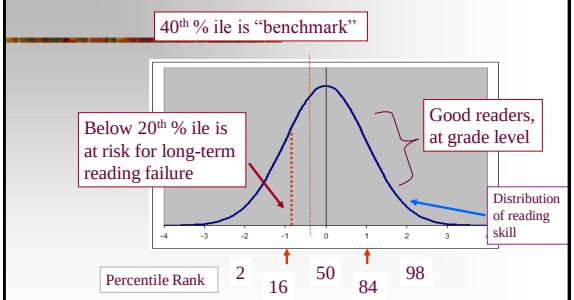
## ORF: An Excellent Long-Term Predictor

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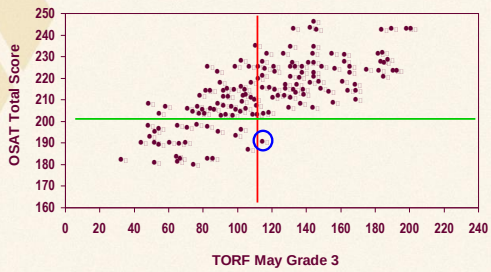
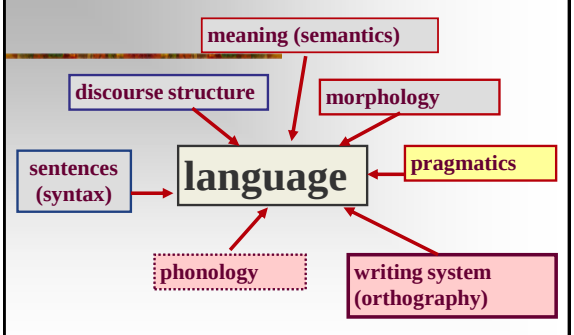
## Screeners Predict End-of Year (Outcome) Test Results




## "Reading builds on language…" (Perfetti, 2011)

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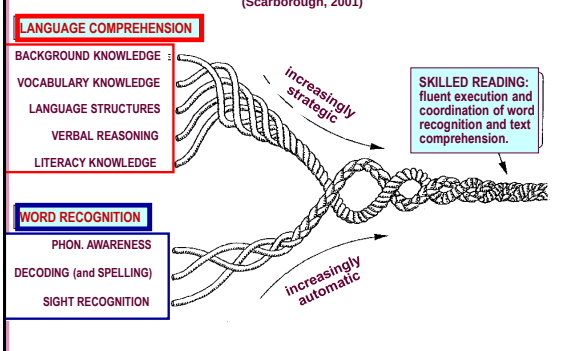
## The Many Strands that are Woven into Skilled Reading

(Scarborough, 2001)

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## How We Recognize Words

| | Units of Analysis |
|---|---|
| unteachable | *word* |
| un-teach-able | *morpheme* |
| un-teach-a-ble | *syllable* |
| u-n-t-ea-ch-a-b-le | *grapheme* |
| u-n-t-e-a-c-h-a-b-l-e | *letter* |

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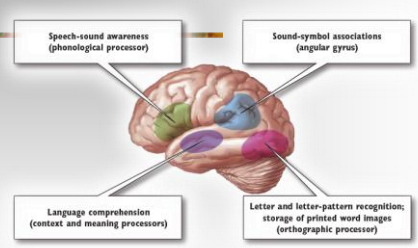
## The Reading Brain

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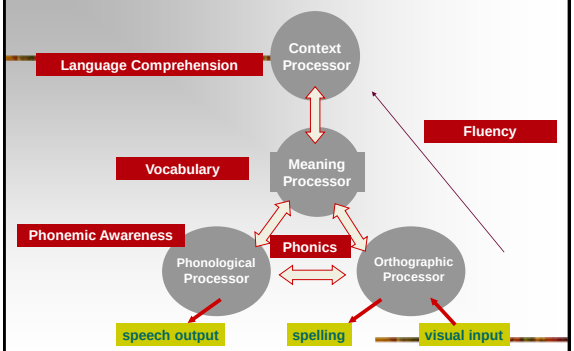
Seidenberg & McClelland, 1989; Rayner et al., 2001

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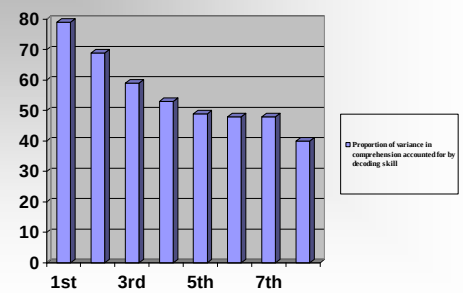
But the relationship between comprehension and decoding language components changes over time…
(Fletcher, Foorman, Shaywitz et al.)

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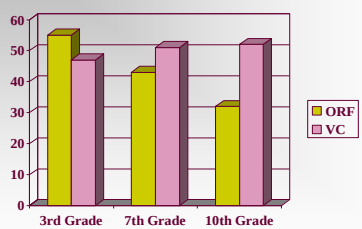
More evidence from the Florida Center for Reading Research…




Proportion of variance in FCAT explained by oral reading fluency and verbal comprehension. (Schatschneider et al., 2004)

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- Tests of phonological coding and word recognition are much better predictors of reading comprehension in *novice* readers
- Tests of language comprehension are much better predictors in *advanced* readers

- Vellutino, Tunmer, Jaccard, and Chen (2007), *Scientific Studies of Reading*

# CCSS: Reading Foundations

## Phonological Awareness (Grade 1)

- "Demonstrate understanding of **spoken** words, syllables, and sounds
  - d. Isolate and pronounce the initial, medial vowel, and final sounds in three-phoneme words
  - e. Add or substitute individual sounds in simple, one-syllable words

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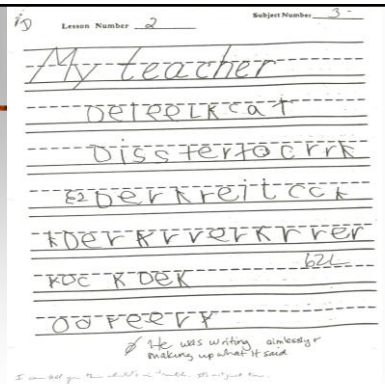


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## Why Does Phoneme Awareness Predict Reading and Spelling?

" Children faced with the task of learning to read in an alphabetic script cannot be assumed to understand that letters represent phonemes because awareness of the phoneme as a linguistic object is not part of their easily accessible mental calculus, and because its existence is obscured by the physical properties of the speech stream." (*A. Liberman, 1989*)

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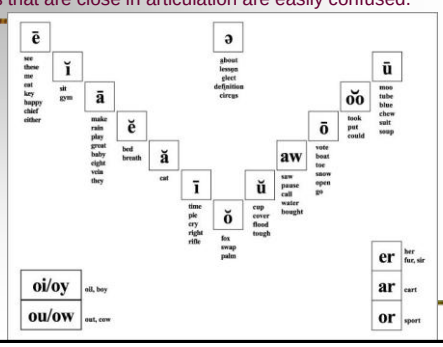
**Consonant Phonemes, Place and Manner of Articulation**

| | lips (bilabial) | teeth on lips/ labiodental | between teeth (interdental) | behind teeth (alveolar) | roof of mouth (palatal) | back of throat (velar) | glottis |
|---|---|---|---|---|---|---|---|
| stops unvoiced voiced | /p/ /b/ | | | /t/ /d/ | | /k/ /g/ | |
| nasals | /m/ | | | /n/ | | /ng/ | |
| fricatives unvoiced voiced | | /f/ /v/ | /th/ /th/ | /s/ /z/ | /sh/ /zh/ | | |
| affricates unvoiced voiced | | | | | /ch/ /j/ | | |
| glides unvoiced voiced | | | | | /y/ | /wh/ /w/ | /h/ |
| liquids | | | | /l/ /r/ | | | |

## Teach the System of Sounds

Vowels that are close in articulation are easily confused.

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## Phonology Is *Also* the Gateway to Word Meaning

Word perception, memory, and retrieval depend on phonological processing.

/f/ /l/ /u/ /sh/
/f/ /l/ /e/ /sh/
/f/ /r/ /e/ /sh/

*assess, access*
*secede, succeed*

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## Word Consciousness..

- Defuse or diffuse?
- Advice or advise?
- Allusion or illusion?
- Antidote or anecdote?

Recognition of word form enables access to word meaning (Perfetti,2011)

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## CCSS: Phonics and Word Recognition (Grade 2)

- Know and apply grade-level phonics and word analysis skills in decoding words
  a. Long and short vowels in one-syllable words
  b. Additional common vowel teams
  c. Regular two-syllable words with long vowels
  d. Common prefixes and suffixes
  e. Inconsistent but common correspondences
  f. Irregularly spelled words

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## Phoneme-grapheme Correspondence

| | | | | | |
|---|---|---|---|---|---|
| h | a | ve | | | |
| t | ou | gh | | | |
| th | r | ough | | | |
| t | r | ea | t | s | |
| t | ea | ch | i | ng | |

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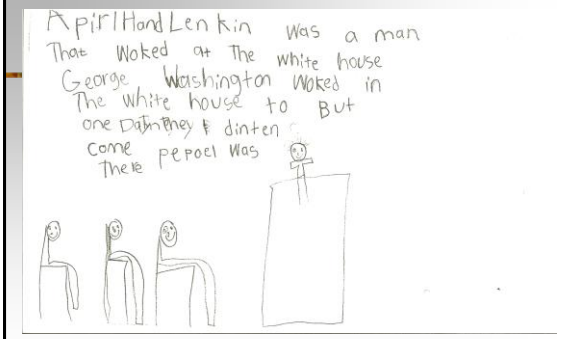


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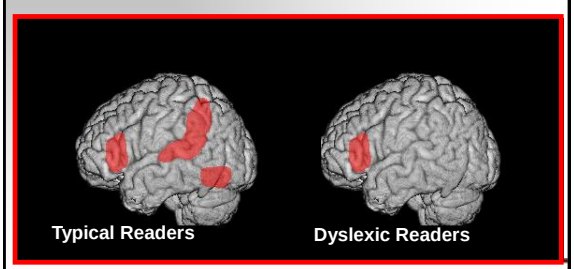
## Neurobiological Basis of Reading and Reading Disability (G. Eden, *Neurology*, 2004)

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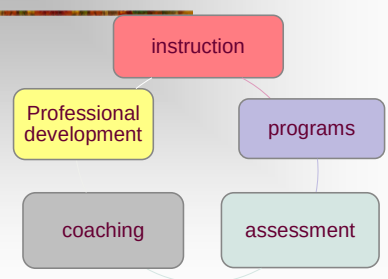
## Can We Change Predicted Outcomes? Yes!

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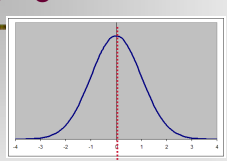
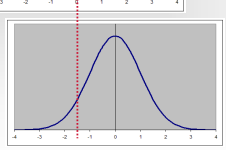
## "Defying the Odds"



Typical distribution of results (national, state, local)



Outstanding classroom, school, or district

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## Effective Differentiation Is Theory-Driven and Data-Driven

- Who needs help?
- What kind of help do they need?
- Is the help helping?

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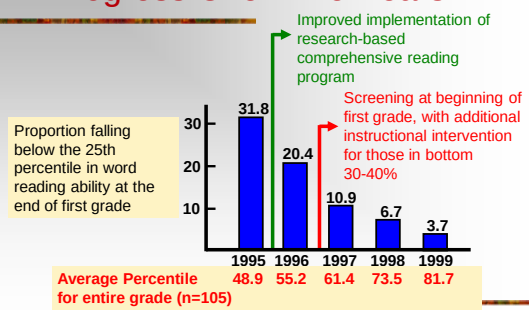
## Hartsfield Elementary School Progress Over Five Years

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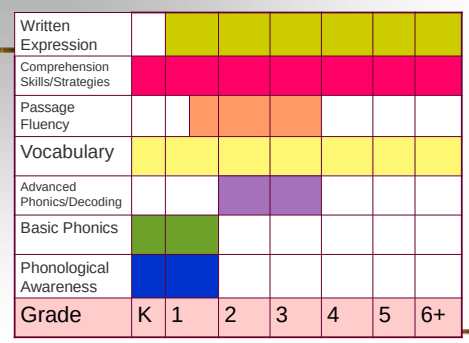
## "Balance" Changes, Grade by Grade

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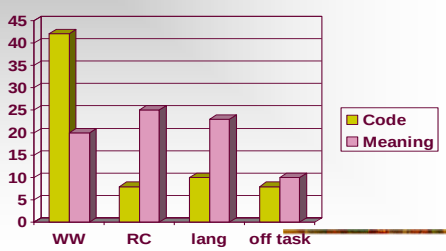
## Changing Emphasis, Each Grade
(Houston/DC NICHD Project)

Percent instructional time in 1st grade

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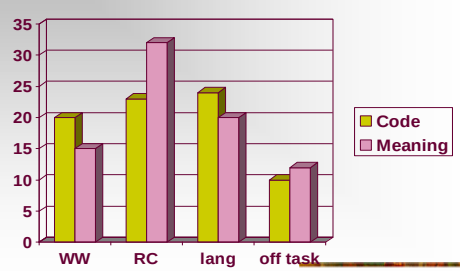
## Percent Instructional Time, 2nd Grade

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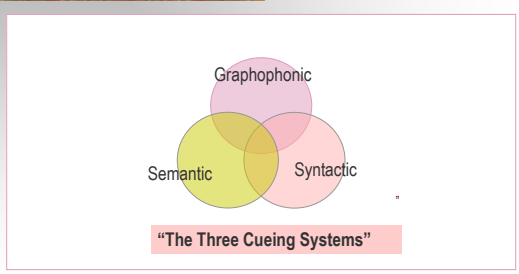
## Unfounded Theories Promote Ineffective Practice

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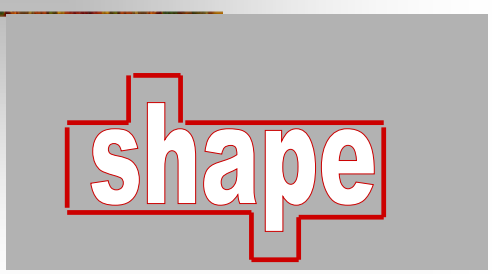
## For Example…

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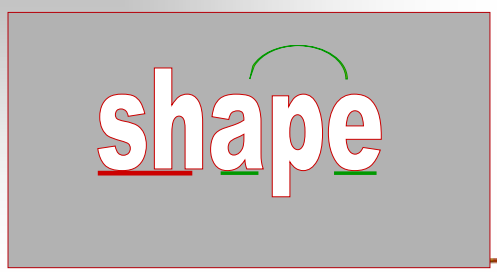
## Word Recognition Depends On Phoneme-Grapheme Mapping

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## The “alphabetic word wall.”

O
one
once
only
out
open
on
off

E
eye
eat
end
every
even

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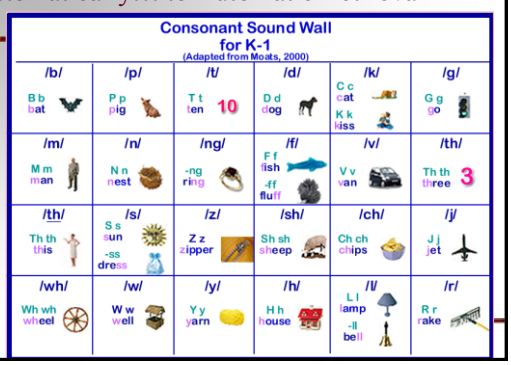
## Teach the Sounds, Cumulatively and Systematically… to Automatic Retrieval

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## Context Does Not Drive Word Recognition

- “….Don’t know that word? Well just keep reading and see what might make sense here…”

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## Skills Must be Applied to Reading

- “Scaffolded oral text reading practice produced significantly higher fluency than word study only.”
  - Explicit teaching of a decoding strategy
  - Prompts to use a decoding strategy
  - Routine use with decodable text
  - Vadasy, Sanders, and Peyton, JLD (2005)

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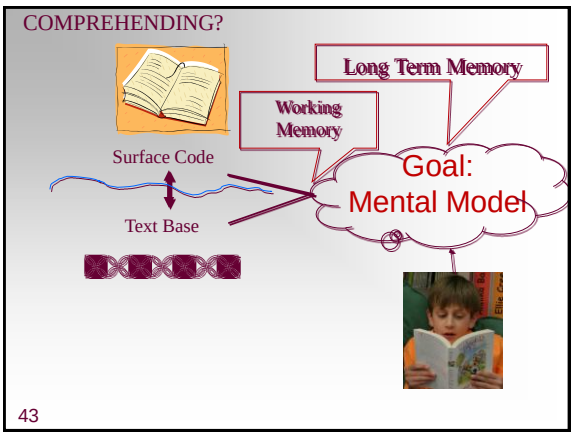
## Good readers…

*Read like a detective*. Students rely solely on *evidence within the text* to determine what the text says. Students also draw conclusions about what is unstated but must be true given the text.

*Observe details and make connections*. Students *attend to details* and describe the contribution specific details make to the whole. Once students *pay careful attention* to the text, they compare and contrast details and themes in the text to their experience and to other texts.

--David Coleman

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## The Ugly Duckling (H. C. Anderson)

"See there, that is the way of the world!" Mother Duck said as she whetted her beak. She would have loved a taste of the eel's head herself. "Step smartly now!" she admonished. "And bow down to the old duck yonder. She's the grandest of all here. She has Spanish blood, that's why she's so stout. Notice the red rag around her leg. That's a mark of distinction and the highest honor a duck can be paid. …Look lively and don't turn in your toes! A cultured duck points out his toes, just as your father and mother do – like *so*. Now, bow your heads politely and say, "Quack."

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## What Good Readers Do (Wagner & Ridgewell, 2009; Cain & Oakhill, 2012)

- Decode fluently and accurately.
- Know word meanings.
- Process complex syntax.
- Interpret cohesive cues.
- Fill "gaps" with inferences.
- Monitor comprehension.
- Know text structure.
- Have adequate working memory capacity.
- Know relevant background knowledge.

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## What Are the Children Reading?

- Is there thematic depth?
- Are major genres well sampled?
- Are there provocative, engaging ideas?
- Is there substantive content?
- Does it trigger the imagination?

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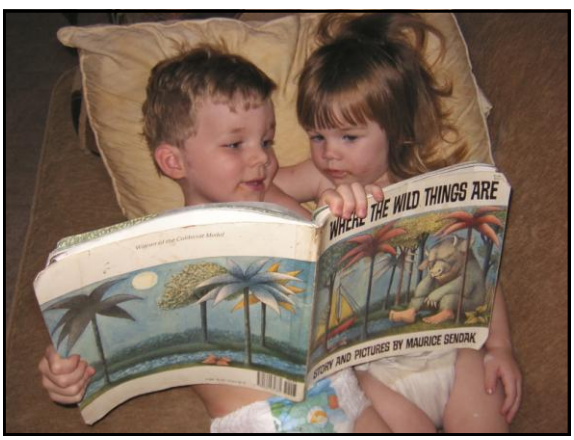


## An Achievable Goal

We have the science to prevent and ameliorate reading problems.

Let's respect science, teach language, *and* excite the imagination!

Thank you!

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