

## Using the Science of Reading to Improve Student Success

Knowledgeable Teachers Can Make a Difference

“Statistically, more American children suffer long term life harm from the process of learning to read than from parental abuse, accidents and all other childhood diseases and disorders combined. In purely economic terms, reading related difficulties cost our nation more than the war on terrorism, crime, and drugs combined. “

Children of the Code  
[WWW.childrenofthecode.org](http://WWW.childrenofthecode.org)  
National Institute for Family Literacy  
[www.nifl.org](http://www.nifl.org)

"In education, our assumption that many students will be poor readers has become 'institutionalized.' We expect it, we program for it, and we budget for it. I think it is time to challenge our institutional assumptions about reading failure. There is enough scientific information about the nature of reading development to make such a challenge."

- David Kilpatrick from "Equipped for Reading Success"



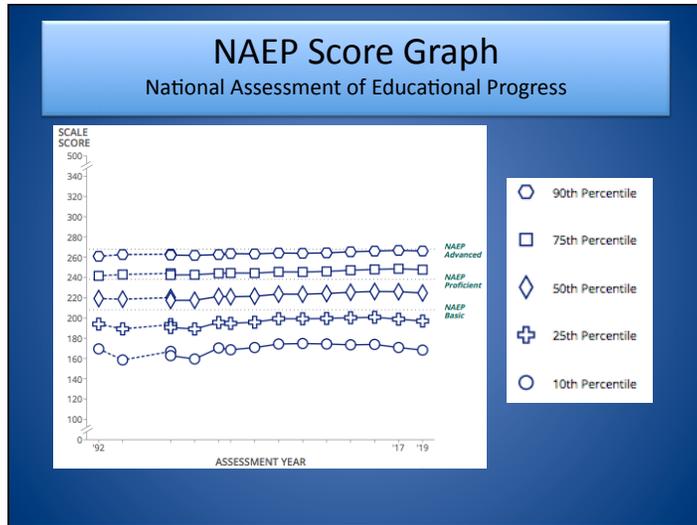
[www.ddia.net](http://www.ddia.net)

Acceleration  
RTI  
Tier 1  
Tier 2  
Tier 3  
Title 1  
Tutoring  
Summer School  
I-Station  
SRA

## Accepting reading failure should not be an option.

Department of Justice--“The link between academic failure and delinquency, violence, and crime is welded to reading failure. **Over 70 percent of inmates in America’s prisons cannot read above a fourth grade level.**”

85 percent of all juveniles who enter the juvenile court system are functionally illiterate.



### HB 3—Texas Reading Academies

**Who:** All kindergarten through third-grade teachers and principals must begin the Texas Reading Academies training before the 2022-2023 school year.

**Goal:** To increase teacher knowledge and implementation of evidence-based practices to positively impact student literacy achievement.

**What:** Science of Teaching Reading—STR: A term that describes educator application of evidence-based reading methods that best support development of skilled reading.

**Why:** Educators will be able to apply knowledge of the STR across teaching contexts to improve reading outcomes for all learners.

### The Science of Reading

National Reading Panel was formed in 1997. The panel and subcommittees reviewed reading research from 1966 forward. The goals of the NRP were to:

- Seek a consensus on the skills that were essential for reading development.
- Identify the best practices for teaching these skills in a way that would provide the best outcome for all students.

The Report of the National Reading Panel : Teaching Children to Read; published in December, 2000.

Put Reading First: The Research Building Blocks for Teaching Children to Read K—3, (2<sup>nd</sup> edition 2003)

Reading research is on-going and our understanding of how students learn to read continues to grow. The initial report and the continued studies make up the Science of Reading.

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.

LOUISA MOATS

### The Science of Reading

Research indicated 5 essential elements of effective reading instruction.

5 Components of Reading Instruction

NRP also identified the characteristics of the most effective reading instruction to meet the needs of all students. Effective instruction was:

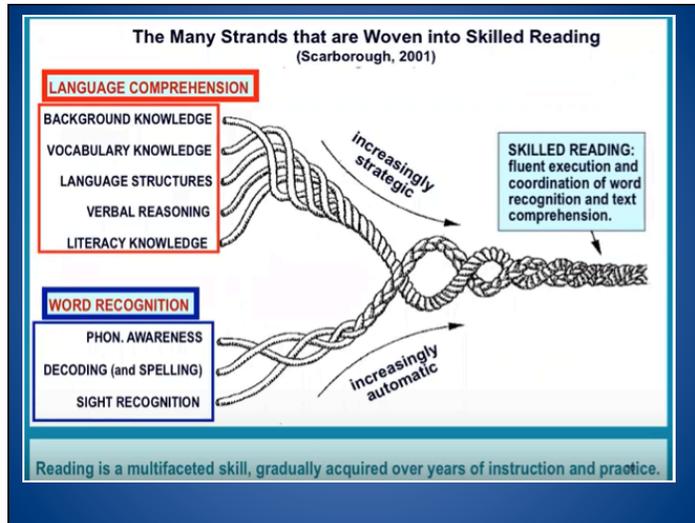
Explicit—Systematic—Direct  
 Sequenced—Structured—Cumulative  
 Intensive—Diagnostic

### Simple View of Reading

Gough & Tunmer, 1986

To implement the simple view of reading, teachers have two questions to ask:

1. Can the child sound out and pronounce the word?  
If not, decoding instruction is needed.
2. Does the child understand what the word means?  
If not, vocabulary instruction is needed.



## Meaning Based Instruction

The beginnings of meaning based reading instruction can be traced back to Whole Language. Learning to read was viewed to be as natural to a child's development as learning to speak.

- 1970—Whole Language
- 1980—Reading Recovery
- 1990—Four Block
- 2000—Balanced Literacy
- 2010—Guided Reading

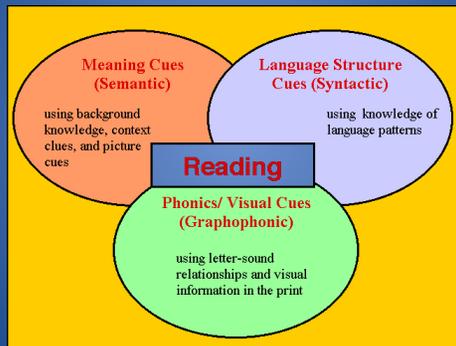
Phonics      Phonemic Awareness

Vocabulary      Comprehension

Fluency

Elements of effective reading instruction can be found in current reading curriculums, but there is a lack of emphasis on the roles of phonemic awareness and phonics play. What's else is missing? Explicit, systematic, direct, sequenced, structured, cumulative, diagnostic, and intensive instructional principles which should guide HOW we teach.

## MSV—Using Meaning, Syntax, and Visual Cues to Decode Print



## Using Meaning and Structure to Decode

- Look at the picture.
- Slide through the whole word.
- Skip hard words and then go back.
- Get your mouth ready to make the first sound.
- Reread. Does it look right? Does it sound right? Does it make sense?
- Spell the word out loud.
- Try a different sound.
- Think of a rhyming word you know.
- Chunk it. Look for smaller words inside.

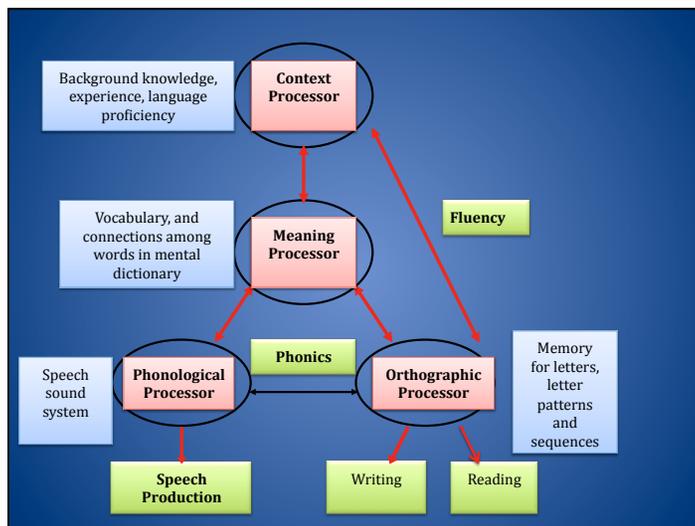
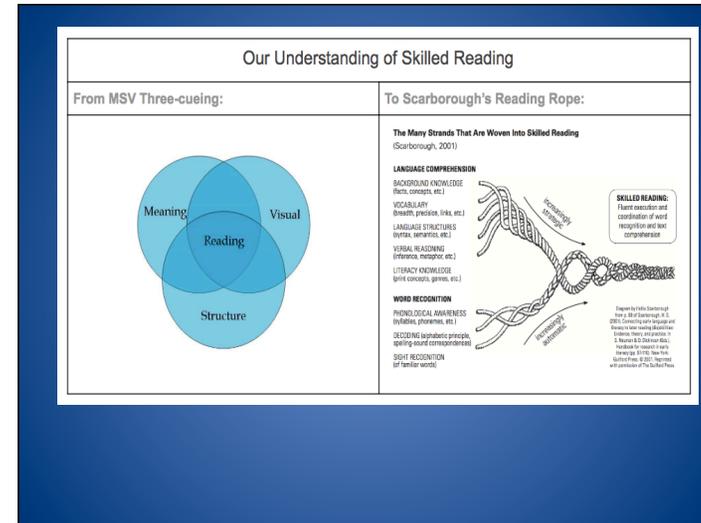
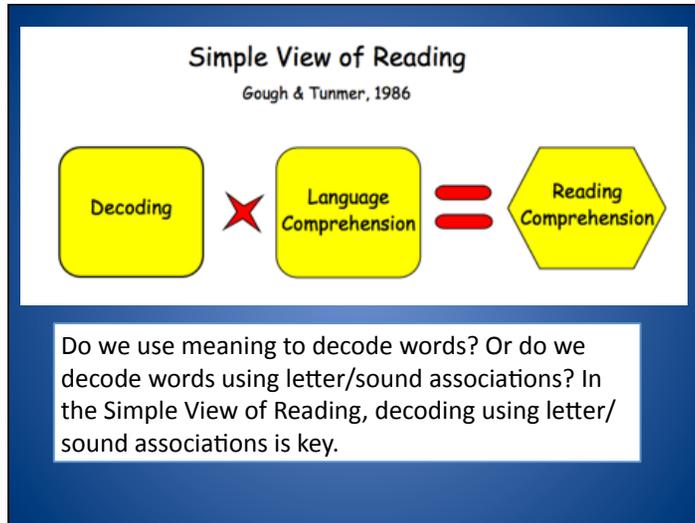
### Ways to Take Action & Solve Words

<p><b>Eagle Eye</b> Look at the picture. Think what is in the picture that starts with the beginning letter.</p>	<p><b>Lips the Fish</b> Get your mouth ready! Say the beginning sound.</p>
<p><b>Stretchy Snake</b> Slowly stretch each letter sound to make the word. snp - sh - d</p>	<p><b>Chunky Monkey</b> Break the word into chunks you already know. maz Plat sp at ter</p>
<p><b>Skippy Frog</b> Skip the tricky words. Read to the end. Goback &amp; try it again.</p>	<p><b>Flippy Dolphin</b> Flip the vowel sound. Try the long &amp; short sounds.</p>

**ALWAYS**  
 • Make Sense  
 • Sound Right  
 • Look Right

There is no comprehension strategy powerful enough to compensate for the fact that you can't read the words.

-Dr. Anita Archer



### Different Instructional Emphasis

Structured Literacy	Current Reading Approaches
<ul style="list-style-type: none"> <li>Phonological skills taught explicitly and systematically</li> <li>Phonics approach is synthetic (parts to whole). Letter/sounds taught; phonemic blending.</li> <li>Students read decodable texts using specific phonic patterns that have been taught.</li> <li>When reading orally, students encouraged to apply decoding skills.</li> <li>Spelling skills taught explicitly and systematically; reinforces what students learn in decoding</li> </ul>	<ul style="list-style-type: none"> <li>Phonological skills usually taught but not emphasized</li> <li>Phonics approach often analytic (whole to parts) or decoding by analogy.</li> <li>Students read leveled and predictable texts; may not apply to phonics skills taught.</li> <li>Teacher feedback to errors may emphasize sentence context or pictures, not decoding skills.</li> <li>Spelling word lists may have no specific phonics pattern or spelling rule.</li> </ul>

**Practice for Beginning Readers**

From Predictable Texts:	To Decodable Texts:
<p style="text-align: center;"><b>Homes</b></p> <p>Here is a tree. This tree is a home for an owl.                      Here is a log. This log is a home for a fox.                      Look at this shell. The shell is a home for a crab.                      Look at this cave. The cave is a home for bats.                      This is a hive. The hive is a home for bees.                      Here is a web. The web is a home for this spider.                      Look at this hole. The hole is a home for a mouse.                      This house is a home for a dog!</p>  <p style="text-align: center;">This house is a home for a dog!</p>	<p style="text-align: center;"><b>We Have Homes</b></p> <p>A hen will have eggs. A nest is a home for the eggs.                      Here is a home for a cub. It is a den.                      A web is a home. A web will have a bug in it.                      Ducks can swim well. They have a wet home.                      A dam is a wet home. A dam will have logs and mud.                      A pen is a home for a pig. You can have a pig for a pet!</p>  <p style="text-align: center;">A pen is a home for a pig. You can have a pig for a pet!</p>

<p><b>EXPLICIT &amp; SYSTEMATIC TEACHING INVOLVES:</b></p> <ul style="list-style-type: none"> <li>Reviewing previous learning, background knowledge &amp; skills.</li> <li>Identifying objectives to be learned.</li> <li>Activating &amp; building background knowledge.</li> </ul>	<p><b>EXPLICIT &amp; SYSTEMATIC TEACHING INVOLVES:</b></p> <ul style="list-style-type: none"> <li>Limiting the amount of new information taught.</li> <li>Modeling or "thinking aloud."</li> <li>Providing examples and, if appropriate, non-examples.</li> <li>Maximizing student engagement.</li> </ul>	<p><b>EXPLICIT &amp; SYSTEMATIC TEACHING INVOLVES:</b></p> <ul style="list-style-type: none"> <li>Pacing instruction appropriately.</li> <li>Checking for understanding.</li> <li>Providing corrective/affirmative feedback.</li> <li>Reteach when necessary.</li> </ul>
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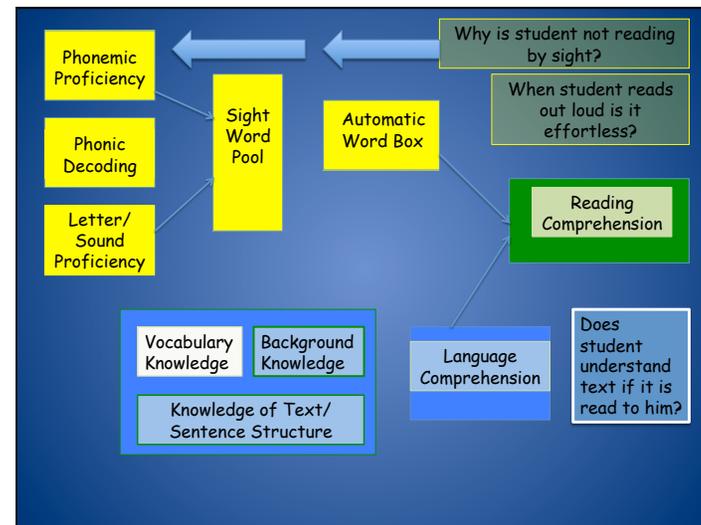
Poor Comprehension  
go back to fluency

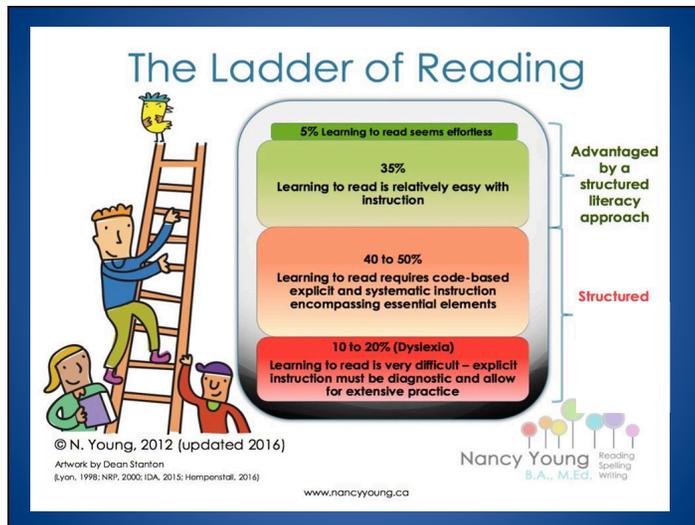
Poor Fluency  
go back to word recognition

Poor Word Recognition  
go back to phonics and decoding

Poor Phonics & Decoding  
go back to phonemic awareness

@dallhousespeechandlanguage





Every teacher deserves to know the science of reading. And every child deserves a teacher who knows it.

- Right to Read Project

www.ddia.net

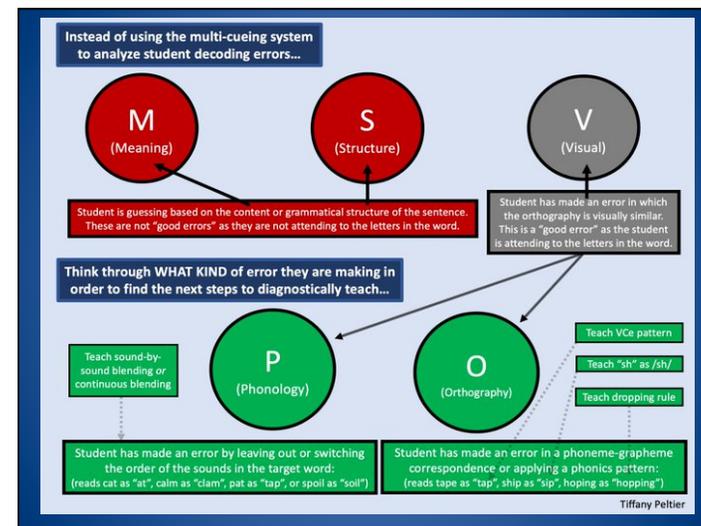
DECODING DYSLEXIA

## References

- Margaret Goldberg, Co-founder of Right to Read Project. "Simple But Not Easy". [www.readingrockets.org/blogs/right-read/simple-not-easy](http://www.readingrockets.org/blogs/right-read/simple-not-easy)
- Richard Gentry PhD "Bridging the Gap Between Science and Poor Reading in America" Psychology Today, May 6, 2018.
- "What is Structured Literacy: A Primer on Effective Reading Instruction." International Dyslexia Association

The Report of the National Reading Panel : Teaching Children to Read; published in December, 2000.

Put Reading First: The Research Building Blocks for Teaching Children to Read K—3, (2<sup>nd</sup> edition 2003)



### Why teach kids to read with decodable books?

because decodable books:

- **Provide a purpose** for learning phonics: We learn phonics in order to read a fun story.
- **Offer practice of phonics**: kids read texts embedded with the phonics they have already been taught.
- **Develop good reading strategies** based on the Science of Reading: sounding out the graphemes and blending them into words – not guessing!
- **Offer an experience of reading success** – a text with controlled words, based on phonics previously taught, provides instant success.
- **Create motivation** – success brings motivation to continue learning to read – “I can do this!”
- **Develop independence** – kids learn to work out words for themselves.



www.phonicbook.co.uk

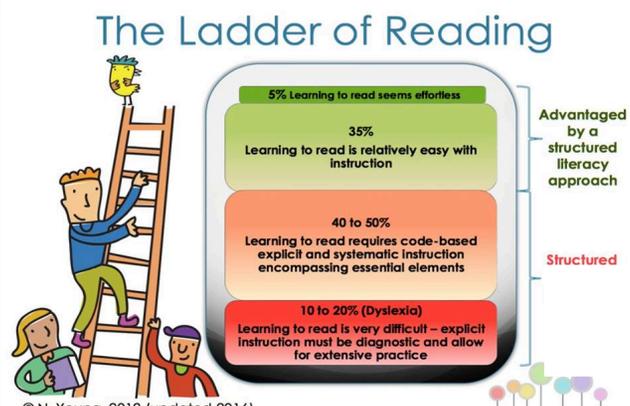
## Different Methods of Instruction

Explicit Phonics Instruction	Non-Explicit Phonics Instruction
<ul style="list-style-type: none"> <li>• Introduces phonics concepts directly through demonstration and use of clear language in scripted lessons</li> <li>• Includes explanation, modeling, guided practice, opportunities to practice new learning, and immediate corrective feedback</li> <li>• Can occur in whole group, small group, or an individual instructional setting</li> </ul>	<ul style="list-style-type: none"> <li>• Assumes students gain phonics skills through incidental learning</li> <li>• Leaves acquisition of phonics skills to chance or natural discover (e.g., teacher asks students to identify letter patterns after reading a list of words or passage.</li> <li>• Teaches the alphabet without teaching the phonetic sounds.</li> </ul>

## Different Methods of Instruction

Systematic Phonics Instruction	Non-Systematic Phonics Instruction
<ul style="list-style-type: none"> <li>• New concepts taught in a sequence that moves from simple to complex; new learning based on previously learned concepts</li> <li>• Provided in pre-established, structured lessons lasting 10 to 15 minutes as part of a sequence in an overall literacy curriculum</li> <li>• Analysis of diagnostic assessments and progress monitoring data informs instruction</li> </ul>	<ul style="list-style-type: none"> <li>• New concepts not taught in a predetermined sequence; may move slowly or quickly through letter-sound relationships.</li> <li>• Short lessons are not aligned in a core curriculum with a recognizable structure</li> <li>• Separate programs for core instruction and supplemental instruction may use conflicting or inconsistent terms, scope and sequence</li> </ul>

## The Ladder of Reading



© N. Young, 2012 (updated 2016)  
 Artwork by Dean Stanton  
 (Syn, 1998; NRP, 2000; IDA, 2015; Hamperstad, 2016)

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### SYSTEMATIC READING INSTRUCTION

	ORAL LANGUAGE DEVELOPMENT	DECODING/ENCODING	
DAILY BIRTH TO AGE 6/5	<b>PHASE 1</b> <b>WHAT TO TEACH:</b> <ul style="list-style-type: none"> <li>Words games with rhyming</li> <li>counting of words /parts in sentences/ syllables/ sounds</li> </ul> <b>WHAT TO READ:</b> <ul style="list-style-type: none"> <li>Read aloud and discuss all types of real books, both fiction and nonfiction</li> </ul>	<b>WHAT TO EXPLICITLY TEACH:</b> <ul style="list-style-type: none"> <li><b>1. LEARNING TO READ:</b> <ul style="list-style-type: none"> <li>letter identification/letter formation/sounds</li> <li>reading and writing of words/sentences using <b>explicit</b> methods/consistent <b>reference</b></li> </ul> </li> <li><b>2. READING TO LEARN:</b> <ul style="list-style-type: none"> <li>systematic/explicit comprehension strategies of every word/text</li> </ul> </li> </ul> <b>WHAT TO READ to enforce all new skills:</b> <ul style="list-style-type: none"> <li><b>CONTROLLED/decodable</b> texts that contain (mostly) known words and sounds</li> <li>readers can assist the adult in read alouds if the adult sees known elements in a shared text</li> </ul>	<b>FLUENT READERS THAT CAN COMPREHEND AND GAIN MEANING FROM ANY TEXT</b>
AGE 6/7	<b>PHASE 2</b> <b>WHAT TO TEACH:</b> <ul style="list-style-type: none"> <li>continue above skills with greater intensity</li> </ul> <b>WHAT TO READ:</b> <ul style="list-style-type: none"> <li>Read aloud and discuss all types of real books, both fiction and nonfiction</li> </ul>	<b>WHAT TO EXPLICITLY TEACH:</b> <ul style="list-style-type: none"> <li><b>1. LEARNING TO READ:</b> <ul style="list-style-type: none"> <li>Continue consistent sequence of decoding/encoding skills</li> </ul> </li> <li><b>2. READING TO LEARN:</b> <ul style="list-style-type: none"> <li>Continue adding explicit comprehension strategies</li> </ul> </li> </ul> <b>WHAT TO READ to enforce all new skills:</b> <ul style="list-style-type: none"> <li><b>CONTROLLED/decodable</b> texts that contain (mostly) known words and sounds</li> <li>readers can assist the adult in read alouds if the adult sees known elements in a shared text</li> </ul>	
PHASE 3	<b>WHAT TO TEACH:</b> <ul style="list-style-type: none"> <li>Read aloud and discuss all types of real books, both fiction and nonfiction</li> </ul>	<b>WHAT TO EXPLICITLY TEACH:</b> <ul style="list-style-type: none"> <li>Continue adding decoding/encoding skills to reader's toolbox</li> <li>Continue adding explicit comprehension strategies</li> </ul> <b>WHAT TO READ to enforce all new skills:</b> <ul style="list-style-type: none"> <li><b>ANYTHING and EVERYTHING</b> from which the reader can successfully gain meaning</li> </ul>	

### Reading Comprehension

**Mastery-based**

**Code-based**

- Print concepts
- Letter-sound knowledge
- Phonological awareness
- Blending and segmenting fluency
- Orthographic knowledge
- Sight-word knowledge

**Meaning-based**

- Executive function
- Background and topical knowledge
- Knowledge of grammar and syntax
- Semantic knowledge of words
- Reading with prosody (expression, intonation, phrasing)
- Genre and text structure knowledge
- Inferencing skills

**Cumulative**

**Systematic instruction** refers to the use of a planned, logical sequence to introduce the most useful phonic elements (NRP, 2000b, p. 2-81).

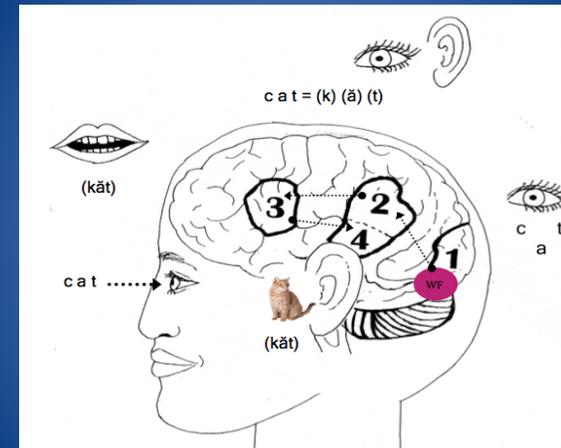
**Explicit instruction** is when the teacher directly points out what is being taught (e.g., a says /a/ as in *apple*), leaving little to chance. "First graders who are at risk for failure in learning to read do not discover what teachers leave unsaid about the complexities of word learning" (Gaskins, Ehri, Cress, O'Hara, & Donnelly, 1997, p. 325).

"Explicit instruction is instruction that does not leave anything to chance and does not make assumptions about skills and knowledge that children will acquire on their own."

- Dr. Joseph Torgesen

#### ELEMENTS OF EXPLICIT INSTRUCTION

- ment 1:** Focus instruction on critical content
  - ment 2:** Sequence skills logically
  - ment 3:** Break down complex skills and strategies into smaller instructional units
  - ment 4:** Design organized and focused lessons
  - ment 5:** Begin lessons with a clear statement of the lesson's goal
  - ment 6:** Review prior skills and knowledge before beginning instruction
  - ment 7:** Provide step-by-step demonstrations
  - ment 8:** Use clear and concise language
  - ment 9:** Provide an adequate range of examples and non-examples
  - ment 10:** Provide guided and supported practice
  - ment 11:** Require frequent responses
  - ment 12:** Monitor student performance closely
  - ment 13:** Provide immediate affirmative and corrective feedback
  - ment 14:** Deliver the lesson at a brisk pace
  - ment 15:** Help students organize knowledge
  - ment 16:** Provide distributed and cumulative practice
- Archer, A. & Hughes, C. (2011). *Explicit Instruction: Effective and Efficient Teaching*. New York, NY: The Guilford Press.



### Stanislas Dehaene

"It is simply not true that there are hundreds of ways to learn to read...when it comes to reading, we all have roughly the same brain that imposes the same constraints and the same learning sequence." (2009, p.218)

"90% of children with reading difficulties will achieve grade level in reading if they receive help in the 1st grade. 75% of children whose help is delayed to age 9 or later continue to struggle throughout their school career." (Vellutino, Scanton, Sipay, Small, Pratt, Chen & Denckla, 1996)