Dyslexia and Structured Literacy: Elements, Principles, and Strategies



Just Read, Florida! Webinar April 4, 2023

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Who I am and what I do . . .

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Began my educational journey in 1974 — almost 50 years ©

International Dyslexia Association (IDA) Florida Branch

https://fl.dyslexiaida.org/



Vision: ALL students in Florida will receive Structured Literacy instruction, provided by effective teachers, who understand the Science of Reading.

Mission: IDA-FL will be the **state leader** in the awareness and dissemination of current knowledge, research, and resources regarding dyslexia and related language-based learning disabilities. We will provide guidance, based on the **Science of Reading**, that informs appropriate assessment, **Structured Literacy instruction**, and intervention. This information will be available to all stakeholders, including children and adults with dyslexia, their families, teachers, and related professionals.

Today's Agenda

This session will focus on **evidence-based instructional strategies** that are grounded in:

- The Science of Reading: The WHY
- Structured Literacy: The WHAT & HOW





Today's Takeaways



- Dyslexia: A language-based disability, neurobiological in origin, that affects phonemic awareness, word recognition, and spelling
- The Science of Reading: a vast, interdisciplinary body of scientifically-based research about reading and issues related to reading and writing
- Structured Literacy: Content, Principles, and Strategies; Beneficial for ALL students, but vital for those with dyslexia



Reading is . . .

"an extraordinary ability,

peculiarly human and yet

distinctly unnatural."



(Dr. Sally Shaywitz, *Overcoming Dyslexia*, 2020, p. 3)



Language

- Language is the comprehension and use of a spoken or written communication.
- Reading and writing are based on oral language.
- We need to teach from speech to print, from sound to letter, from phoneme to grapheme.
- Our brains are hard-wired for ORAL language –
 NOT for written language.
- Reading and writing must be taught!



Reading Disabilities

Dyslexia

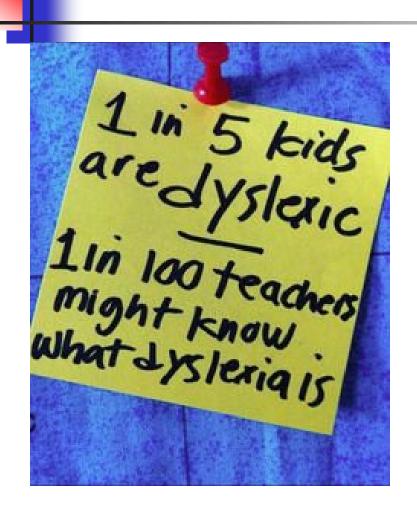
DECODING (Word Recognition)

Phonemic Awareness
Phonics
Spelling
Fluency

Hyperlexia LANGUAGE COMPREHENSION

Oral Language
Vocabulary
Concepts
Understanding

Did you know that . . .











- Reading
 - Dyslexia
 - Specific reading comprehension deficit
- Writing
 - Dysgraphia
 - Disorder of written expression
- Math
 - Dyscalculia



Definition of Dyslexia (IDA, 2002)

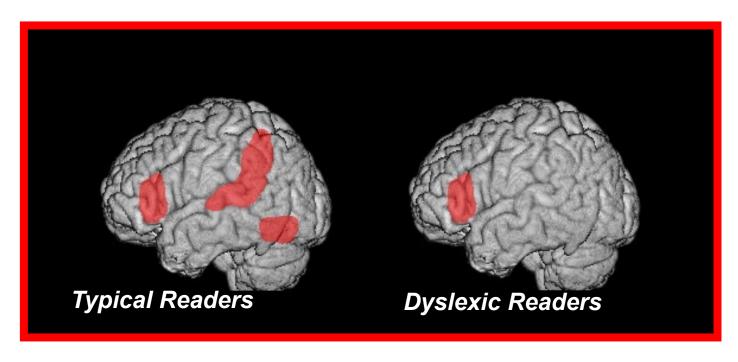
Dyslexia is a specific learning disability that is neurobiological in origin.

It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities.

These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.

Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.





Eden et al., Neuron, 2004





- Is a language-based problem
- Does <u>not</u> mean seeing things backwards
- Exists across all levels of intelligence
- Is not caused by a lack of motivation
- Occurs at all socioeconomic levels
- Occurs slightly more often in boys than in girls
- May occur even with good classroom instruction
- Often occurs with other disorders (comorbidity)



- 4
 - A disorder in one or more of the basic learning processes involved in understanding or in using language, spoken or written, that may manifest in significant difficulties affecting the ability to listen, speak, read, write, spell, or do mathematics. Associated conditions may include dyslexia, dyscalculia, dysgraphia, or developmental aphasia.
 - A specific learning disability does not include learning problems that are primarily the result of a visual, hearing, motor, intellectual, or emotional/behavioral disability, limited English proficiency, or environmental, cultural, or economic factors.





- Yes! It is one of the Specific Learning Disabilities (SLD) designated by the Individuals with Disabilities Education Act (IDEA).
- Dyslexia = SLD in basic reading skills: difficulties with accurate and fluent word reading, spelling, and writing.
- Dyslexia is one of the most common reasons students receive ESE services.

Dyslexia: Brief Definition in Revised REC

- Dyslexia is a specific learning disability (SLD) in basic reading skills that can range from mild to severe. The primary characteristics include difficulties with accurate and fluent word recognition and spelling.
- Included in the glossary of the revised Reading Endorsement Competencies (2022), Florida DOE/ Just Read, Florida!



The Science of Reading

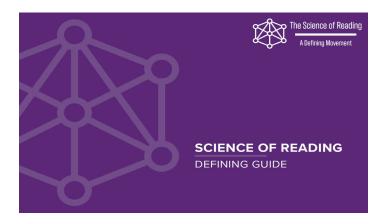
- Based on research from multiple fields of study over the last 50 years from across the world
- Provides evidence regarding how skilled reading develops
- Includes ALL aspects of reading (not just phonics)
- Provides the basis for Structured Literacy
- It is NOT a philosophy, a political agenda, or a program of instruction.



Science of Reading Defining Guide The Reading League (2022)

The Science of Reading: Defining Guide provides a firm definition of what the science of reading is, what it is not, and how all stakeholders can understand its potential to transform reading instruction.

https://www.thereadingleague.org/what-is-the-science-of-reading/



The Simple View of Reading

Gough & Tunmer (1986)





(Dr. Hollis Scarborough, 2001)

Language Comprehension

Background Knowledge

Vocabulary Knowledge

Language Structures

Verbal Reasoning

Literacy Knowledge

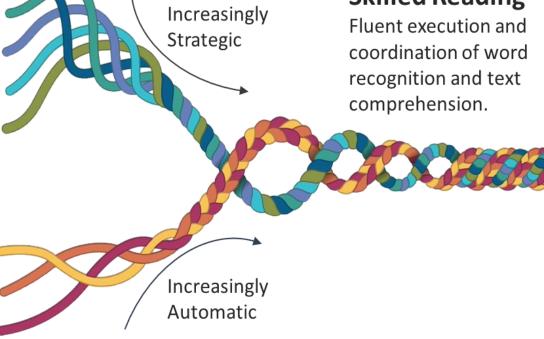
Skilled Reading

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 practice. Pp. 97-110 in S. B. Neuman & D. K. Dickinson (Eds.) Handbook of Early Literacy. NY: Guilford Press.



In fact. . .



Teaching reading is Rocket Science!

Teaching Reading Is Rocket Science: What Expert Teachers of Reading Should Know and Be Able to Do

by Louisa C. Moats, American Federation of Teachers, 2020 https://www.aft.org/ae/summer2020/moats



- The application of the Science of Reading
- The most effective approach for students who experience difficulty learning to read and spell printed words
- Refers to both the content (elements) and methods (principles) of instruction
- Benefits <u>ALL</u> students but is vital for students with dyslexia

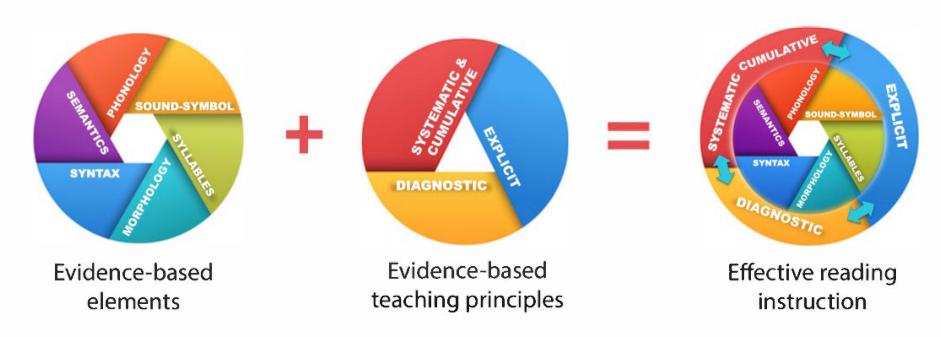
(Moats, Spring 2019, *Perspectives on Language and Literacy*)

Structured Literacy: What does it do?

- Teaches oral and written language skills in an explicit, systematic, multimodal manner
- Integrates listening, speaking, reading, and writing
- Emphasizes the structure of language across the speech sound system (phonology), the writing system (orthography), the structure of sentences (syntax), the meaningful parts of words (morphology), the relationships among words (semantics), and the organization of spoken and written discourse

Structured literacy

Explicit teaching of systematic word identification and decoding strategies



Source: © 2016 Cowen for International Dyslexia Association https://app.box.com/s/2yqu2ke21mxs0hz9l77owdlorgvtesyq

Structured Literacy: Elements (Content) The WHAT: P-S-S / M-S-S

- Phonology . . . Phonemic awareness
- Sound-symbol . . . Alphabetic Principle
- Syllables . . . Syllable types & division
 Align with the SVR and Reading Rope: Word Recognition
- Morphology . . . Base words and affixes
- Syntax . . . Grammar, sentence structure
- Semantics . . . Meaning, comprehension

Align with the SVR and Reading Rope: Language Comprehension

Structured Literacy: Principles (Methods) The HOW

Explicit

- Intentional, direct teaching; teacher—student interaction
- Multimodal: visual, auditory, kinesthetic, tactile (VAKT) in activities directly related to reading and writing (e.g., saying and feeling the word in your mouth [place and manner of articulation], while reading and writing the word)

Systematic & Cumulative

- Organization of materials follows a logical order.
- Each step is based on concepts previously learned.

Diagnostic

 Teacher must be able to individualize instruction based on careful and continuous assessment.

Key Features of Structured Literacy Approaches

(Spear-Swerling, *TEC*, 2019, p. 202)

- Explicit, systematic, and sequential teaching of literacy at multiple levels – phonemes, letter-sound relationships, syllable patterns, morphemes, vocabulary, sentence structure, paragraph structure, and text structure;
- b) Cumulative practice and ongoing review;
- A high level of student-teacher interaction;
- The use of carefully chosen examples and non-examples;
- e) Decodable text; and
- Prompt, corrective feedback.

The Science of Teaching



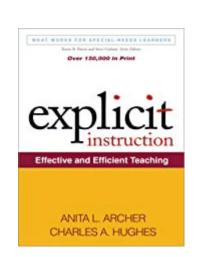
Why the 'Science of Reading' Needs the 'Science of Teaching' (voyagersopris.com)

In a recent blog, Dr. Louisa Moats refers to the "HOW" part of Structured Literacy as the "Science of <u>Teaching</u>." She states:

- Policy and practice guidelines on the science of reading often mention the importance of "systematic, explicit" instruction. Yet, the "how" of teaching seems to be getting short shrift in comparison to the emphasis on the "what."
- For maximum effect, however, the right content must be married to best teaching practices of the direct instruction variety.
- Developing expertise in lesson delivery and evaluation is a long-term but very rewarding undertaking which will transform the science of reading into "success for all." It's time to capitalize on the science of *teaching*.

Explicit Instruction: Effective and Efficient Teaching (Drs. Anita Archer & Charles Hughes, 2011)

- Systematic, direct, engaging, success oriented
- Lessons include the following steps:
 - "I do it" Teacher models or demonstrates the skill or strategy
 - "We do it" Prompted or Guided practice
 - "You do it" Unprompted Practice
- My favorite "Archerisms" include:
 - Teach the stuff and cut the fluff.
 - Teach with passion. Manage with compassion.



Examples of Some Different Instructional Emphases in SL as Compared to TLP

Structured Literacy (SL)	Typical Literacy Practices (TLP)
Phonics skills are taught explicitly and systematically, with prerequisite skills taught first. For beginning readers, these skills receive considerable initial emphasis.	Phonics skills are usually taught but not emphasized, even for beginners. Teaching is often not highly explicit or systematic. Prerequisite skills may not be taught first.
Phonics approach is synthetic (parts to whole). Students learn sounds for common letters and letter patterns (e.g., sh, -ck) and how to blend them (phoneme blending).	Phonics approach may be synthetic, but is often analytic (whole to parts) or decoding by analogy (e.g., word families.)
Beginning readers usually read decodable texts (texts largely controlled to specific phonics patterns that have been explicitly taught) that facilitate learning to apply phonics skills in reading texts.	Beginning readers usually read leveled and predictable texts (texts in which words are predictable based on sentence structure, repetition, or pictures) that do not easily lend easily lend themselves to application of phonics skills.

*Louise Spear-Swerling, TEC, 2019, p. 205, Table 2



Structured Literacy (SL)	Typical Literacy Practices (TLP)		
Oral text reading with a teacher is included in lessons.	Partner reading and independent reading may be emphasized more than oral text reading with a teacher.		
When students read text orally, they are encouraged to look carefully at printed words and apply decoding skills to unfamiliar words.	When students read text orally, some errors may be overlooked, especially if they do not greatly alter meaning. Teacher feedback to errors may emphasize sentence context or pictures rather than consistent application of decoding skills.		
Spelling skills are taught explicitly and systematically with prerequisite skills taught first and with instruction in common spelling rules (e.g., rules for adding endings).	Spelling instruction reinforces and extends what students learn in decoding. Spelling is often not taught in an explicit or systematic manner. Students may learn word lists in which words exemplify no particular phonics pattern or spelling rule. Spelling program may be completely distinct from decoding program with different words in the two programs.		

Examples of SL vs TLP (continued)

Structured Literacy (SL) Higher levels of literacy are explicitly and systematically taught (e.g., sentence structure, paragraphs, discourse), including prerequisite skills. Some higher levels of literacy may be explicitly taught but usually not systematically and not with strong attention to prerequisite skills.

Examples of SL Activities for Different Levels and Components of Literacy

Literacy area	Specific skill	Sample activity	Some prerequisites
Phonics	Decoding of silent-e (SE) words	 Teacher explains the pattern of these words (they end in a vowel-consonant-e pattern) and that the first vowel is long, with the final e silent. Teacher provides multiple examples of words that contain the SE pattern (stone, tape, shine, use) and that do not contain the SE pattern (tree, noise, prince, beet); teacher is careful to avoid common irregular words (done, have, some). Teacher provides guided practice with a sorting task on additional unfamiliar words, where students sort SE and not-SE words into two groups. For the SE words only, students give the vowel sound of each word, then decode it. 	Students can recognize and decode short-vowel (closed) syllables; students know long-vowel sounds (i.e., vowel says its name).

*Spear-Swerling, TEC, 2019, p. 204, Table 1

Conquer the Code: Sounds, Symbols, and Syllables

Sounds

- Phonological Awareness
- Phonemic Awareness /s/ /p/ /ī/ /d/ /er/



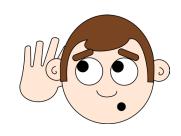
- Print Awareness
- Alphabet knowledge spider



- Vowel Patterns
- Syllabication

spī / der

open / bossy r









1. Phonology



- The study of the sound structure of spoken words
- The science of speech sounds
- The rule system within a language
- The speech-sound system of a language

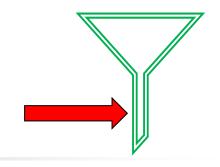


Phonological Awareness



- Refers to all levels of awareness of the sounds and syllables heard in oral language, including Phonemic Awareness
- Sensitivity to the <u>sounds</u> of language: words, syllables, and sounds (phonemes)
- Understanding of the different ways that <u>oral</u> language can be divided into smaller components and manipulated
- Includes:
 - Phonological sensitivity: words, rhymes, syllables, onset-rime
 - Phonemic awareness: phonemes





- Awareness of the <u>individual sounds</u> that make up words and the ability to manipulate those sounds in words
- Phoneme: The smallest unit of sound that distinguishes the meanings of spoken words
- 44 sounds in the English language
 25 consonant sounds
 18 vowel sounds + schwa: /ə/





- in the word box
- in the word enough
- in the word though



Can you say *teach* backwards? How about *enough?* Are you phonemically aware?

A Developmental Hierarchy of Phonemic Awareness Skills

- isolation: first sound of mat = /m/
- identity: same sound in bag, ball, bus = /b/
- categorization: which is "odd?"? milk, mouse, cat = cat
- blending: /s/ /ŭ/ /n/ = sun
- segmentation: mat = /m/ /ă/ /t/
- manipulation:

addition: add /m/ to the beginning of at = mat

deletion: say play without /l/ = pay

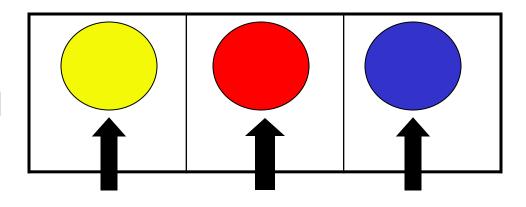
substitution: change the /a/ in bat to $/o/ \rightarrow$ boat

reversal: say **might** backwards → time



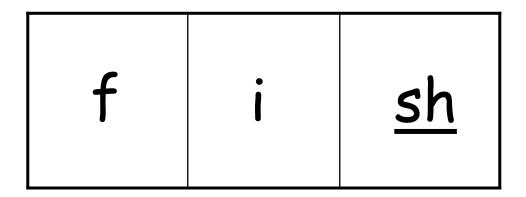
Elkonin Boxes (Sound Boxes)

Students slide counters into boxes to represent the sounds they hear in a word - "push and say" (Phonemic awareness)



Gradually, letters can be used to show how print matches speech: sound to letter; oral to written

(Phonemic decoding)

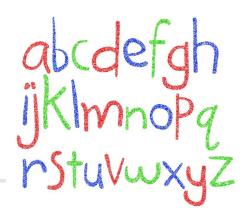




- The systematic and predictable relationship between the letters of written language and the sounds of spoken language
- The way print matches speech
- The relationship between phonology and orthography
- Also known as the alphabetic code



Orthography



- The writing and spelling system of a language
- The system in which the sounds (phonemes) of a language are represented by written or printed symbols (graphemes) to spell words

```
cat /k//a//t/= c-a-t: 3 sounds, 3 graphemes, 3 letters sheep /sh//e//p/= sh-ee-p: 3 sounds, 3 graphemes, 5 letters though /th//e/= th-ough: 2 sounds, 2 graphemes, 6 letters
```



Phonics

- Instructional practices that emphasize how <u>spellings</u> are related to <u>speech sounds</u> in <u>systematic</u> ways
- Graphemes represent or spell phonemes!

Ways to Teach Phonics

- Synthetic Phonics
 - -c-a-t=cat [letter by letter]
- Body–Coda
 - $\mathbf{ca} \mathbf{t} = \mathbf{cat}$ [beginning consonant + vowel]
- Analytic Phonics
 - c at = cat [onset-rimes; word families]
- Vowel Patterns (syllable types)
 - cat = cat [closed pattern]
 - me = me [open pattern] etc.

Orthographic Mapping

- A process by which words are stored in memory for instant, effortless, automatic retrieval while reading
- Context-free, accurate, and immediate word recognition (Kilpatrick, 2015)
- The phonemes in a word's spoken pronunciation are the "parking spots" for the graphemes (letter/s that represent those phonemes).
- Sight words are ALL words that can be recognized immediately, without sounding out or guessing.
- Dyslexia can be characterized by difficulties with orthographically mapping words.

Phoneme-Grapheme Mapping

mat	m	a	†		
strap	S	t	r	a	р
three	<u>th</u>	r	ee		
punch	р	U	n	<u>ch</u>	
bright	b	r	igh	†	

Color-Highlighting

<u>Vowels</u>	<u>Digraphs</u>	<u>Blends</u>	
a	<u>sh</u>	bl-	
е	<u>ch</u>	cr-	
i	<u>th</u>	str-	
0	<u>wh</u>	-nd	
u	<u>ph</u>	-mp	
-y -w	<u>ck</u>	-nt	
	<u>tch</u>	etc.	
	<u>dge</u>		

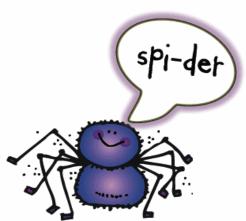


The English Language is Predictable "Morphophonemic"

- A system that represents both <u>sound</u> and <u>meaning</u> (Moats, 2020, p. 97).
- 50% of common English vocabulary can be spelled by phonemegrapheme correspondences alone.
- 36% more can be spelled with one error, using only phonemegrapheme correspondence rules.
- 10% more are spelled accurately if word origin, word meaning, and morphology are considered.
- Fewer than 4% are true oddities (Moats, 2020, p. 124).



3. Syllables



- A syllable is a word or part
 of a word that includes <u>one</u> vowel sound.
- Syllable types help readers pronounce the vowel sound within each syllable.
- There are six basic syllable types.
- Also called vowel patterns or spelling patterns
- English is 85-88% regular!

Vowel Pattern Chart (Syllable Types)

Closed	<u>Open</u>	<u>Silent e</u>	
cat	me	ride	
fi <u>sh</u>	go	cape	
bub-	ta-	hope	
Bossy r	2 Vowels	<u>C+le</u>	
star	<u>Talkers</u> Whiners	ta - ble	
girl	boat boy	b <mark>u</mark> b - ble	
tur-	meat clown	tur - tle	



Two Important Questions

- 1. How many vowels do you see?
- 2. Where is it? (or where are they?)

The number and position of the vowel is critical!



A word or syllable that contains only <u>one</u> vowel followed by one or more consonants; the vowel is short.

"One lonely vowel squished in the middle, says its special sound just a little."

sat	bed	fin	top	gum
sand	best	print	shop	l <mark>u</mark> nch
at	Ed	in	on	up



Open Vowel Pattern

A word or syllable that ends with <u>one</u> vowel; the vowel is long.

```
"If one vowel at the end is free, it pops way up and says its name to me."
```

me she hi go flu fly



Silent e (Magic e) Vowel Pattern

A word or syllable that ends in e, containing one consonant before the final e and one vowel before that consonant; the vowel is long.

"The silent e is quiet, but it has a claim to fame; it makes the vowel before it say its real name."

The silent e is so powerful, it gives all its strength to the other vowel so that it can say its real name.

make Steve ride hope cube

R-Controlled (Bossy r) Vowel Pattern

A word or syllable containing a vowel followed by r; the vowel sound is altered by the r.

The letter r is so bossy, it tells the vowel that it can't say its real name (long vowel) or its special sound (short vowel) but must say the r sound (as in car, for, her).

"er girls"

car for her girl curl





When two vowels go walking, the first one does the talking and says its name.

```
rain day see meat pie
boat toe slow suit blue
```



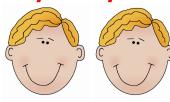
Double Vowel Whiners Pattern

A word or syllable that contains two adjacent vowels; the vowels say neither a long or short vowel sound, but rather a very different sound. [diphthongs and variants]

Sometimes when two vowels are next to each other, they make a funny whining sound, like when you fall down and say "ow," "aw," "oy," and get a "boo-boo."

fault saw foil boy loud cow "oy boys"

moon new book



C+le Vowel Pattern



This syllable ends with "le" preceded by a consonant, and occurs in two-syllable words. [consonant + le]

When a word ends with a consonant and "le," the "le" grabs the consonant before it, and the word breaks into two parts right before that consonant.

bub-ble ca-ble ea-gle poo-dle pur-ple

Syllable Division



C+le: tur/tle



bossy r & C+le

VC/CV: rab/bit



closed & closed

V/CV: ti/ger open & bossy r



VC/V: cam/el



closed & closed

■ V/V: li/on



open & closed



Strategy for Syllabication

"Spot and dot" the vowels



Connect the dots

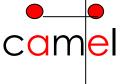
Look at the number of consonants between the vowels

If 2 – break between the consonants

If 1 – break before the consonant



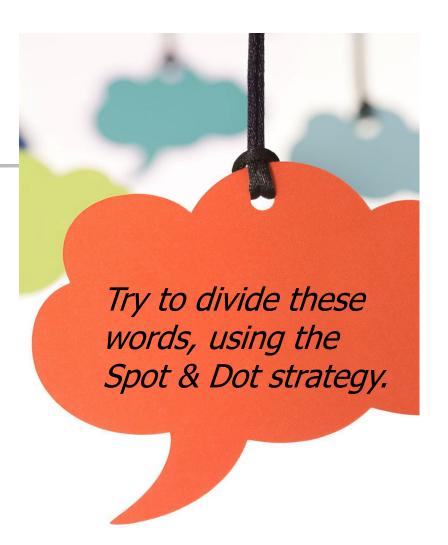
If it doesn't sound right, move over one letter camel





4

- Atlantic
- professor
- entertainment
- accommodate





```
At / lan / tic (C / C / C)

professor pro / fes / sor (O / C / R)

entertainment en / ter / tain / ment (C / R / T / C)

accommodate ac / com / mo / date (C / C / O / E)
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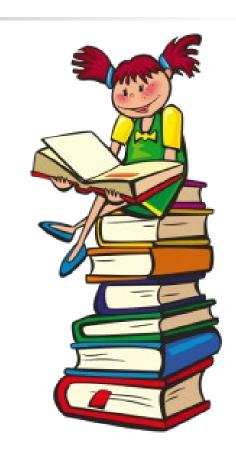
This strategy helps spelling, too!





When students have the MEANS to conquer the code, they will reach the GOAL, and master the meaning!

(E. Judith Cohen, Ed. D.)



4. Morphology

- Study of meaningful units of language and how they are combined to form words
- Study of base/root words and affixes (prefixes and suffixes)
- Morphemes are the smallest units of meaning in a word.

```
salamander = 1 morpheme
boys = 2 morphemes
photographer = 3 morphemes
```





```
PrefixBase/RootSuffixunfriendlyreheatedinspector
```

Use manipulatives, color-highlight, or draw a box around affixes: prefix = green; suffix = red



5. Syntax

- The sequence or order of words in a sentence
- The function of words
- Grammar
- Sentence structure
- Mechanics of language





Syntax - Sentences

Subject + P<u>red</u>icate
The dog ran.

Read a short passage and ask students to put these words in order to answer the question:

Where did the big dog run?

big park dog ran the to The

The big dog ran to the park.



- Meaning in
 - words
 - sentences
 - text
 - Comprehension of written language





Semantics / Comprehension

Beginning

Setting, characters, problem



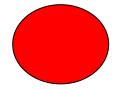
Middle

4 main events



End

Solution



(Shape GO Map - Dr. Carrice Cummins)

Strategies for Improving Text Comprehension

- Activities before, during, and after reading
- Activate background knowledge/schema (e.g., K-W-L)
- Reciprocal Teaching
- Retelling
- Teach "signal" words (e.g., therefore, next, in summary)
- Graphic organizers
 - K-W-L, problem-solution webs
 - Venn diagrams, comparison-contrast charts
 - Story Maps, Story Frames



- is the most effective approach to teach students who experience difficulty learning to read and write (including those with dyslexia) and it benefits ALL students.
- includes both the elements/content (the what) and the principles/methods (the how) of effective instruction.
- is based on the Science of Reading and the Science of Teaching.





"Do the best you can until you know better. Then, when you know better, do better!" (Maya Angelou)

Our challenge:

To provide Structured Literacy, based on the Science of Reading — to ALL children, in EVERY classroom!

We know better . . . it's up to us to DO better!





Websites of Interest



http://www.decodingdyslexia.net Decoding Dyslexia

https://dyslexiaida.org International Dyslexia Association (IDA)

https://fl.dyslexiaida.org IDA-Florida Branch

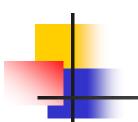
www.fcrr.org Florida Center for Reading Research

www.ReadingRockets.org Reading Rockets

www.thereadingleague.org The Reading League

https://fl.thereadingleague.org/ The Reading League- Florida

www.understood.org Understood



Awesome Resources



Teaching Reading IS Rocket Science, 2020, Dr. Louisa Moats: https://www.aft.org/ae/summer2020/moats

Dyslexia in the Classroom (IDA): https://dyslexiaida.org/dyslexia-in-the-classroom/

What is Structured Literacy? https://dyslexiaida.org/what-is-structured-literacy/



Structured Literacy Teacher Certification

- The Center for Effective Reading Instruction (CERI)
 https://effectivereading.org
- International Dyslexia Association (IDA)
 Knowledge & Practice Standards for Teachers of Reading
 https://dyslexiaida.org/knowledge-and-practices/
- Reading Rockets

www.ReadingRockets.org

Teaching Reading: Reading 101



The End!

Thank you for your kind attention!

Please feel free to contact me with any questions or concerns.







Questions are the path to learning