Helping Students Become Proficient Readers

OSPA Spring Conference 2013

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Objectives

- identify reading skills students must master at different grade levels;
- describe cognitive processes that are necessary to achieve basic and higher-order reading skills; and
- link assessment data to appropriate interventions, including Cogmed.

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What Do You See?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

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The Challenge

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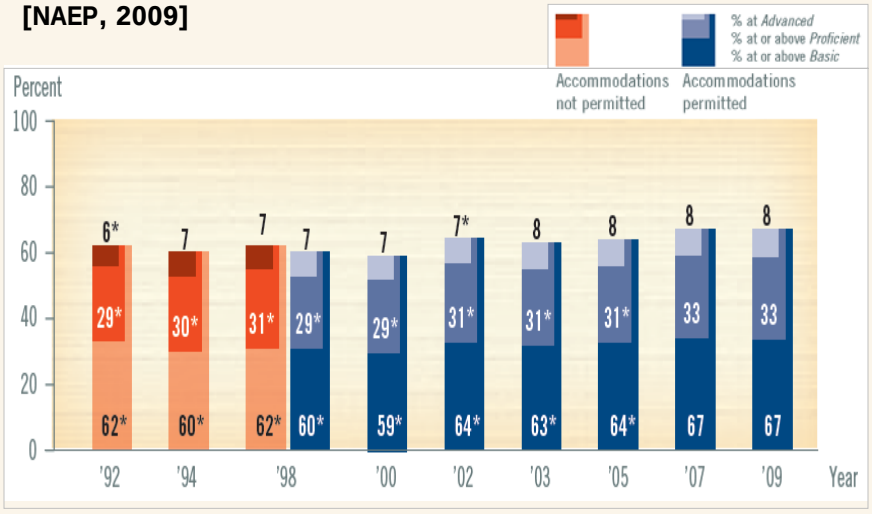
Reading Results Grade 4

[NAEP, 2009]



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Developing Reading Skills

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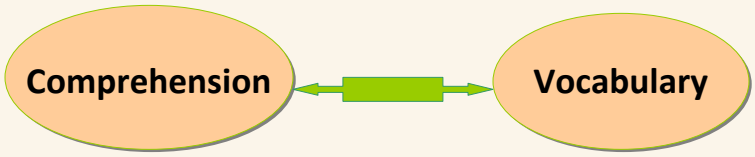
Reading

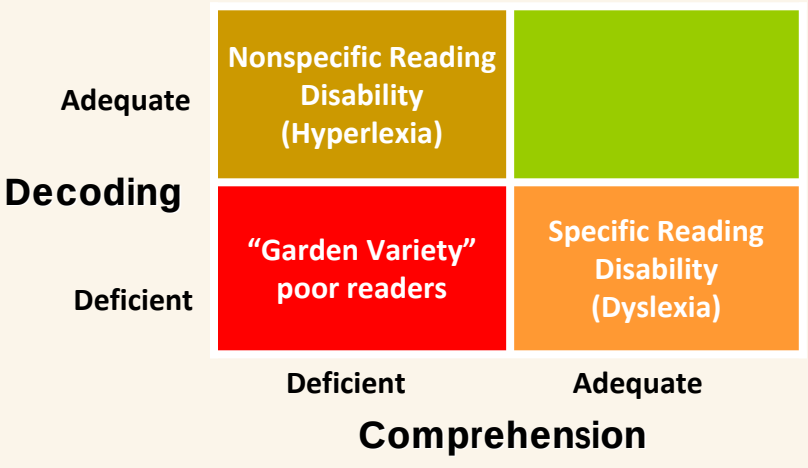
Reading is made up of two major parts:

- **Pronouncing written words (decoding), and**
- **Comprehending words and text.**

A major correlate of comprehension is vocabulary size.



Three Types of Struggling Readers



Reading
Scope and Sequence

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Reading Skills by Grade

Grade	Skills
K	• Name letters accurately. • Identify and generate rhyming words. • Segment syllables and phonemes in spoken words.
1	• Accurate naming of real words without context clues. • Accurate decoding of pseudowords without semantic cues.
2	• Name real words accurately and quickly without context clues. • Decode pseudowords accurately and quickly w/o semantic cues.
3	• Name real words accurately and quickly without context clues. • Decode pseudowords accurately and quickly w/o semantic cues. • Decode silently. • Read silently fluently.
4 and above	• Word comprehension. • Sentence comprehension. • Paragraph comprehension.

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Reading . . .

draws upon and integrates different levels of language.

Connected Text

Single Word

Subword – Sounds and Letters

Subword Processes

A. **Phonological Awareness**

B. **Orthographic Awareness**

C. **Alphabetic Principle**

Word Processes

A. **Word Specific Mechanism**
   1. Accuracy
   2. Automaticity

B. **Phonological Decoding Mechanism**
   1. Accuracy
   2. Automaticity

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Word Processes

C. **Morphological Awareness**
   1. Compound words
   2. Syllable segmentation (oral and written)
   3. Roots (e.g., work)
   4. Modification of roots w/affixes (work/ed)
   5. Morpho-phonemic transformations of words
   6. Stress and intonational patterns and their relationship to spelling rules (e.g., desert/dessert)

D. **Semantic awareness (vocabulary development)**

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Text Processes

A. **Oral Reading**
   1. Accuracy
   2. Rate
   3. Fluency
   4. Comprehension

B. **Silent Reading**
   1. Comprehension
   2. Rate

Text Processes

C. **Comprehension**
   1. Background knowledge
   2. Language Processes
   3. Cognitive Processes
   4. Meta-cognitive strategies for comprehension monitoring and self-regulation of the reading process

(Berninger, 2007)

SPELL-Links to Reading and Writing

Phonological Awareness	Sounds	• Segmenting Sounds • Discriminating Sounds
• Orthographic Knowledge • Mental Orthographic Images of Words	Letters	Phonics • Letter-Sound Relationships • Letter Patterns and Spelling Rules
• Semantic and Vocabulary Knowledge • Morphological Awareness and Knowledge	Meanings	• Vocabulary • Letter-Meaning Relationships • Rules for affixes • Rules for base words

National Reading Panel

- Alphabetics
  - Phonemic Awareness
  - Phonics
- Fluency
- Comprehension
  - Vocabulary
  - Text Comprehension
  - Comprehension Strategies

Fonix a loan is not enuf!

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

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Reading-Related Processes

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Reading Requires:

- *Encoding* **written words into temporary memory.**
- *Segmenting in working memory* **units of the written word — whole words, single letters, and/or letter clusters.**
- *Phonological awareness* **– of the syllables in multi-syllabic words and of the phonemes in spoken words.**

Reading Requires:

- **Use of the *grammar* information in suffixes to decide if a word fits a sentence context.**
- **Knowledge of *words* and concepts.**
- **Expressive language abilities.**
- **Verbal working memory.**
- **Inhibition, monitoring, shifting set.**

Coding Word Forms in Verbal Working Memory (Berninger, 2007)

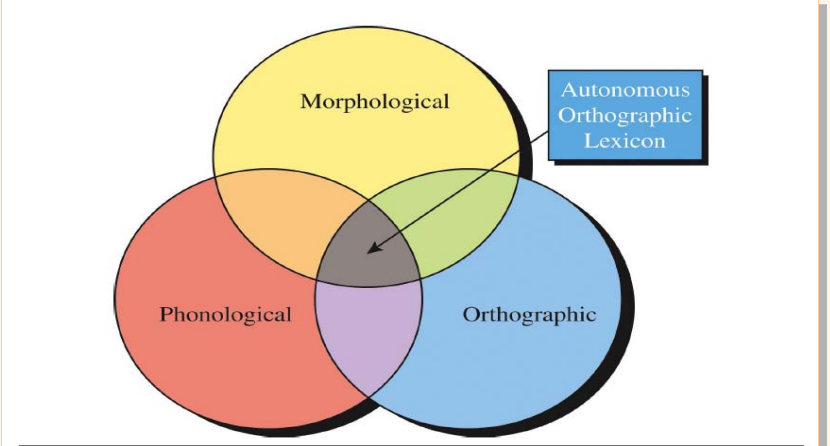

Figure 2 Creating interrelationships among the three word forms

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Phonological Loop (Berninger, 2007)

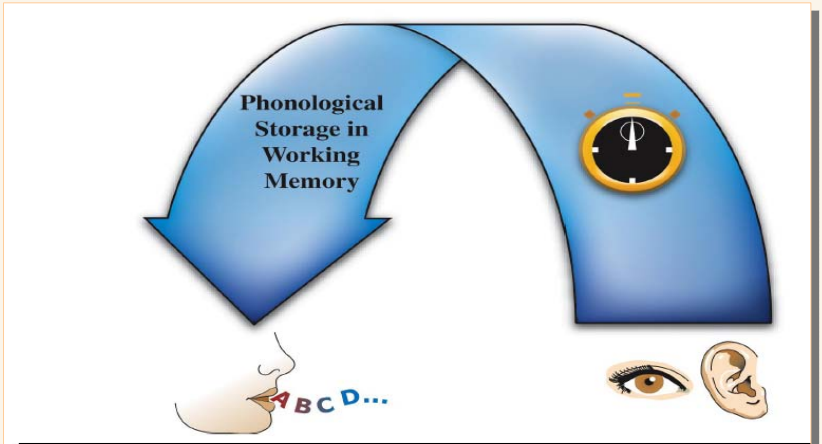

Figure 3 The phonological loop

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Executive Functions–Switching Set
(Berninger, 2007)

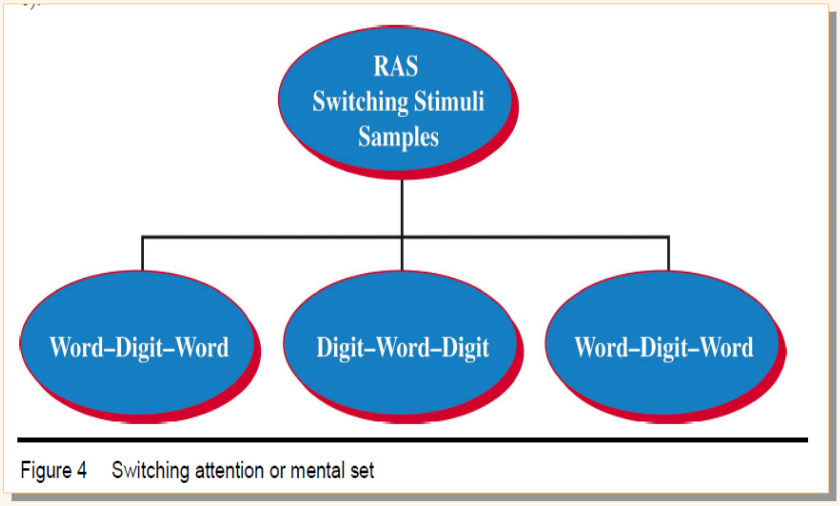


Figure 4 Switching attention or mental set

Executive Functions–Inhibition
(Berninger, 2007)

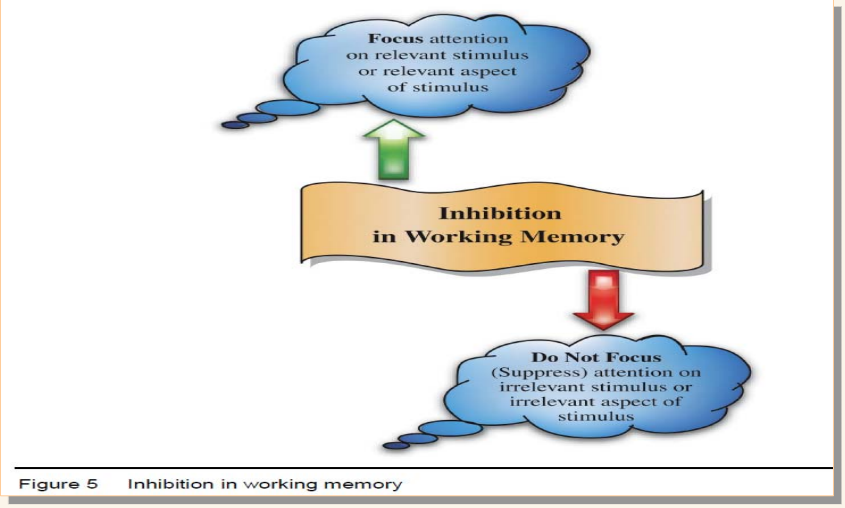


Figure 5 Inhibition in working memory

Executive Functions–Monitoring
(Berninger, 2007)

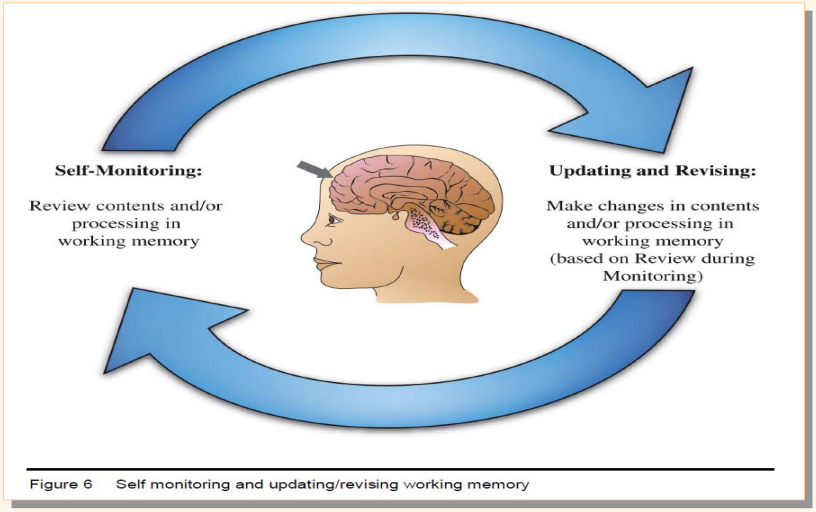
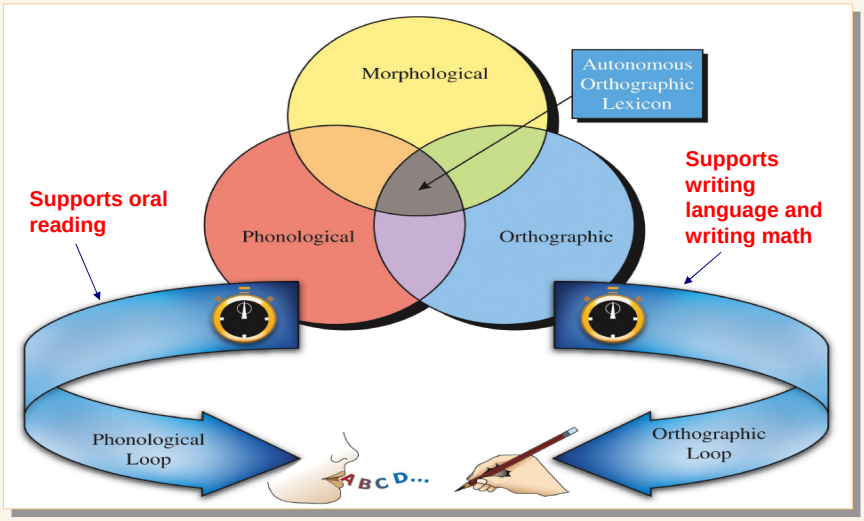


Figure 6 Self monitoring and updating/revising working memory

Written Language Problems Based on a Working Memory Architecture (Berninger, 2007)



Why do we teach word decoding and spelling together?

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The Learning Process

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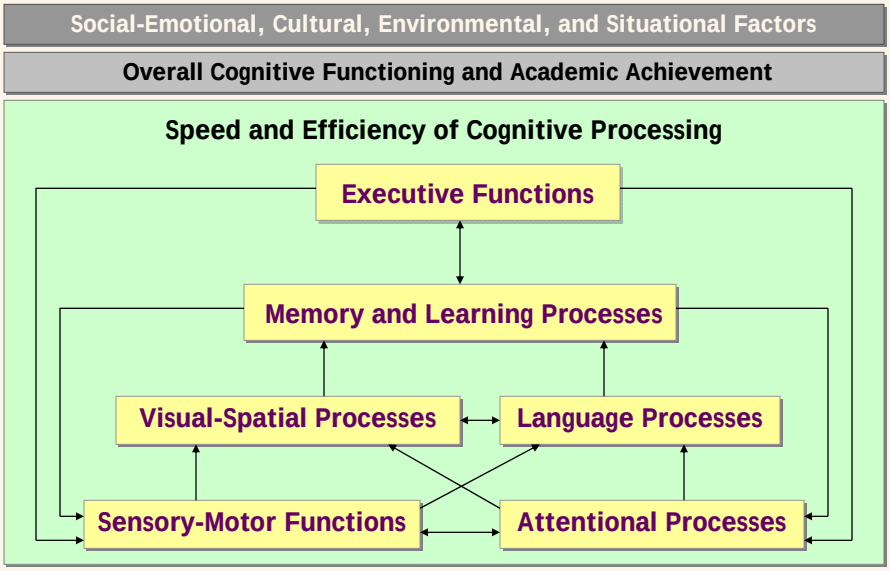
The Process of Learning

- **Learning is the process of acquiring information.**
- **What are the cognitive factors that enable students to show what they know and can do?**

How do they receive, perceive, process, and remember information? (Elliott, 2007)

How do they collect, sort, store, and retrieve information? (Miller, 2007)

Learning – A Multi-Factorial Process (Miller, 2007)



Sensory-Motor Functions and Learning

Input

- Is the child able to see the information? Is visual acuity within normal limits? What about visual discrimination?
- Is the child able to hear the information? Is hearing acuity within normal limits? What about auditory discrimination?

Output

- Is the child able to respond in writing? Are fine motor abilities within normal limits?
- Is the child able to respond orally? Are language production abilities within normal limits?

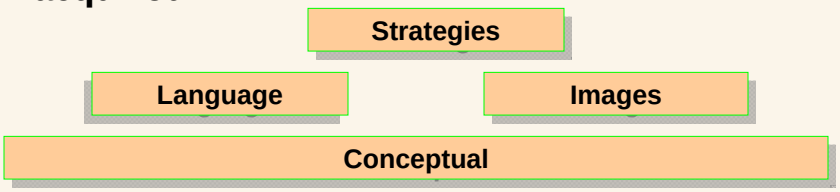
Attention and Learning

Does the child . . .

- selectively attend to certain stimuli while ignoring competing, irrelevant stimuli?
- sustain attentional focus for a prolonged period?
- shift attentional resources from one activity to another?
- respond to more than one task simultaneously – divided attention?

Memory and Learning

- In schools, we expect children to learn and remember information.
- Often, the information is presented visually and/or verbally.
- Some of the information is novel; some is acquired.



(Mather & Goldstein, 2008)

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Visual-Spatial Processes and Learning

- Much of what is presented in school has either a visual-spatial or language basis.
- Visual-perceptual skills play a major role in the development of a child's handwriting skills, and fluency in math and reading.
- For example, a student may be able to name individual letters in a word (visual analysis, b-e-d), but she may be unable to integrate the letters to say the word (visual synthesis, bed).

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Language and Learning

Receptive

Children must understand words and sentences to perceive and process information.

Expressive

They must use words to show they can retrieve information from memory.

Language and Learning

Early development of reading depends critically on whether the receptive phonological component of the *aural* system and the expressive phonological component of the *oral* system are developing in an age-appropriate manner (Berninger, 2007).

Language → Literacy

Process of Learning and Remembering

Encoding	External information is transformed into mental representations or memories and stored in STM.
Consolidation	Information from immediate memory is solidified into long-term memory stores.
Retrieval	Information is brought into conscious awareness.

Delayed

Immediate

Semantic

Working

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Executive Functions

- Mental functions associated with ability to engage in behaviors that are:
  - Purposeful
  - Organized
  - Self-regulated
  - Goal-directed
- Internal supervisory guide for learning and performance in the classroom.

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Executive Functions and Working Memory

- Many executive function tasks also require working memory—actively holding information in memory during cognitive tasks.
- Children with poor working memory may lose the "thread" and forget parts of the instruction, or even their own intention in the face of competing stimuli.

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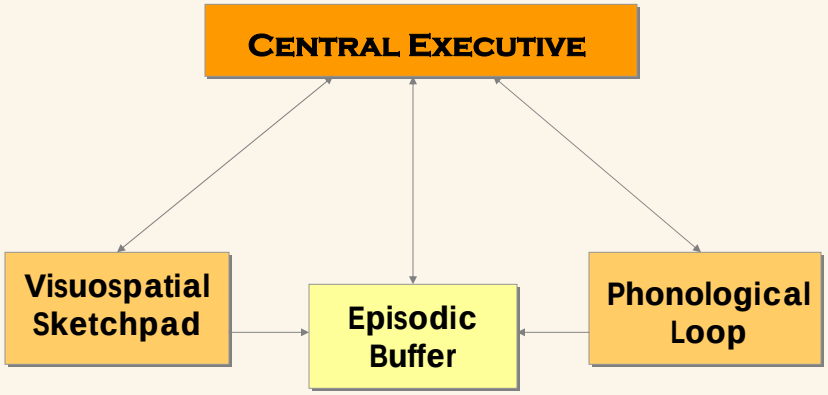
Working Memory



Baddeley & Hitch, 1974; Baddeley, 2000.

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Cognitive Processing Speed and Learning

- The ability to perform automatically – with little or no effort – improves dramatically as children get older.
- Automaticity is linked to speed and processing capacity; as an activity is completed faster, it requires less processing capacity.

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Why is Aaron (Grade 5) Struggling with Reading?

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Reading Skills by Grade

Grade	Skills
K	• Name letters accurately. • Identify and generate rhyming words. • Segment syllables and phonemes in spoken words.
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4 and above	• Word comprehension. • Sentence comprehension. • Paragraph comprehension.

Subtest Score Summary – WIAT-III

Subtest	Raw Score	Standard Score	Percentile Rank
Listening Comprehension	—	96	39
Reading Comprehension	26*†	87	19
Oral Reading Fluency	37*†	70	2
Word Reading	6	60	0.4
Pseudoword Decoding	3	67	1
Spelling	7	59	0.3
Math Problem Solving	50	113	81
Numerical Operations	27	95	37
Math Fluency Addition	36	116	86
Math Fluency Subtraction	31	115	84
Math Fluency Multiplication	26	112	79

– Indicates a subtest with multiple raw scores (shown in the Subtest Component Score Summary).
* Indicates a raw score that is converted to a weighted raw score (not shown).
† Indicates that a raw score is based on a below grade level item set.

Oral Reading Fluency

Supplemental Subtest Score Summary

Score Name	Raw Score	Std. Score	95% Conf. Interval	%ile Rank	NCE
Oral Reading Accuracy	200*	82	70–94	12	25
Oral Reading Rate	324*	70	60–80	2	8

* Indicates a raw score that is converted to a weighted raw score (not shown).

Reading Speed

Cumulative Percentages

Word Reading Speed	The score is the same as or higher than the scores obtained by 1% of students in the normative sample; 99% of students in the normative sample scored higher than this score.
Pseudoword Decoding Speed	The score is the same as or higher than the scores obtained by 1% of students in the normative sample; 99% of students in the normative sample scored higher than this score.

INTERVENTION

Integrating Orthographic, Phonological, and Morphological Awareness for Word Reading With Text Reading

(Berninger, 2003)

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Phonological Awareness

Teacher says word. Child repeats word, then says word again, but without the small sound the teacher indicates.

proud /d/	bird /d/	for /f/
garden /en/	first /t/	contest /s/
afraid /r/	always /al/	burn /b/

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Orthographic Awareness

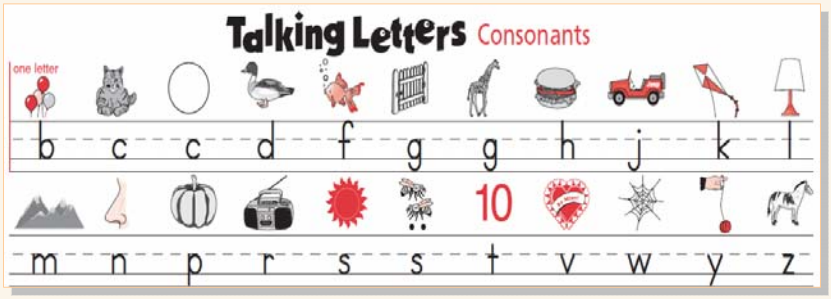
- **The child looks carefully at the word. With the pointing finger, s/he sweeps under the word from left to right, paying attention to each letter.**
- **Then, s/he covers the word with a 3"x5" index card. When the teacher says "*Now,*" the child spells out loud (or in writing) the word s/he sees in the mind's.**

proud	**contest**	**deeply**
garden	**always**	**breathed**
stinker	**first**	**feared**

Alphabetic Principle

- **Teach strategies for changing printed words into spoken words.**
- **For example, use *Talking Letters* to teach spelling-sound correspondences.**
- **The child can use these correspondences to help sound out words in the story you will read later.**
- **Focus on naming the letter(s), the picture, and then the sound.**

Talking Letters



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Structural Analysis

Lesson Set 5
Instructional Material

Lessons 1, 5, 9, 13, 17, 21

List 7a

FRONT OF CARD	BACK OF CARD
window	win = 3 (closed) dow = 2 (vowel team)
basket	bas = 3 (closed) ket = 3 (closed)
Sunday	Sun = 3 (closed) day = 2 (vowel team)
stable	sta = 3 (open) ble = 3 (-le)

For each word

- **Identify number of syllables.**
- **Count number of phonemes in each syllable in the spoken word.**
- **Classify each syllable in the word.**

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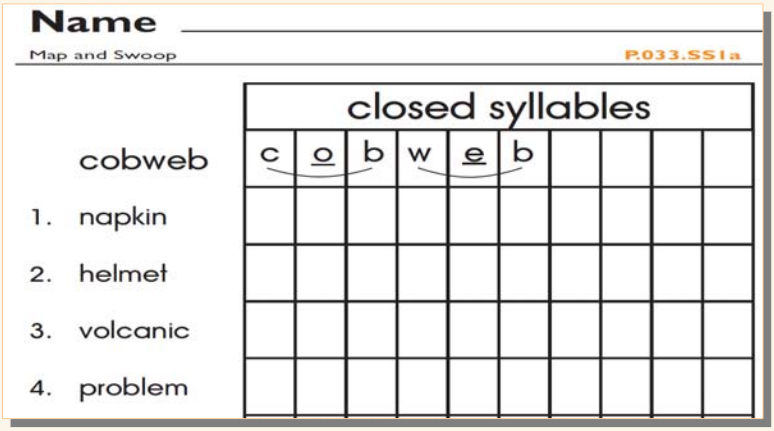
Structural Analysis



Name _____

Map and Swoop P.033.SS1a

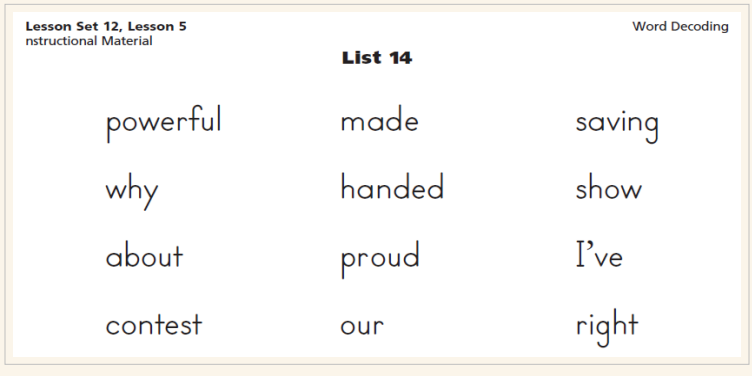
	closed syllables									
cobweb	c	o	b	w	e	b				
1. napkin										
2. helmet										
3. volcanic										
4. problem										

2006 The Florida Center for Reading Research (Revised July, 2007) 2-3 Student Center Activities: Phonics

Word Level

Phonological Decoding of Words from Text

Student sounds out the words for the lesson.



Lesson Set 12, Lesson 5 Word Decoding
nstructional Material

List 14

powerful	made	saving
why	handed	show
about	proud	I've
contest	our	right

PAL Research-Based Reading and Writing Lessons

Text Level

Silent Reading for Meaning

- **Story: "Five Stink Bugs Have a Contest" in Corrective Reading B2.**
- **Child reads the story silently "to find out how the smallest stink bug tricks the others."**
- **Child reads story aloud, summarizes, then reads aloud again.**
- **Finally, teacher guides the student(s) in reflective discussion.**

A Case Example
Winston, Age 7:11

Introducing Winston . . .

- Winston is in second grade at Salem Elementary.
- His language appears appropriate for his age. He uses complete sentences to describe his experiences and chooses words that convey his ideas.
- During math activities, he frequently raises his hand to answer the teacher's questions. His performance in math is at grade level.

Introducing Winston . . .

- When working with small groups of classmates on math, he assumes a leadership role.
- However, Winston does not display the same enthusiasm for reading.
- His reading skills are below grade level.

Skill Deficit – Reading CBM

Name	Corrects	Errors	Accuracy	Performance Summary	Potential Instructional Action
Target = 57.0					
Wilkerson, Tayler	56.0	0.0	100.0%	Average	Continue Current Program
Shipman, Barbara	55.0	1.0	98.2%	Average	Continue Current Program
Christianson, Ben	55.0	2.0	96.5%	Average	Continue Current Program
Stendahl, Kyle	55.0	1.0	98.2%	Average	Continue Current Program
Average >= 54.0 (25th %ile)					
Baker, Ryan	50.0	3.0	94.3%	Below Average	Further Assess and Consider Individualizing Program
Dugas, Victoria	50.0	5.0	90.9%	Below Average	Further Assess and Consider Individualizing Program
Berg, Chelsea	45.0	4.0	91.8%	Below Average	Further Assess and Consider Individualizing Program
Sorenson, Daniel	45.0	3.0	93.8%	Below Average	Further Assess and Consider Individualizing Program
Below Average >= 45.0 (10th %ile)					
Salem, Winston	30.0	10.0	75.0%	Well Below Average	Begin Immediate Problem Solving

Deficit in Word Reading

- **School's target - 57 words read correctly per minute.**
- **Class average - 58 words read correctly per minute.**
- **Winston - 30 words read correctly per minute.**
- **He read 10 words incorrectly which resulted in an accuracy rate of 75%.**
- **His performance was the lowest in the class and well below average.**

Standard Protocol Intervention

- Improve phonological awareness
- Small Group (5 students)
- Classroom teacher
- 30 minutes, 3x week
- Monitor progress – daily observation, monthly assessment
- Review in six weeks

Monitor Progress

- Oral reading fluency improved from 30 words correct per minute to 32 words correct per minute.
- Performance improved at a rate of 0.5 words correct per week.
- Performance of his four classmates improved at a rate of 0.8 - 1.5 words correct per week.

What factors might explain Winston's under-achievement in reading?

Reading Skills and Processes Related to Word Naming

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Reading: Subword and Word Level

- Reading at the subword and word level requires integration of phonological and orthographic skills.
- Successful performance requires
  - ✓ Phonological Awareness
  - ✓ Orthographic Awareness
  - ✓ Fluency

Weakness in Decoding

Pronouncing unknown words requires:

- Encoding written words into temporary memory and then segmenting (in working memory) units of the written word—wholes, single letters, letter clusters.
- Phonological awareness of the syllables in multi-syllabic spoken words.
- Phonological awareness of the phonemes in spoken words.

Winston and Word Naming

PROCESS ASSESSMENT OF THE LEARNER pal-II Diagnostic Assessment for Reading, Writing, and Math

	Scaled Score
Pseudoword Decoding	**5**
Phonological Awareness	
Syllables	*6*
Phonemes	*8*
Orthographic Awareness	
Receptive Coding	*8*
Fluency	
RAN-Letters	*10*
RAN-Letter Groups	*7*

Intervention

- **Improve phonological awareness – focus on syllables**
  - **find a word hidden in a longer word**
  - **say the syllable missing from a word he'd heard**
  - **say a word without a part of the word**
  - **say a new word by substituting a given syllable for another**
- **Small Group (3 students)**
- **Reading specialist**
- **30 minutes each day**
- **Monitor progress – assess 2x month**
- **Review in eight weeks**

Phonological Training Syllables (Berninger, 2003)

Find the Hidden

Say **see**.	Is the word **see** hidden in the word	**seesaw**? **seaman**? **saddle**? **seed**?
Say **miss**.	Is the word **miss** hidden in the word	**mistake**? **mister**? **master**? **mistletoe**?
Say **car**.	Is the word **car** hidden in the word	**cargo**? **card**? **scar**? **star**?
Say **all**.	Is the word **all** hidden in the word	**always**? **recall**? **illness**? **ball**?

Phonological Training Syllables (Berninger, 2003)

Say the Missing

Say **defenseless**.	Now say **defense**.	What is missing?
Say **memorize**.	Now say **orize**.	What is missing?
Say **mistaken**.	Now say **taken**.	What is missing?
Say **gorilla**.	Now say **goril**.	What is missing?

Phonological Training Syllables (Berninger, 2003)

Say the Word Without	
Say **independent**.	Now say it without **dent**.
Say **classification**.	Now say it without **classi**.
Say **occupation**.	Now say it without **tion**.
Say **newspaper**.	Now say it without **news**.

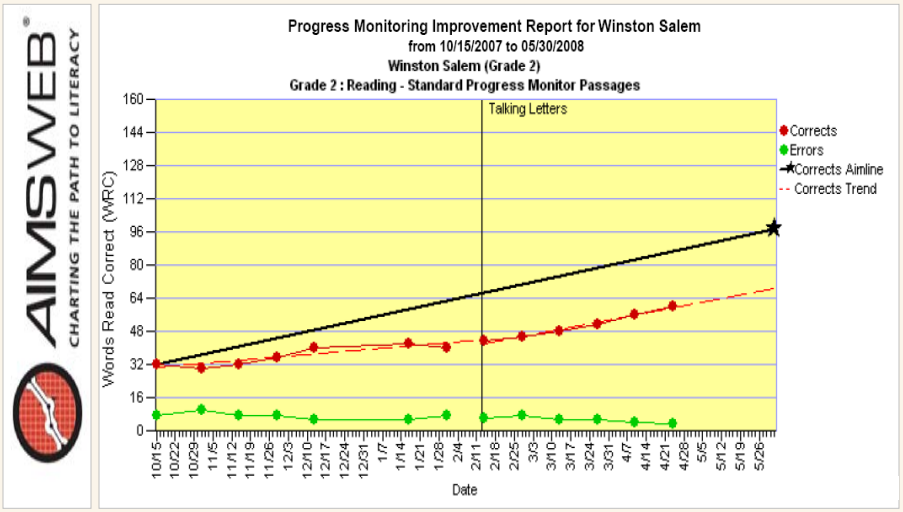
Phonological Training Syllables (Berninger, 2003)

Substitute	
Say **candy**.	Now don't say it with **dy** say it with **dle**.
Say **cartoon**.	Now don't say it with **toon** say it with **pet**.

Change Intervention

- **Explicit instruction in translating printed words to spoken words**
- **Individual**
- **Reading specialist**
- **30 minutes each day**
- **Monitor progress – assess 2x month**
- **Review in eight weeks**

Winston's RtI



Refer students whose RtI warrants additional or intensive continuing interventions.

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Test Results

Winston-Age 7:11

Complex Mental Processing
Cognitive Strengths and Needs

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Ability

Differential Ability Scales–Second Edition (DAS-II)			
Composite/*Cluster*/Core Subtest	Standard Score (Mean=100)	T-Score (Mean= 50)	Percentile Rank
General Conceptual Ability	97		42
Verbal Ability (Gc)	*102*		*55*
Word Definitions (Gc)		52	58
Verbal Similarities (Gc)		50	50
Nonverbal Reasoning Ability (Gf)	*89*		*23*
Matrices (Gf)		43	24
Sequential and Quantitative Reasoning (Gf)		44	27
Spatial Ability (Gv)	*102*		*55*
Recall of Designs (Gv)		51	54
Pattern Construction (Gv/Gf)		52	58

Differences Between Cluster Standard Scores

Discrepancy Comparisons	Score 1	Score 2	Diff.	Critical Value	Sig. Diff. Y / N	Base Rate
Verbal - Nonverbal Reasoning	102	89	13	13	Y	15%
Verbal - Spatial	102	102	0	12	N	
Nonverbal Reasoning - Spatial	89	102	-13	10	Y	10-15%

Differences Within Cluster Standard Scores

Discrepancy Comparisons	Score 1	Score 2	Diff.	Critical Value	Sig. Diff. Y / N	Base Rate
Word Definitions-Verbal Similarities	52	50	2	12	N	---
Matrices-Sequential & Quantitative Reasoning	43	44	-1	9	N	---
Recall of Designs-Pattern Construction (Standard)	51	52	-1	8	N	---

Average Verbal Ability

- knowledge of verbal concepts;
- language comprehension and expression;
- level of vocabulary development;
- expressive language skills, including verbal fluency;
- conceptual understanding and abstract verbal thinking;
- retrieval of information from long-term verbal memory; and
- general knowledge.

Average Visual-Spatial Ability

- attention to visual detail;
- visual-spatial analysis;
- visual-spatial synthesis;
- spatial imagery and visualization;
- perception of spatial orientation;
- visual-spatial matching.

Below-Average Nonverbal Reasoning Ability

- inductive reasoning;
- analytical reasoning ability;
- perception of visual detail and spatial orientation in drawings;
- understanding of simple verbal instructions and visual cues;
- visual-verbal integration; and
- use of verbal mediation strategies.

Diagnostic Subtests

Differential Ability Scales-Second Edition (DAS-II)			
Cluster/Diagnostic Subtest	Standard Score (Mean=100)	T-Score (Mean= 50)	Percentile Rank
Working Memory (MV = narrow ability)	93		32
Recall of Sequential Order (Gsm)		40	16
Recall of Digits Backward (Gsm)		52	58
Processing Speed (Gs)	89		23
Speed of Information Processing (Gs)		51	54
Rapid Naming (Gs)		38	12
Other Diagnostic Subtests			
Recall of Objects – Immediate (Glr)		40	16
Recall of Objects – Delayed (Glr)		41	18
Recall of Digits Forward (Gsm)		53	62
Recognition of Pictures (Gv)		54	66
Phonological Processing (Ga)		51	54

WM and PS: Unitary Constructs?

Differences Between Subtest *T*-Scores Within Diagnostic Clusters

Discrepancy Comparisons	Score 1	Score 2	Diff.	Critical Value	Sig. Diff. Y / N	Base Rate
Recall of Sequential Order - Recall of Digits - Backwards	40	52	-12	8	Y	5-10%
Speed of Information Processing - Rapid Naming	51	38	13	10	Y	10-15%

Base Rate by overall sample.
Statistical Significance (Critical Values) at the 0.05 level.

Relatively Lower Scores

Subtest	CHC Abilities		Abilities Measured
	Broad	Narrow	
Rapid Naming	Gs	PC	Automaticity of integration of visual symbols with phonologically referenced naming.
Recall of Objects	Glr	M6	Short-term recall of verbal and pictorial information.
Recall of Sequential Order	Gsm	MW	Intermediate-term recall of verbal and pictorial information.

Rapid Naming: Simple vs. Complex

Discrepancy Comparisons	Ability Score 1	Ability Score 2	Diff.	Critical Value	Sig. Diff. Y / N
Simple Naming – Complex Naming	117	95	22	21	Y

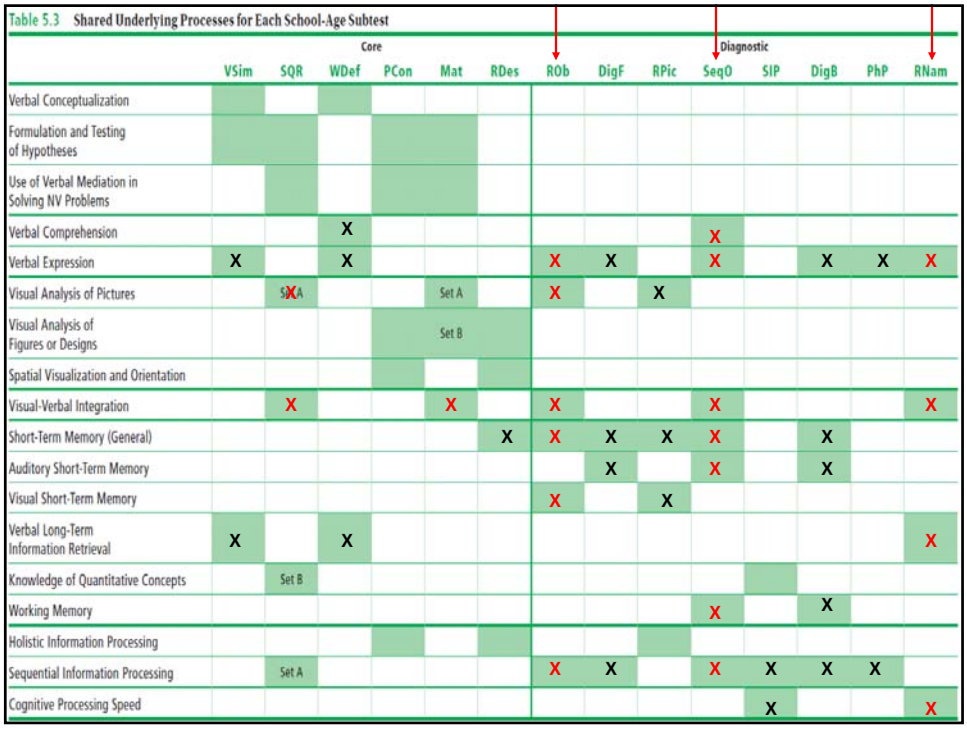

Table 5.3 Shared Underlying Processes for Each School-Age Subtest

	Core						Diagnostic							
	VSim	SQR	WDef	PCon	Mat	RDes	RObj	DigF	RPic	SeqO	SIP	DigB	PhP	RNam
Verbal Conceptualization														
Formulation and Testing of Hypotheses														
Use of Verbal Mediation in Solving NV Problems														
Verbal Comprehension			X							X				
Verbal Expression	X		X				X	X		X		X	X	X
Visual Analysis of Pictures		Set A			Set A		X		X					
Visual Analysis of Figures or Designs					Set B									
Spatial Visualization and Orientation														
Visual-Verbal Integration		X			X		X			X				X
Short-Term Memory (General)						X	X	X	X	X		X		
Auditory Short-Term Memory								X		X		X		
Visual Short-Term Memory							X		X					
Verbal Long-Term Information Retrieval	X		X											X
Knowledge of Quantitative Concepts		Set B												
Working Memory										X		X		
Holistic Information Processing														
Sequential Information Processing		Set A					X	X		X	X	X	X	
Cognitive Processing Speed											X			X

Phonological Processing

Discrepancy Comparisons	Ability Score 1	Ability Score 2	Diff.	Critical Value	Sig. Diff. Y / N
Rhyming - Blending	100	110	-10	33	N
Rhyming - Deletion	100	89	11	26	N
Rhyming – Phoneme ID & Segmentation	100	76	24	27	N
Blending - Deletion	110	89	21	26	N
Blending – Phoneme ID & Segmentation	110	76	34	27	Y
Deletion – Phoneme ID & Segmentation	89	76	13	19	N

Wechsler Individual Achievement Test–Third Edition		
Composite/Subtests	Standard Score (Mean=100)	Percentile Rank
Oral Language	96	39
Listening Comprehension	100	50
Oral Expression	95	37
Basic Reading	70	2
Word Reading	66	1
Pseudoword Decoding	77	6
Reading Comprehension and Fluency	72	3
Reading Comprehension†	87	19
Oral Reading Fluency†	63	1
Written Expression	81	10
Spelling	78	7
Sentence Composition	80	9
Mathematics	102	55
Numerical Operations	105	63
Mathematics Problem Solving	98	45
Mathematics Fluency	107	68

† Score for Reading Comprehension and for Oral Reading Fluency is based on grade 1 item set.

Cognitive Strengths and Weaknesses and Achievement

Is Winston eligible for and does he need direct specialized instruction?

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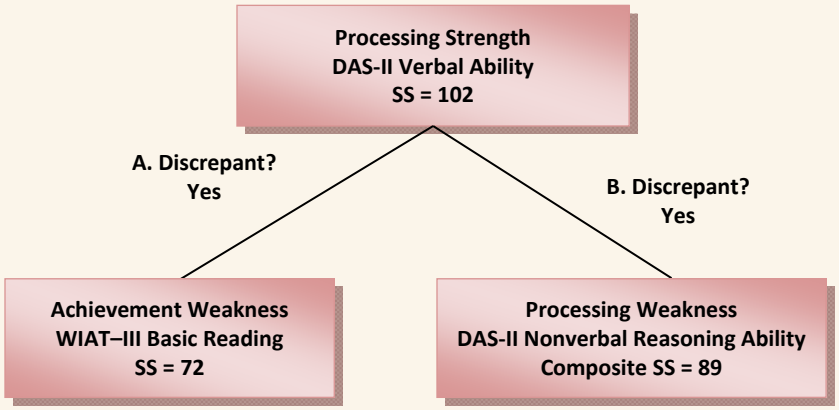
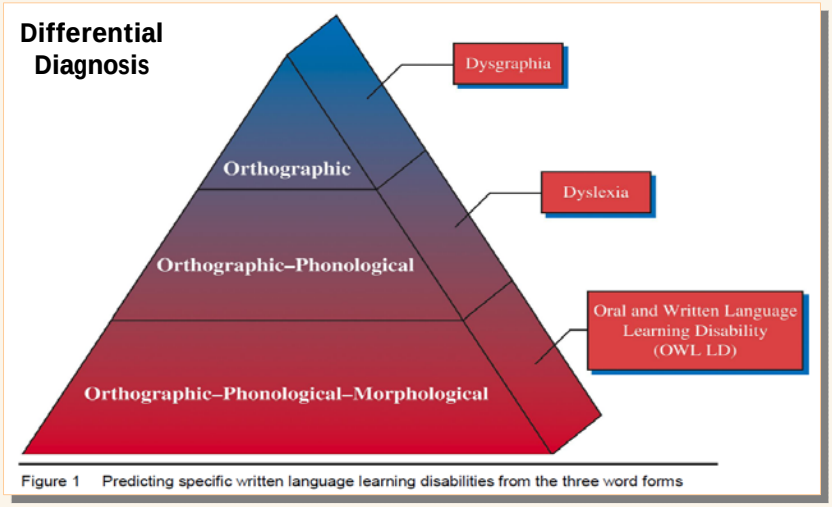
Pattern of Strengths and Weaknesses



Written Language Problems and the Three Word Forms (Berninger, 2003)



Intervention

Beginning Reading
Subword, Word, and Text Level
(Berninger, 2003)

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Instructional Components for Reading

Facilitate development of all levels of language

- **Subword**
- **Word**
- **Text**

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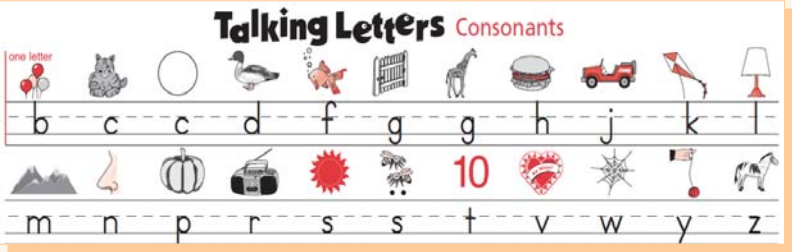
Subword Level

Use Talking Letters Student Desk Guide to teach letter(s) – phoneme correspondences in alphabetic principle (spelling to phoneme direction).



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Word Level

Use teacher-constructed word card deck to teach Winston to apply the alphabetic principle to monosyllabic word reading.

FRONT OF CARD	BACK OF CARD
b a t	bat
n u t	nut
m e n	men

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Text Level

Use beginning paperback books and have students practice oral reading and reading for personal meaning.

- *Itchy, Itchy Chicken Pox* by Grace Maccarone, Scholastic.
- *Monkey See, Monkey Do* by Marc Gave, Scholastic.
- *At the Carnival* by Kirsten Hall, Scholastic.
- *I See a Bug* by Kirsten Hall, Scholastic.
- *Buzz Said the Bee* by Wendy Cheyette Lewison, Scholastic.
- *Here Comes the Snow* by Angela Shelf Medaris, Scholastic.
- *Bubble Trouble* by Mary Packard, Scholastic.
- *A Bad, Bad Day* by Kirsten Hall, Scholastic.
- *We Play on a Rainy Day* by Angela Shelf Meadows, Scholastic.
- *I'm a Seed* by Jean Marzollo, Scholastic.
- *I Love Cats* by Catherine Matthias, The Children's Press.
- *My Five Senses* by Aliki, Harper Collins.

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Other Interventions

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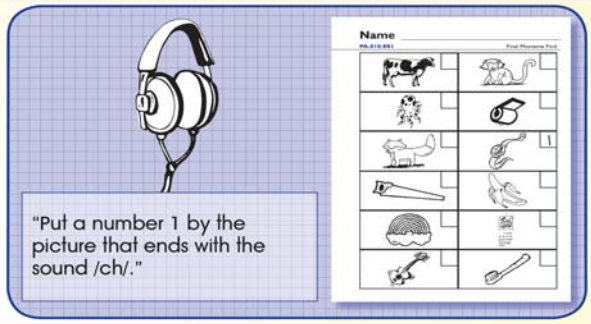
Phonemic Awareness

Given specific words, student matches phoneme in initial, final, and medial position.



(Florida Center for Reading Research)

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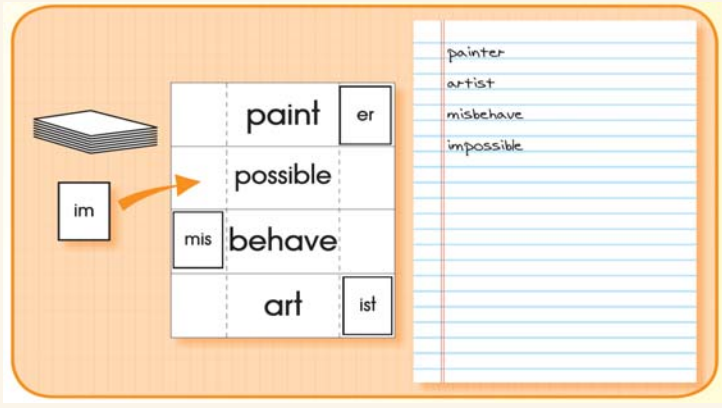
Phonics–Morpheme Structures

The student will blend base words and affixes.



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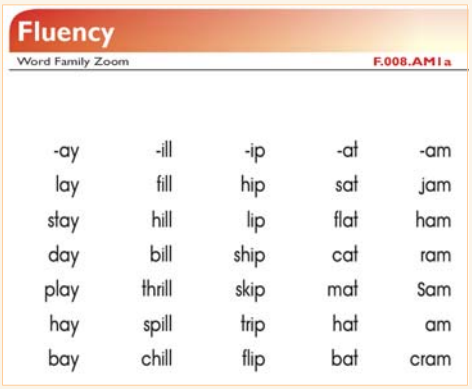
Fluency

The student will gain speed and accuracy in reading words.

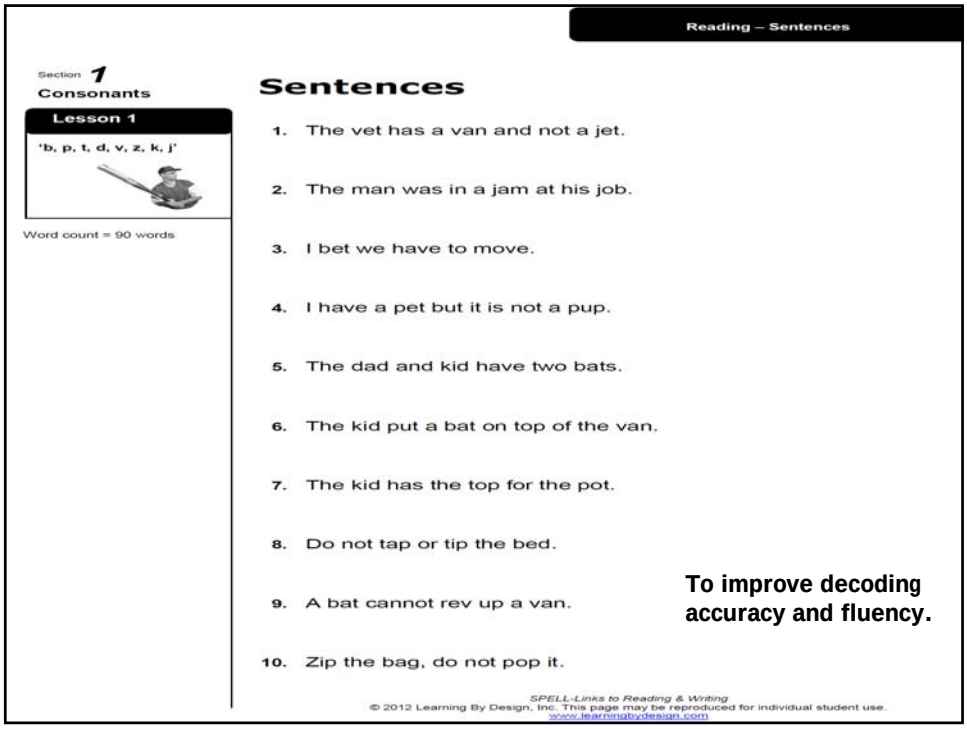


Fluency

Word Family Zoom F.008.AM1a

-ay	-ill	-ip	-at	-am
lay	fill	hip	sat	jam
stay	hill	lip	flat	ham
day	bill	ship	cat	ram
play	thrill	skip	mat	Sam
hay	spill	trip	hat	am
bay	chill	flip	bat	cram

(Florida Center for Reading Research)



Reading – Sentences

Section 1
Consonants

Lesson 1
'b, p, t, d, v, z, k, j'

Word count = 90 words

Sentences

1. The vet has a van and not a jet.
2. The man was in a jam at his job.
3. I bet we have to move.
4. I have a pet but it is not a pup.
5. The dad and kid have two bats.
6. The kid put a bat on top of the van.
7. The kid has the top for the pot.
8. Do not tap or tip the bed.
9. A bat cannot rev up a van.
10. Zip the bag, do not pop it.

To improve decoding accuracy and fluency.

Reading – Short Story

Section 1
Consonants

Lesson 1

'b, p, t, d, v, z, k, j'

Word count = 442 words, including title

A Trip to the Zoo

We had never been to the zoo. So, one day my dad said we would jump on the bus and go to the zoo. We did not have to pay because we had a pass. My dad said we could take one thing with us. I wanted to take my baby doll. My brother wanted to take his box of toy jets. My kid sister wanted to take her bike but my dad said no because it was too big. So, my sister decided to take a ball. We took a long time to get ready and then we all forgot our toys.

We wanted to know what we would see at the zoo. On the bus I asked my dad if we would see any dogs. He said no. My brother asked if we would see any bees. Dad said no. My sister asked if we would see any pigs. My dad said maybe.

When we got to the zoo, we went to see the barn animals first. We saw two pigs sleeping in a pool full of mud. I said I would not want the job of cleaning up that big mess. We also saw a pony that had a bell around his neck. Next we saw the bunnies. My sister wanted to pick up the little bunny, but my dad said no. He said she could just pet it. The bunny was very soft.

Then we went to see the birds. We saw birds eating peanuts out of a dish. Dad said some birds make good pets. At the bird house we also saw ten tiny turtles with little dots on their backs. Sometimes, these tiny turtles would pop their heads out and look at us.

My brother wanted to see the tigers, so we went there next. I asked my dad if I could have a tiger for a pet but he said no. The bears were next to the tigers so we got to see them too. These bears were dark brown and very big. One of the bears was jumping up and down and putting on a show.

When it was getting dark, my dad said it was time to take the bus home. But before we left the zoo, we went into the gift store. My dad said we could each pick out one thing. I picked out a balloon, my brother picked out a kite, and my sister picked out a book.

On the bus ride home, I told my dad, "Boy, I had the best day! Now we can tell everyone that we have been to the zoo."

To improve decoding accuracy and fluency.

SPELL-Links
Word Decoding Strategies

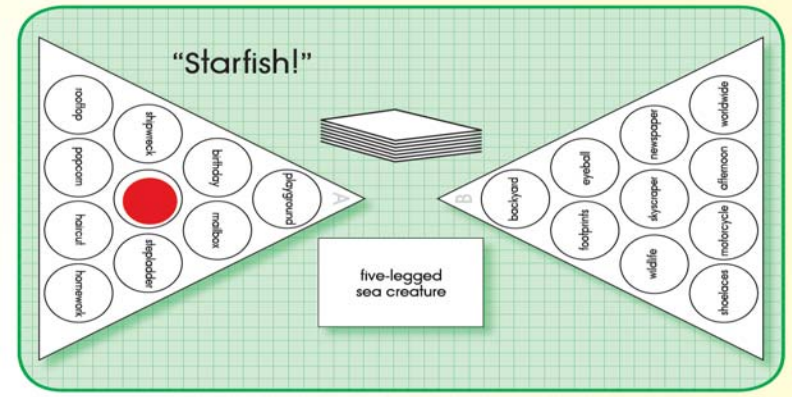
1. **Sound It Out:** Sound out a word using "continuous voicing", which is the process of sounding out each letter or digraph/trigraph/quadgraph in a word and blending one sound into the next without pausing between sounds. Be sure to pronounce the word naturally after decoding it.
2. **Check the Order:** Look carefully at each letter in a word and make sure to say the sounds in the same order as the letters.
3. **Catch the Beat:** For a longer word, closely examine the vowel letters of the word to identify the number of syllables or beats in the word. Then read the word one beat at a time.
4. **Listen Up:** Pay careful attention to the vowel sounds in the stressed syllable(s) of a word. Change vowel pronunciation from a long sound to a short sound, or vice versa, and listen up to hear if a different pronunciation of the vowel sound "rings a bell" (i.e., leads to correct word recognition).
5. **A Little Stress Will Help This Mess:** Identify the number of syllables in a word and pronounce the word that many times, each time stressing a different syllable in the word until the pronunciation "rings a bell".
6. **No Fouls:** Check to make sure that each letter or digraph/trigraph/quadgraph is pronounced correctly by trying different possible pronunciations of each letter and digraph/trigraph/quadgraph.
7. **Play by the Rules:** Use knowledge of common spelling rules to guide correct pronunciation (e.g., if a word ends with 'ck', the preceding vowel sound will not be a long vowel sound).

SPELL-Links
Word Decoding Strategies

8. **Use Rhyme This Time:** Look at all the vowel letters and the following consonant letters, if any, in the last syllable of a word. Think of a word that has the same word ending.
9. **Spell What You Mean and Mean What You Spell!:** Think about the meaning of a word in the context of what you are reading about. The word's meaning can help you pronounce the word properly but always look at all the letters in the word to make sure you correctly identified it—*do not guess and go!*
10. **Be Smart About Word Parts:** Examine a word carefully to identify meaningful word parts—prefixes, roots, suffixes—then read the word one part at a time.
11. **Build on the Base:** Examine a word carefully to see if you recognize one or more words inside the word; look for words that make sense in the context of what you are reading.
12. **Invite the Relatives:** After identifying the word root or base word, think of its relatives; a relative might help you identify the word you are reading.
13. **Fix the Funny Stuff:** After carefully decoding a word, ask yourself if the word you pronounced makes sense in the context of what you are reading. If the word makes what you read seem "funny", retry strategies or try different strategies until the word makes sense in context.
14. **Look It Up:** Look up a word in a talking dictionary to hear the correct pronunciation of the word.

Vocabulary

Students identify the meaning of compound words.



(Florida Center for Reading Research)

Interventions for Vocabulary

National Reading Panel recommends

- using vocabulary words from content-learning materials.
- providing explicit instruction for vocabulary.
- pre-teaching new words.
- teaching as many connections to a specific word as possible with multiple exposures to a word.

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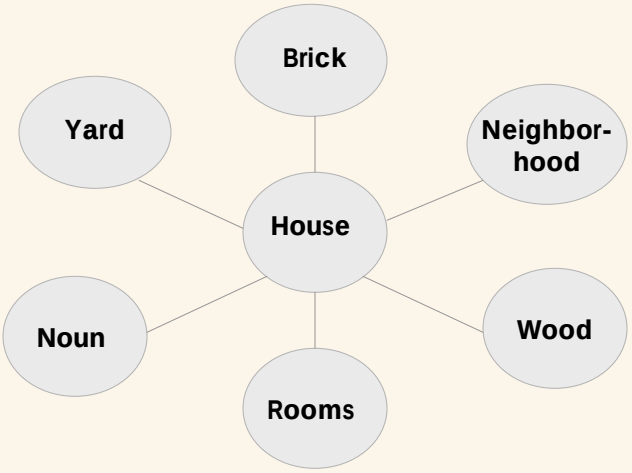
Teaching Vocabulary Word Web



(Joseph, 2006)

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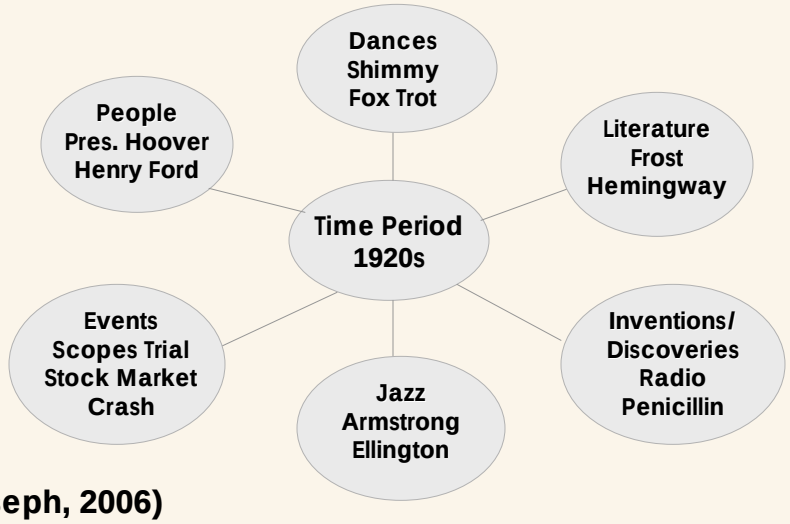
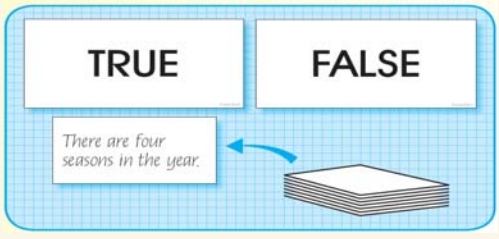
Teaching Vocabulary Semantic Map



(Joseph, 2006)

Comprehension

- Narrative Text Structure
- Expository Text Structure
- Text Analysis
- Monitoring for Understanding - use background knowledge to comprehend text.



(Florida Center for Reading Research)

Interventions for Comprehension

- Monitoring comprehension
- Using graphic and semantic organizers
- Answering questions
- Generating questions
- Recognizing story structure
- Summarizing

(National Reading Panel, June 2003)

Monitor Comprehension

Thomas Edison

Thomas Alva Edison was one of the greatest inventors of the 19th century. He is most famous for inventing the light bulb in 1879. He also developed the world's first electric light-power station in 1882.

Edison was born in the village of Milan, Ohio, on Feb. 11, 1847. His family later moved to Port Huron, Michigan. He went to school for only three months, when he was seven. It is warm in the summer. After that, his mother taught him at home. Thomas loved to read. At twelve years old, he became a train-boy, selling magazines and candy on the Grand Trunk Railroad. He spent all his money on books and equipment for his experiments.

http://www.thinkport.org/

Phonological STM Interventions

Most interventions to improve short-term memory involve rehearsal training.

Rehearsal Strategies

- **Say the material over and over to oneself.**
- **Engage in serial repetition. This allows information to be maintained in WM for longer periods of time, thus enhancing short-term recall. Elaborative rehearsal facilitates long-term storage.**

Additional Phonological STM Interventions

- **Naming letters and objects**
- **Repeating spoken sentences**
- **Reciting nursery rhymes**
  - **Highlights the phonological structure of language**
- **Rhyming games**
  - **Enhance phonemic awareness and the ability to store phonological information**

Verbal Working Memory Interventions

Elaborative Rehearsal

- **Associate meaning with stimuli.**
- **Keeps information active in WM without repetition and also facilitates moving information to LTM.**

Semantic Rehearsal

- **Brief sentences using the word to be remembered.**

Verbal Working Memory Interventions

Chunking

- **Pairing, clustering, grouping, or association of different items into units that are processed and remembered as a whole. This facilitates short-term retention and encoding into long-term storage.**

Verbal Working Memory Interventions

Paraphrasing

- **A strategy that builds on both rehearsal and chunking. Students restate information in their own words. This requires that they reorganize and condense a large amount of linguistic information into smaller, well-integrated, and more personally meaningful units.**

Executive Working Memory Interventions

Dual Encoding

- **Strategies utilizing concurrent visual and verbal encoding.**
- **Some dual encoding occurs naturally (reading).**
- **In the classroom, visual and verbal materials should be utilized.**

Executive Working Memory Interventions

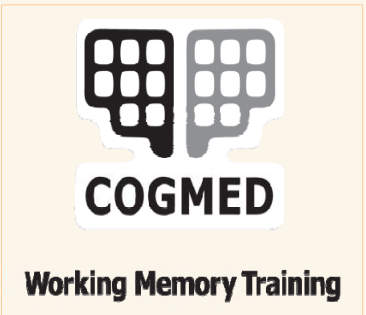
Organizational Strategies

- **Fitting existing information into an organized structure (semantic category).**
- **Structuring and organizing information reduces the processing load on WM, thereby allowing more efficient encoding of material into long-term retrieval.**
- **Organizing information involves rehearsal and the processing of information at a deeper level.**

Working Memory Training

An Evidence-based intervention for working memory training.

www.cogmed.com



Working memory is key for academic performance

Fifteen percent of all students have working memory deficits causing them to perform below average in many areas of learning.

Working memory is crucial for areas such as math, reading comprehension, complex problem solving, and test taking.

Working memory is an essential function in every day life

- **Processes all stimuli we encounter.**
- **Delegates stimuli to the different parts of our brain that can take action.**
- **Allows us to block out unnecessary information.**
- **Keeps us updated on what's happening – and keeps us focused on what matters.**

. . . makes working memory training possible.

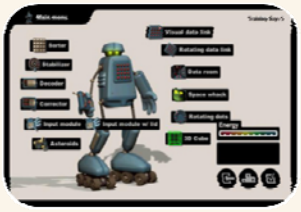
The brain can physically change in response to focused repeated intensive activity – training.

Cogmed Working Memory Training

An evidence-based intervention for working memory

Three Levels

Cogmed JM
preschoolers



Cogmed RM
school-age children

Cogmed QM
adults

All share the same underlying design – the only difference is in the user interface

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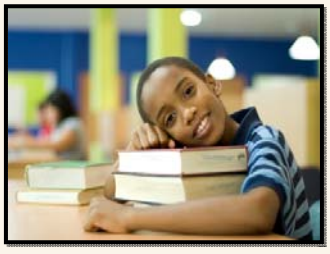
Who is a Cogmed candidate?



- Is easily distracted.
- Has trouble waiting his/her turn.
- Struggles with comprehending what he/she reads.
- Struggles with problem solving that requires holding information in mind - such as math calculations.
- Struggles with completing tasks, especially multi-step tasks.
- Has difficulty integrating new information with prior knowledge.
- Has difficulty taking notes and listening at the same time.

Cogmed can be used Pre-K through adulthood by individuals with poor working memory

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The student's experience

www.training.cogmed.com

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Summary

Effective instruction and intervention for reading must focus on all levels of language.

- **Phonological Awareness**
- **Orthographic Awareness**
- **Sound-Symbol Relationship**
- **Fluency**
- **Comprehension – including vocabulary and morphological awareness.**

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