



# BBBD Supports and Interventions



Using the *Building Blocks of Brain Development* to Support Students with Learning Disabilities

Peter Thompson, Ed.S., Ph.D.





# Module 3.1

## BBBD: Supports and Interventions

### **Intermediate Level: Language Processing Supporting Language Problems in the Classroom**



# Important Note

---

The information, concepts, and models provided in this presentation are intended to give practitioners a framework when conducting special education evaluations and employing interventions. It is emphasized that nothing in this presentation is meant to be directive or prescriptive.

Professionals are free to use some, or all of the information presented, but they are not required to do so in their practice. **Always consult with your special education director for clarity around district policies and expectations for special education evaluations.**



**IMPORTANT** 

# Consideration of Terms

---

- The full and correct term is the *Building Blocks of Brain Development*© (BBBD)
- For this presentation, referred to many ways such as the BBBM or BBBD
- For this presentation, the BBBM or BBBD is used to describe brain function more than development



# Learning Outcomes

---

- Understand the nature of language functions and its impact on learning
- Learn effective interventions for language and reading problems
- Learn about effective classroom accommodations for language and reading difficulties



# Presentation Organization

---

## I. Review BBBD and Language Processes Key Concepts

- A. Receptive Language
- B. Expressive Language
- C. Reading (Note: Extensive Information; Learning to read and reading to learn)

## II. Language and Reading Supports

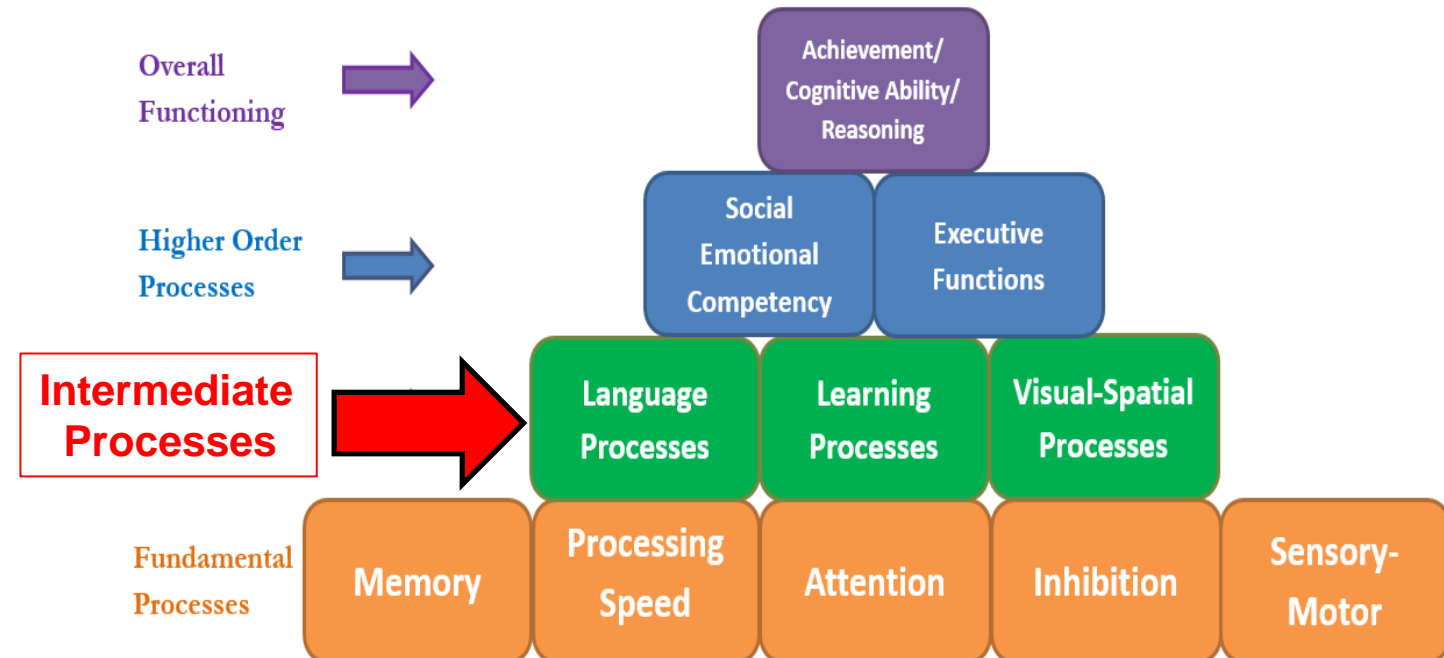
- A. Expert Guidance
- B. Interventions (Receptive, Expressive, Reading)
- C. Accommodations



## What Are Intermediate Processes? Impact on Learning and SLD

- Success within this level is based on proper functioning of fundamental processes.
- Critical difference is the integration of functions to process complex information.
- Acquisition of specific information and broad knowledge-critical for later use-(skills).

## Building Blocks of Brain Development ©



The Hierarchy of Neurocognitive Functioning © - created by Peter Thompson, Ph.D. 2013, adapted from the works of Miller 2007; Reitan and Wolfson 2004; Hale and Fiorello 2004.

The Building Blocks of Brain Development © – further adapted by the CO Brain Injury Steering Committee, 2016.



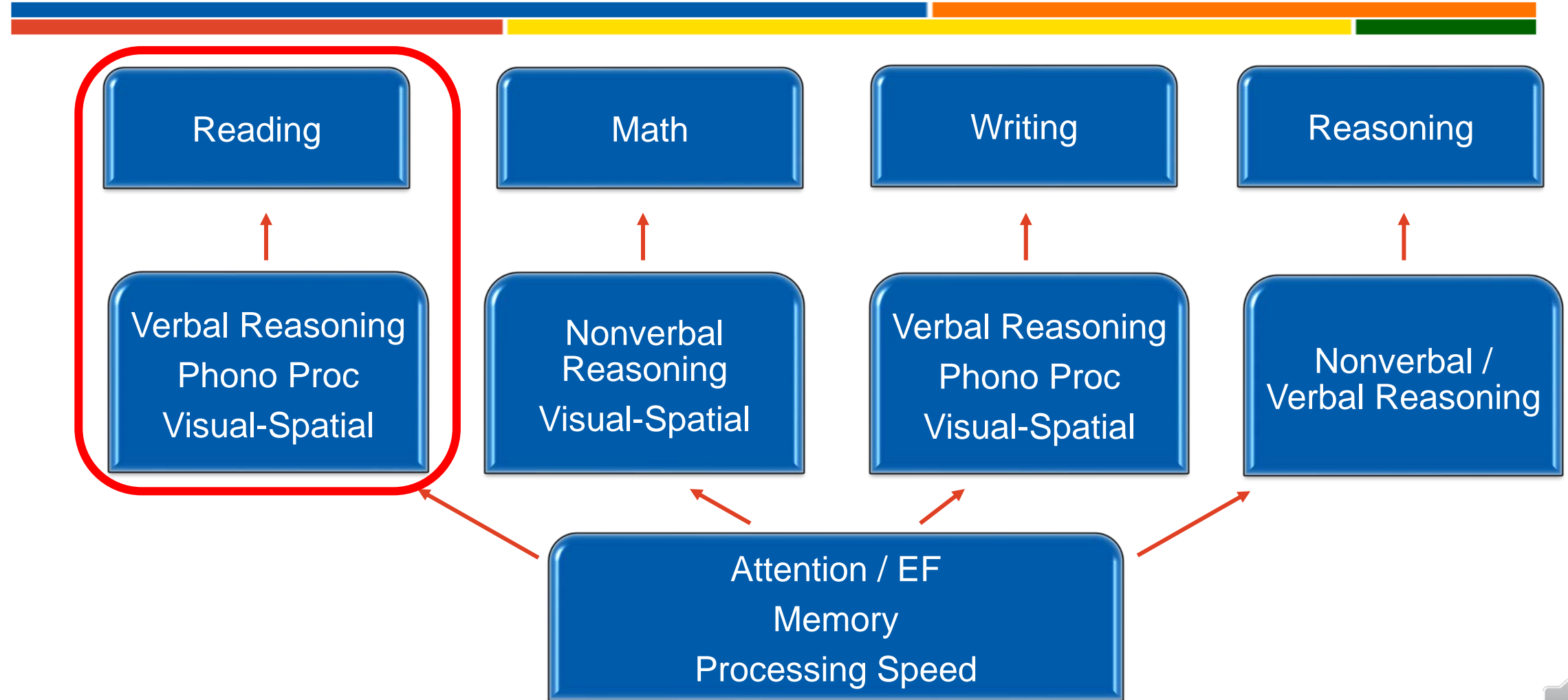
# Intermediate Processes: Language Key Concepts

- Language is a complex neurocognitive process that needs the successful integration of several brain-based functions. *“Language is the vehicle for thought.”*
- Essential for communication, deep thinking, creativity, problem solving, social language. We “talk through our problems and reflect on our state of being.”
- Importance is seen in an entire brain hemisphere largely dedicated to language,--the left brain hemisphere.
- Phonological processes subsumed within the *Language* block-critical for reading.





# Language Especially Impacts Reading



## **II. Language Supports and Interventions**

- 1. Expert Guidance**
- 2. Interventions**
- 3. Accommodations**



# 1. Expert Guidance



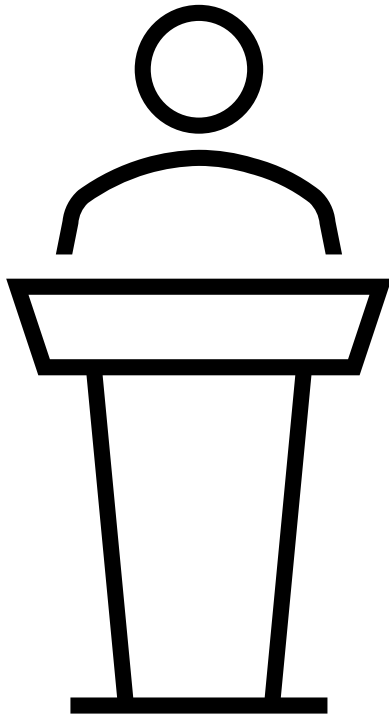
# 1. Expert Guidance



- ✓ Critical! Remember to develop a positive philosophy of SLDs. Attitudes about SLDs will impact the success of student interventions. Re-assure students, stay positive and expect realistic gains!



# 1. Expert Guidance



- ✓ Most SLD referrals center on reading problems, which are related to language issues.
- ✓ Most reading problems are caused by phonological deficits.
- ✓ Consult with your SLP for reading, expressive, and receptive language issues.



# 1. Expert Guidance



- ✓ Students with “Double Deficits” or “Triple Deficits” sometimes do not respond well to reading interventions.
- ✓ Ready yourself that progress can be very slow, but positive.
- ✓ Be critical of commercial intervention programs. No “one-size” fits all!



# 1. Expert Guidance



- ✓ Students with language problems may look confused and/or not attentive.
- ✓ S/L students need help expressing themselves and understanding verbal lectures.
- ✓ May impact social and emotional development.



## 2. Intervention





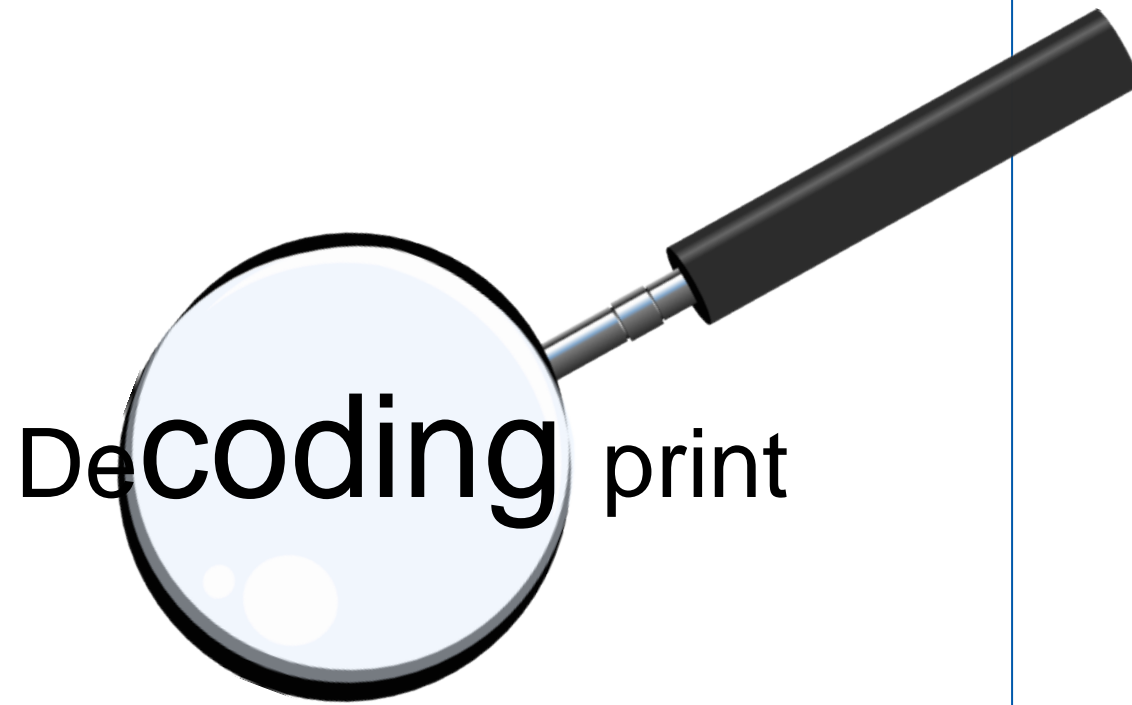
## 2. Interventions: Explicit and Direct Instruction Works!

For ALL intervention suggestions related to the BBBD, the most common research supported intervention is *Explicit and Direct Instruction*...longstanding, not fancy, but it is effective if done with fidelity.

- Note: See this *Module 3.1 Resources Folder* for this module to access resources for implementing explicit instruction best practices.
- **Explicit Direct Instruction Resource:**  
<https://education.ky.gov/school/stratclsgap/instruction/Documents/Direct%20Explicit%20Instruction%20Model.pdf>



# Learning to Read vs Reading to Learn



Cracking the code



Reading for information and  
comprehension



## Key Reading Concept

If our expectation is for a child to become an independent reader, interventions for comprehension will not be effective if decoding issues are not first addressed.



## Key Reading Concept

However, all students need to have access to grade level content. Technology supports or other accommodations need to be used to help with access IN ADDITION to remediating decoding deficits.

Up next: Video on reading comprehension



# Anita Archer: Reading Comprehension is an Outcome

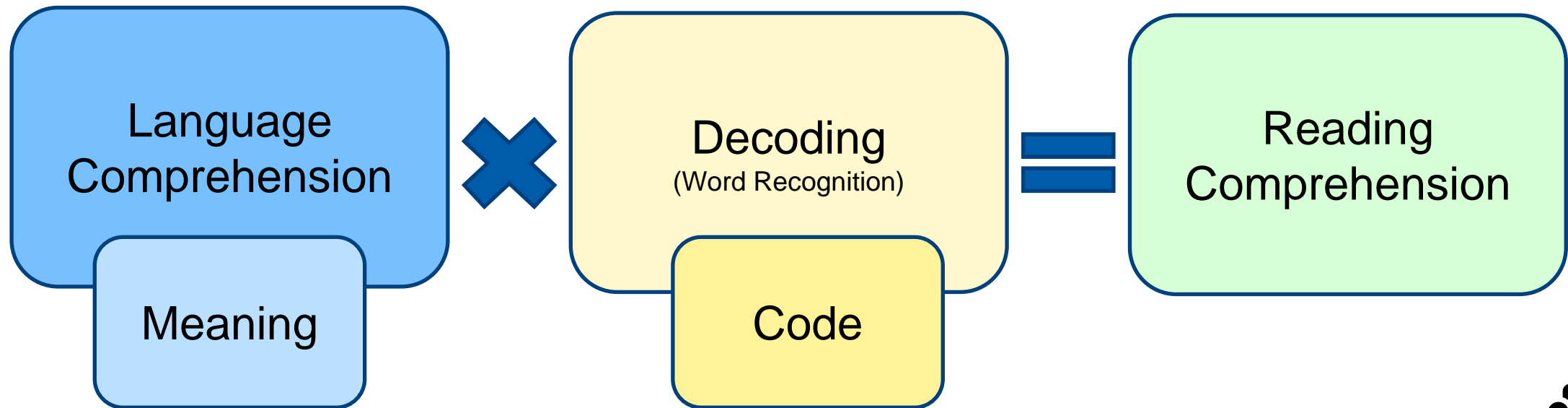
---



This excerpt was taken from the Pennsylvania Training and Technical Assistance Network (PaTTAN). The full webinar can be watched here: <https://youtu.be/UqyD Dd6phvc>

## 2. Interventions: *(C) Reading*

The *Simple View of Reading*  
It's Literally an Equation



# Reading: Infographic

## THE SIMPLE VIEW OF READING

$$R = D \times LC$$

READING [COMPREHENSION]

DECODING

LINGUISTIC COMPREHENSION

### DECODING

#### CIPHERING KNOWLEDGE

- Letter-Sound Knowledge
- Orthographic Knowledge
- Phonological Awareness
- Rapid Automatized Naming

#### WORD-SPECIFIC KNOWLEDGE

- Sight Word Memory
- Orthographic Knowledge
- Phonological Long-term Memory

### LINGUISTIC COMPREHENSION

#### LANGUAGE SKILLS

- Vocabulary/Semantic Knowledge
- Grammatical/Syntactic Knowledge
- Inferencing
- Visual-Spatial Skills

#### ATTENTION

- Comprehension Monitoring

#### BACKGROUND KNOWLEDGE

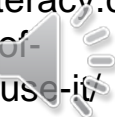
#### WORKING MEMORY

(Gough & Tunmer, 1986)  
Adapted from David Kilpatrick - Essentials of Assessing, Preventing, and Overcoming Reading Difficulties (2017)

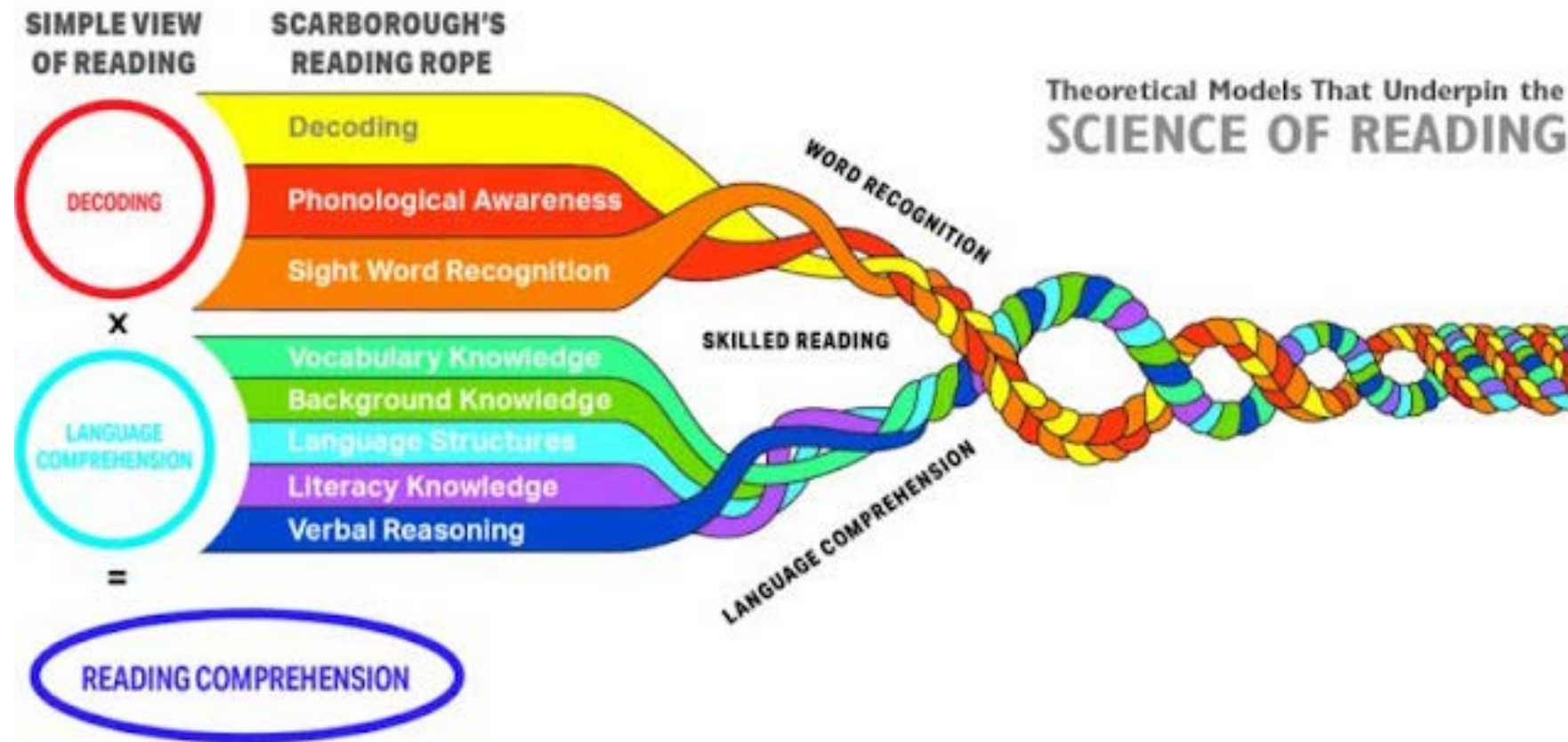
### Resource / Citation

Gough and Tunmer, 1986

<https://thinkbeyondliteracy.com/the-simple-view-of-reading-and-how-to-use-it/>



# Relationship with the Simple View of Reading





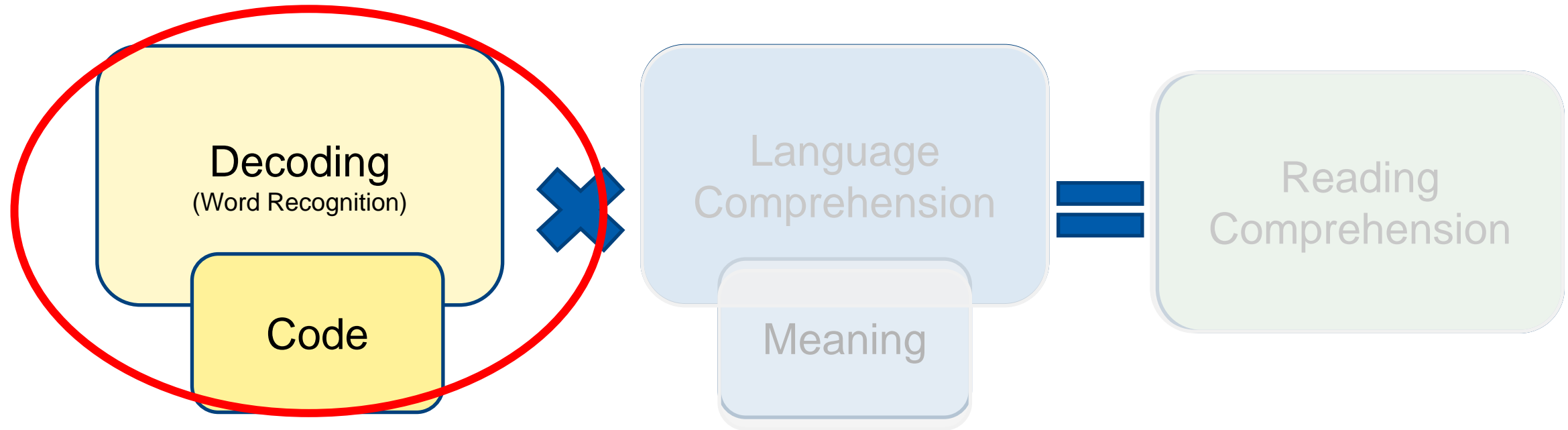
# Importance of Alignment

- It is important to align interventions with the specific language deficit
- Targeted interventions are effective as well as time efficient
- There are many components to effective reading comprehension and several places where there could be a deficit. It is important that the intervention is properly aligned to the specific deficit.
- Example: A word level reading deficit will have a different intervention than a language comprehension deficit.



# Learning to Read: Decoding

---



## 2. Interventions: Reading

---

- Determine nature and break down of reading difficulty
  - Phonological (Key to reading, most common deficit, responsive to intervention)
  - (Difficult to remediate-use visuals)
  - Working memory Processing Speed (Difficult to remediate; focus on accommodations)
  - Orthographic issues

Focus primarily on phonological interventions



## 2. Interventions: Reading

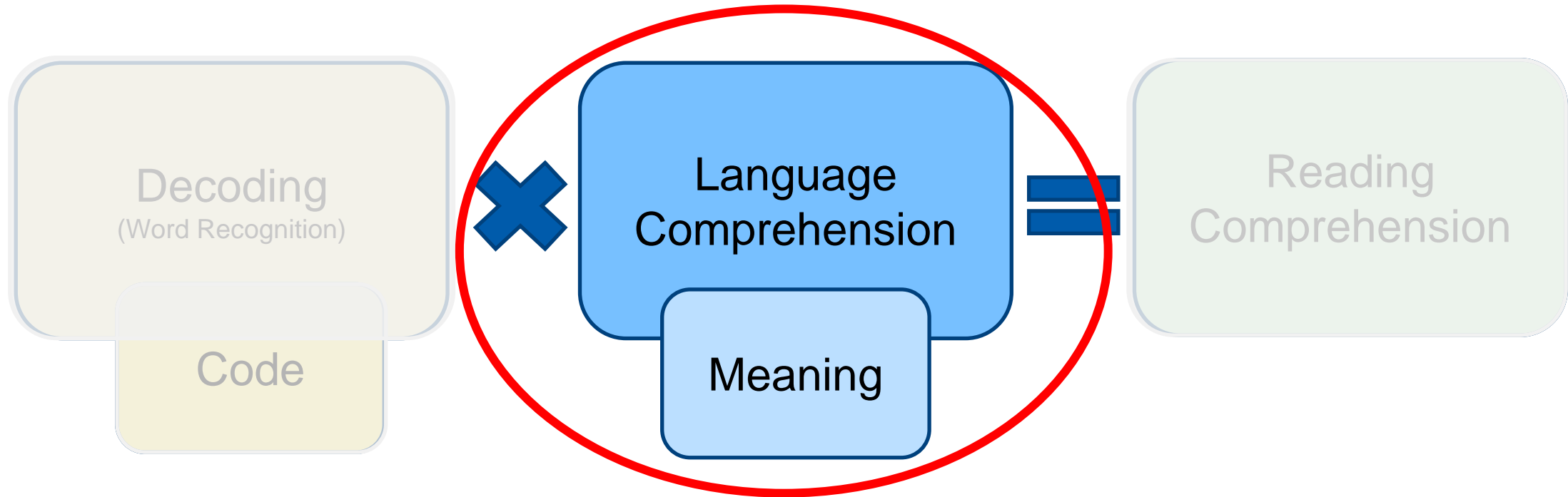
---

- **Guided Oral Reading**—Model reading a very simple, short passage fluently, then child reads the same text aloud, with support. Have the child re-read same passage until a set fluent level is attained.
- **Helpful for both phonological and orthographic issues**



# Learning to Read: Language Comprehension

---



## 2. Interventions:

### *(A) Receptive Language*

- Significant interventions need SLP consultation
- Give reason “why” (cognitive component)
- Build verbal reasoning
  - Vocabulary-build within authentic environment
  - Connect to what is known-personal experiences
  - Picture vocabulary
  - Word games
  - Short paragraphs (comprehension)
    - Read aloud and describe content (1-3 sentences)



## 2. Interventions:

### *(B) Expressive Language*

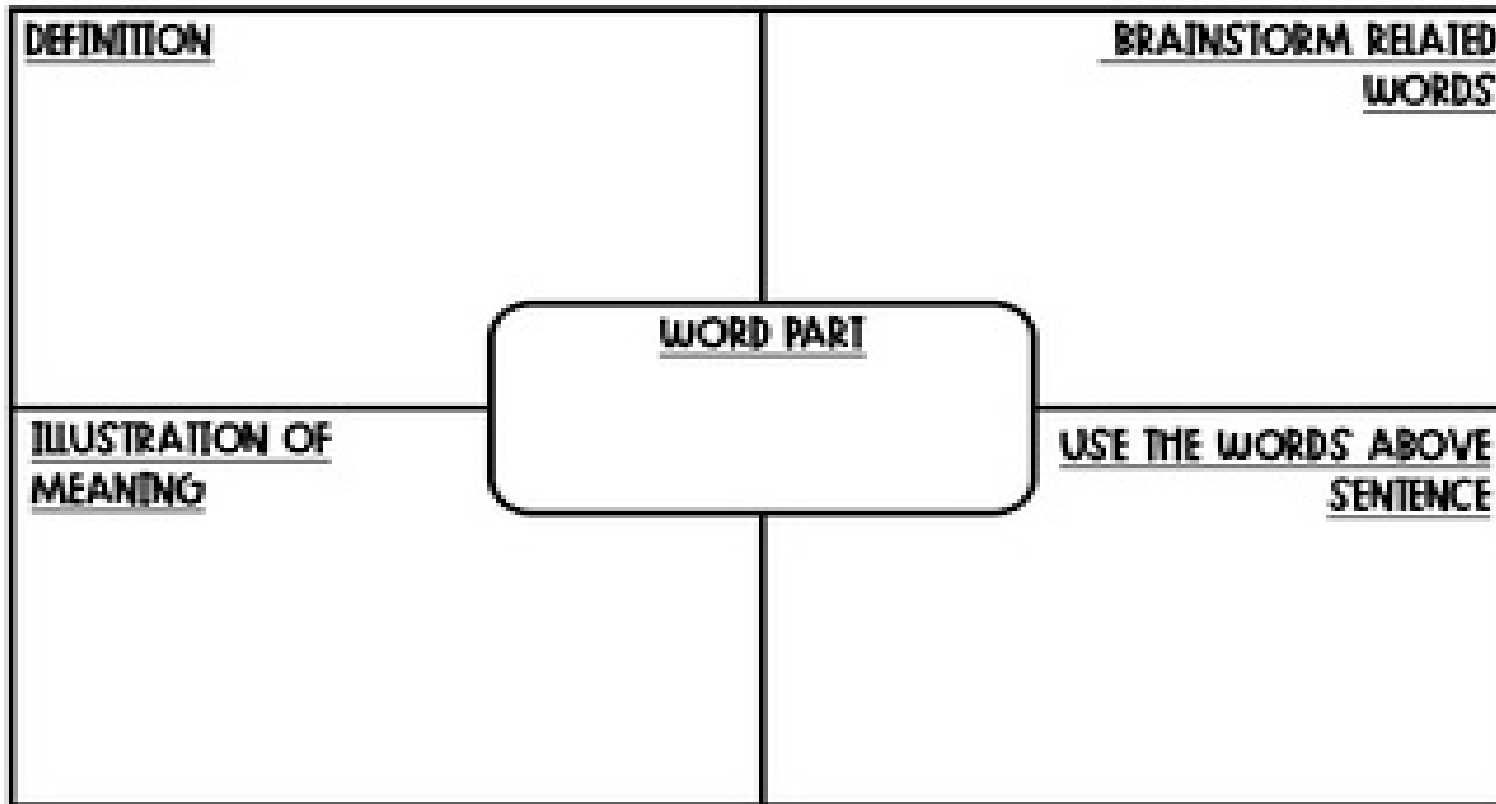
---

- SLP Consultation
- Give reason “why” (cognitive component)
  - Build conversational skills within authentic environment
  - Describe personal experiences
  - Teach and practice conversations (model)
  - Teach “Tell me how”
  - Vocabulary – synonym and antonym game



## 2. Interventions: Receptive Language

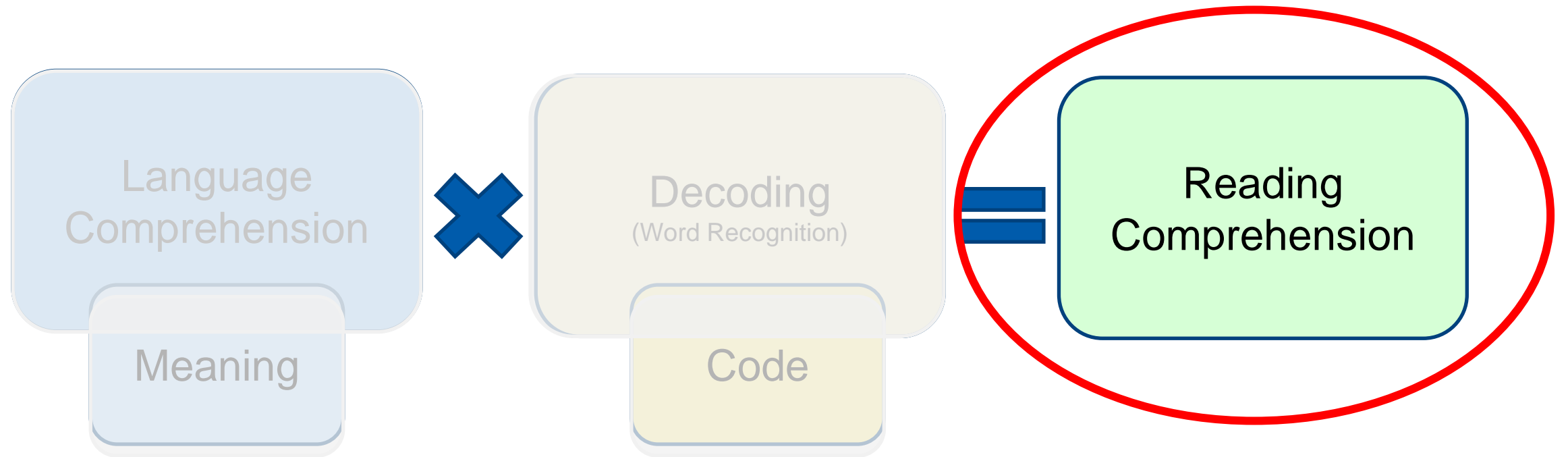
Use Graphic Organizers to Build Vocabulary





# Reading to Learn: Comprehension

---



# Reading Comprehension

---

## Components of Good Reading Comprehension Instruction

- Activate prior knowledge about a topic or concept
- Monitor comprehension and correct misunderstandings while reading
- Use graphic organizers to relate information from the text
- Answer different kinds of questions about the text
- Generate questions about the material in the text

From: <https://iris.peabody.vanderbilt.edu/>

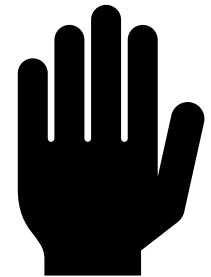


# Reading Comprehension: Using a Hand Technique

---

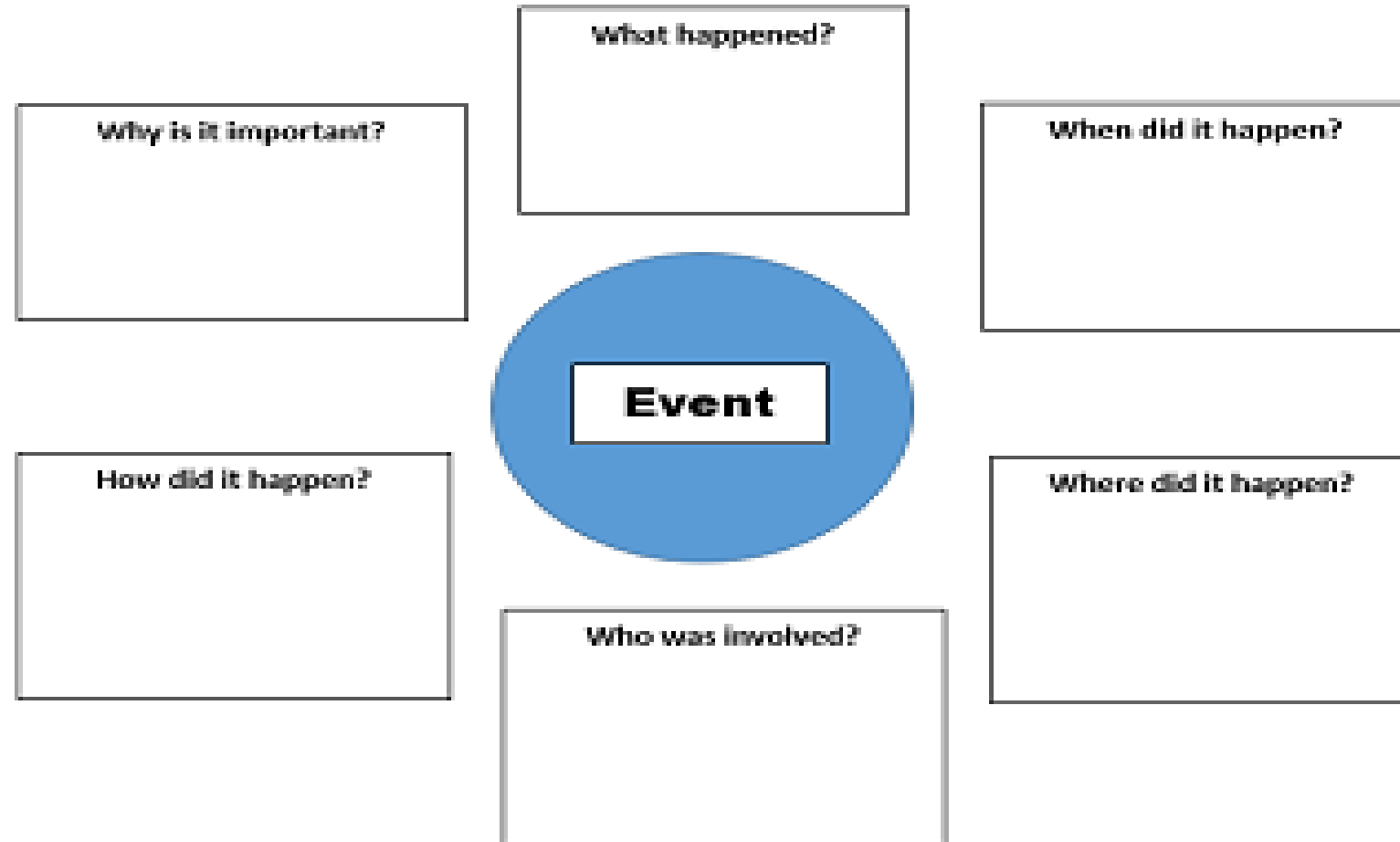
Process aloud with student

1. Thumb–Somebody: Who is the story about?
2. Pointer Finger–Wanted: What do they want?
3. Middle Finger–But: What problem do they run into?
4. Ring Finger–So: What do they do to solve the problem?
5. Pinky–Finally: How did the story end?



# Graphic Organizers: Comprehension

- Simple, but Effective



# Reading Comprehension: SQ3R

Key is to Question



Survey

- survey the entire chapter by scanning the titles, headings, pictures and chapter summaries to obtain a general understanding of the concept

Question

- As you survey, actively ask yourself questions about the information in the various sections.

Read

- Actively read for comprehension to locate the concepts and facts.

Recite

- Transfer information to long term memory by answering the questions in your own words.

Review

- Practice and rehearse the main ideas / concepts then reflect on key learning concepts



# 2. Interventions: Reading

## Resources

- Anita Archer Videos  
<https://explicitinstruction.org/>
- Reading and the Brain: Strategies  
<https://www.ldatschool.ca/teaching-the-brain-to-read-strategies-for-enhancing-reading-decoding-fluency-and-comprehension/>
- Understood: Inside Dyslexia and What Works  
Video: <https://www.youtube.com/watch?v=ex3X3loPqXg>



## 2. Interventions: How to Choose the Right Programs (Not a “Cure-all”)

---

Resources for finding effective commercially available interventions:

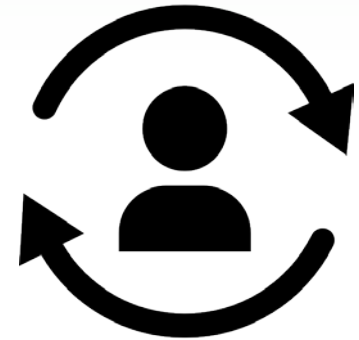
- CDE Advisory List for Instructional Programming
- CDE Guidance for Selecting Scientifically and Evidence-Based Instructional Programs
- Ed Reports
- NCII Tools Chart



(Links can be found in the Module 3.1 resources folder)



# 3. Accommodations



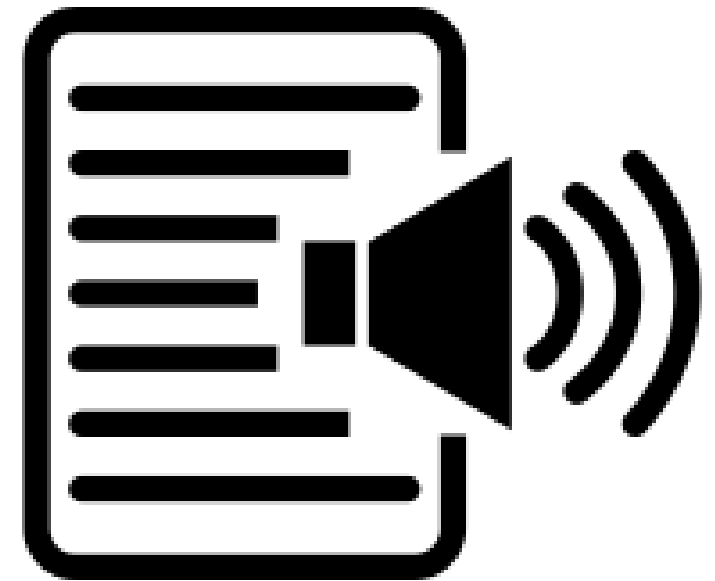


# Reading Below Grade Level?

---

## **Remediate AND accommodate!**

If a student is reading below grade level, it is imperative that assistive technology is used so that the student can access grade level content.



# 3. Language: Reading

---

- Provide audio books—teach read along
- Pair pictures to reading passages—ask, “Does the picture match the reading passage, “how?”
- Connect reading passage to personal experience (key)
- Allow for alternative ways to express and acquire knowledge

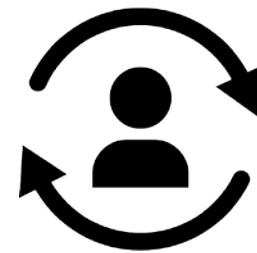


# 3. Language: Expressive and Receptive

---

- Use visuals when describing new concepts
- Prep before call on in class
- Teach self-advocacy—actively seek help when don't understand
- Actively check for understanding--Ask students to retell directions and describe new concepts





# 3. Accommodations

---

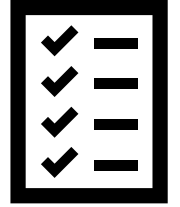
Resource: Language Accommodations

<https://cokidswithbraininjury.com/educators-and-professionals/brain-injury-matrix-guide/>

<https://www.understood.org/articles/en/common-classroom-accommodations-and-modifications>



# Summary



- Language is a critical brain function that is complex and integrates several fundamental brain processes. Language is needed for thinking, problem solving, emotional regulation, reading, and writing.
- BBBM-Language subsumes phonological processes, verbal reasoning, expressive, and receptive language.
- Reading interventions that focus on phonological processes are typically most effective. Commercially available reading intervention programs should have a large phonological remediation core component.
- Interventions are varied and complex. Always consult with your SLP! Use of visuals, checks for understanding, and vocabulary building is key.





# Thank You For Listening

## End of Module 3.1



**Using the *Building Blocks of Brain Development* to  
Support Students with Learning Disabilities**

Peter Thompson, Ed.S., Ph.D.

