Charting the Cs
Cooperation . Communication . Collaboration
STATEWIDE PROFESSIONAL DEVELOPMENT TO SUPPORT THE WORKFORCE & LOW INCIDENCE DISABILITY AREAS

Executive Functions

Foundations for Self-Regulated Reading

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reading is thinking

Reading's Many Processes

visualizing connecting

strategic knowledge

inferring predicting

decoding & word recognition

oral language comprehension

vocabulary breadth and depth

fluency

phonemic awareness

phonics knowledge

What's the goal?

"The only purpose for reading is **to comprehend the author's message**…For a long while it was assumed that…once a reader was able to identify words on a page, comprehension of the text would follow automatically. That has turned out not to be the case."

(Wagner, Schatschneider, & Phythian-Sence, 2009, xi)

Words & Reading's Many Processes…

visualizing connecting

strategic knowledge

inferring predicting

decoding & word recognition

oral language comprehension

vocabulary breadth and depth

fluency

phonemic awareness

phonics knowledge

Coordinating Reading's Processes…

Specific reading comprehension difficulties (RCD): strong word reading but comparably low reading comprehension

oral language comprehension

vocabulary breadth and depth

fluency

decoding & word recognition

phonics knowledge

phonemic awareness

visualizing connecting

strategic knowledge

predicting inferring

Why don't they work together?

oral language comprehension

vocabulary breadth and depth

fluency

decoding & word recognition

phonics knowledge

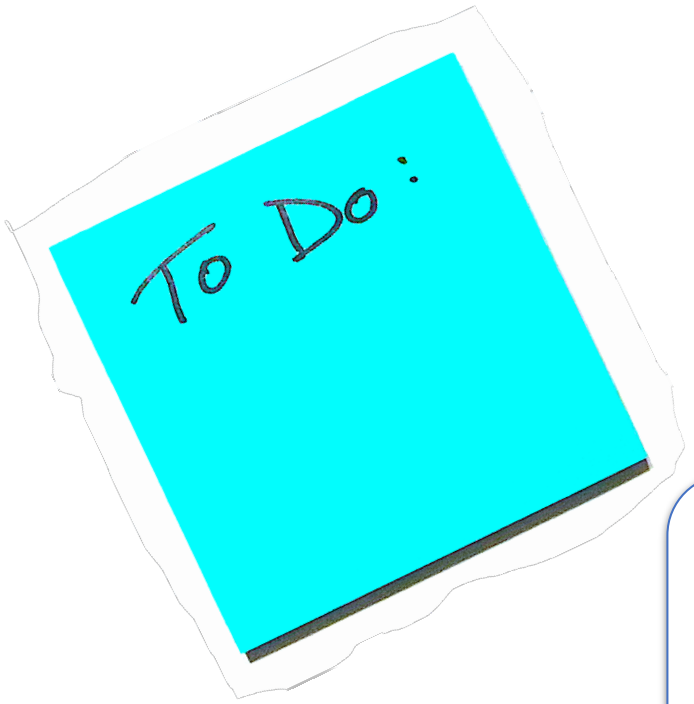
phonemic awareness

visualizing connecting

strategic knowledge

predicting inferring

Executive Function Skills
(*AKA executive functions, executive skills*)



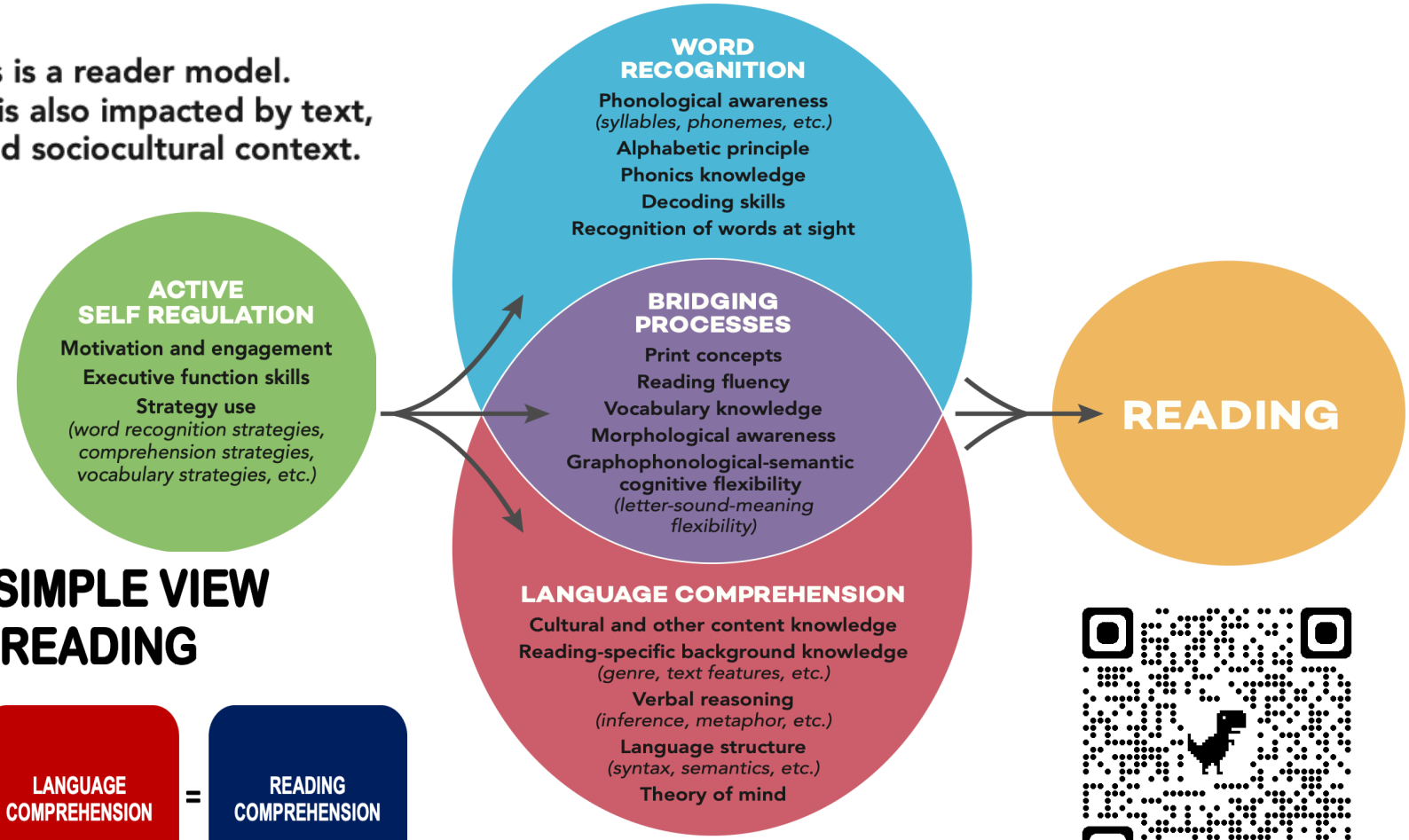
mental skills we use to manage our thoughts, feelings, & behaviors to achieve goals

→ **self-regulation**

IN READING: a critical set of mental skills that enable the management of reading processes toward the end goal of reading comprehension

The Active View of Reading

This is a reader model.
Reading is also impacted by text, task, and sociocultural context.



THE SIMPLE VIEW OF READING

WORD RECOGNITION **X** LANGUAGE COMPREHENSION **=** READING COMPREHENSION

The Brain's Reading Network

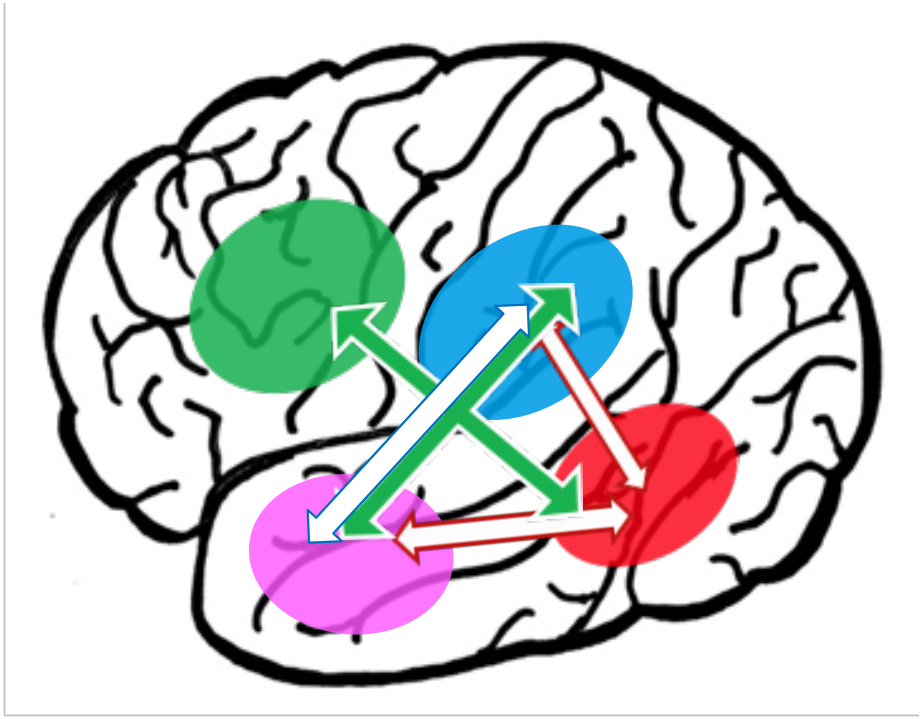
Students with dyslexia and RCD have weak connections in the reading network and weak executive skills!

Phonological/Sounds

Semantic/Meanings

Letterbox/Print

Executive Functions



Specific Executive Functions Underlie Skilled Reading

planning & organization (Cutting, Materek, Cole, Levine, & Mahone, 2009; Locascio, Mahone, Eason, & Cutting, 2010)

working memory (Borella, et al., 2010; Cain, 2006; Carretti, Cornoldi, De Beni, & Romanó, 2005; De Beni, Palladino, Pazzaglia, & Cornoldi, 1998; Oakhill, Hartt, & Samols, 2005)

cognitive flexibility (Cartwright, Bock et al., 2017; Cartwright, Coppage et al., 2017; Colé et al., 2014; Søndergaard Knudsen et al., 2018)

inhibition (Borella, Carretti, & Pelegrina, 2010; Cain, 2006; Locascio, et al., 2010)

social understanding (Brown, Oram-Cardy, & Johnson, 2013; Cartwright et al., 2017; Guajardo & Cartwright, 2016; Zelazo & Carlson, 2012)

Teaching and Supporting Executive Functions

- Requires that we TALK about THINKING in ways that may be unfamiliar to us
- Goes beyond comprehension strategies & typical think-alouds
- Is also familiar because it brings together many things that we already do!

Teacher Talk Examples: "Good readers are good thinkers…"

- **Good planners:** Know why they are reading and make a plan to get there
- **Organized thinkers:** Know how words, sentences, and texts are put together and use what they know to help them remember what they read
- **Are flexible thinkers:** Can think about, switch between, and do lots of things at the same time
- **Have good memories:** Can keep some things in mind while doing other things

Teacher Talk Examples (continued): "Good readers are good thinkers…"

- **Are good at ignoring** (inhibiting) things that are not important to understanding
- **Are good "mind readers":** Can think about characters' thoughts and feelings

Making INVISIBLE processes VISIBLE for students!

Planning and Reading

- Planning in reading involves many things we know successful readers do (Duke & Pearson, 2002; Israel et al., 2005; Paris et al., 1984; Pressley & Afflerbach, 1995)
- Involves goal-setting and teaching students steps they can take to reach their reading goal for a particular text
- Explicit explanation and tools to make the plan visible

Good readers are good planners: Know why they are reading and make a plan to get there

Planning For Students

My Plan to Understand

First ask: Why am I reading? What is my goal?

Then, with my goal in mind . . .

- Preview: Looking through the book, what do I see to help me get there?
- Focus: Should I pay more attention to some parts and slow down for others?
- Connect: What do I already know about this topic that will help me reach the goal?
- Question: What goal-related question(s) can I ask myself?
- Predict: What do I guess will be in this book?
- Strategize: What other steps can I take to reach my goal?
- Reflect: What will I know when I'm done?

FIGURE 2.2. A planning guide for your students.

Organization Example

How many sentences can you make with these words?

book fun a good reading is

Similarly, with words….

teaching phonics and spelling patterns = how letters are organized to create words; focus on the INTERNAL STRUCTURE of words

W B L O E

Organization and Reading

Recognition of organization already in words, texts

- spelling patterns (letter/sound organization)
- syntax (word order)
- text structure (narrative or informational structures)

Ability to USE a word's organization to decode it; or a text's organization to understand and remember what's in it

Good readers are organized thinkers: They know how words, sentences, and texts are put together and use what they know to help them remember what they read

Language Organization (Syntax)

Syntax: how language is organized to make meaning

1. like dogs I _____ **I like dogs.**
2. have cats fur _____ **Cats have fur.**
3. fast run horses very _____ **Horses run very fast.**
4. books fun reading is _____ **Reading books is fun.**
5. I apple the red eat _____ **I eat the red apple.**
6. school ride I the bus to _____ **I ride the bus to school.**

Supporting Syntax Awareness
Word Grouping Activity (Weaver, 1979)

quickly backyard dog the she in brushed the

First: Which word is the **action** word?

Next: Group the rest of the words…

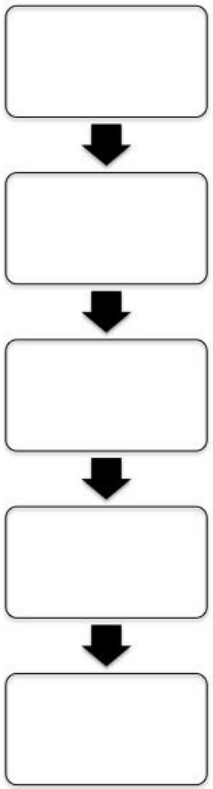
- **Who** did it? (usually before the action word)
- **How** did they do it? (usually right before the action word)
- **To whom** or what did they do it? (goes after the action word)
- **Where** did they do it? (usually at the end of the sentence)

She quickly brushed **the dog** in the backyard.

Teach Organization: Story Structure

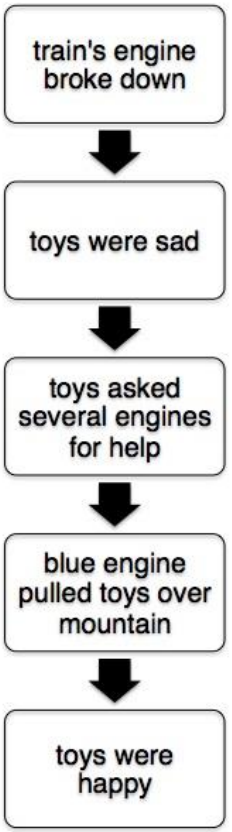
(van den Broek, 1989; Walker, Gopnik, & Ganea, 2014; Wolman, van den Broek, & Lorch, 1997)

In narratives, events are connected because of cause/effect



Think about The Little Engine that Could:

How are events causally connected?



Children with RCD struggle with understanding cause and effect in stories:

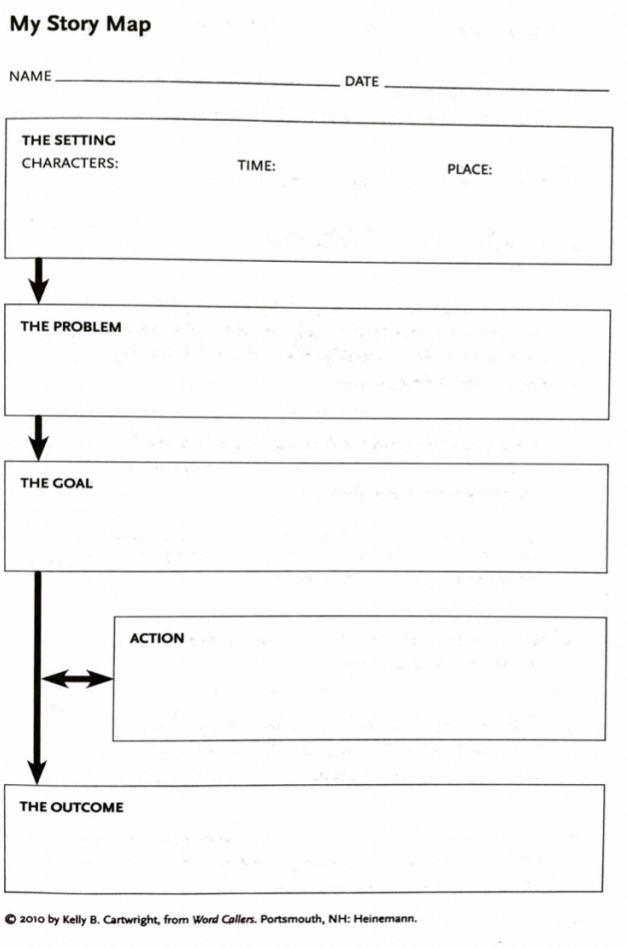
their retellings are like a string of unrelated events!

Supporting Organization: Story Structure

(Baumann & Bergeron, 1993; Idol, 1987; Idol & Croll, 1987)

Story Map Question Guide

1. Who were the characters?
2. Were there any other important characters? Who?
3. When did the story take place?
4. Where did the story take place?
5. What was the problem in the story?
6. How did _____ try to solve the problem?
7. Was it hard to solve the problem? Explain.
8. Was the problem solved? Explain.
9. What did you learn from reading this story?
10. Can you think of a different ending?



Organization: Connectives

Sharon got wet, _____ she forgot her umbrella.

Students with RCD tend only to use simple “additive” connectives (e.g., and), but not others in retelling and writing.

– They need explicit support.

(Cain, 2003; Carretti et al., 2006; Trabasso et al., 1981)

More on Connectives

(Cain, 2003; Carretti et al., 2016; Trabasso et al., 1981)

Track and teach use of connecting words when

- Story sequencing (putting pictures in correct order) with verbal explanation for WHY they are connected
- Retelling
- Narrating of wordless picture books
- Writing

Explicitly teach connecting words, such as:

Independence Between Ideas: and, additionally, now, as well, also, in addition…

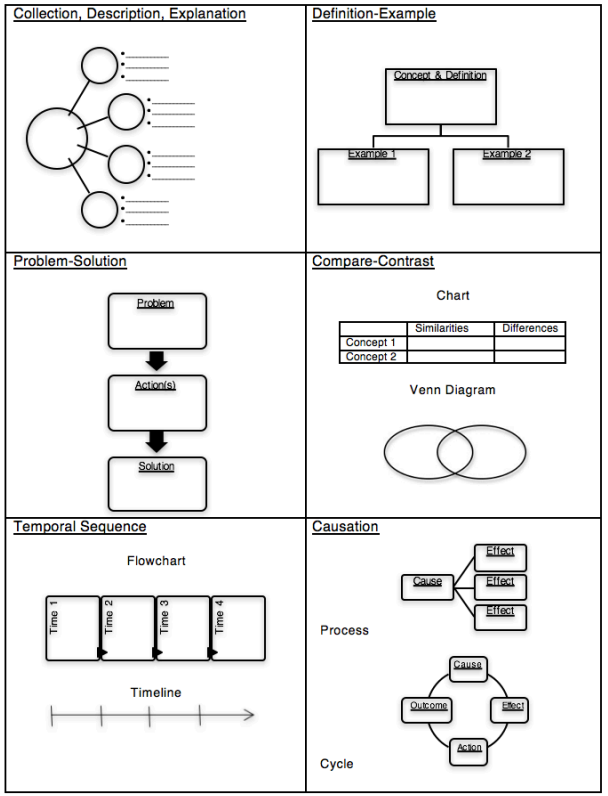
Dependence (Connection) Between Ideas: if, but, because, so, so that, in order to, however, in contrast, or else, instead of…

Time Sequence: later, first, next, since, and then, when, before, finally…

Teach Organization: Expository Text Structures

Teach them explicitly!

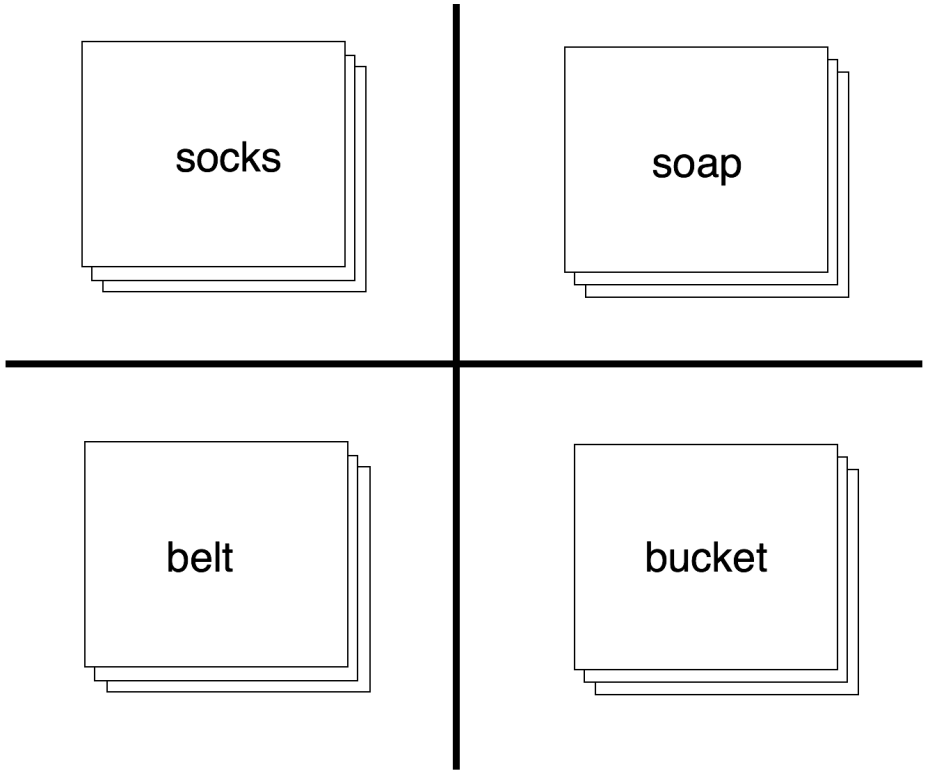
- collection, description, explanation
- definition-example
- problem-solution
- compare-contrast
- temporal sequence
- causation (process or cycle)



(Reutzel, Read, and Fawson, 2009; Williams, 2003, 2005; Williams et al., 2014)

Assess Flexibility: Coordinating Words' Sounds & Meanings

Graphophonological-semantic cognitive flexibility (GSF) assessment



Reflects coordination of WR and LC; contributes to children's & adults' reading comprehension

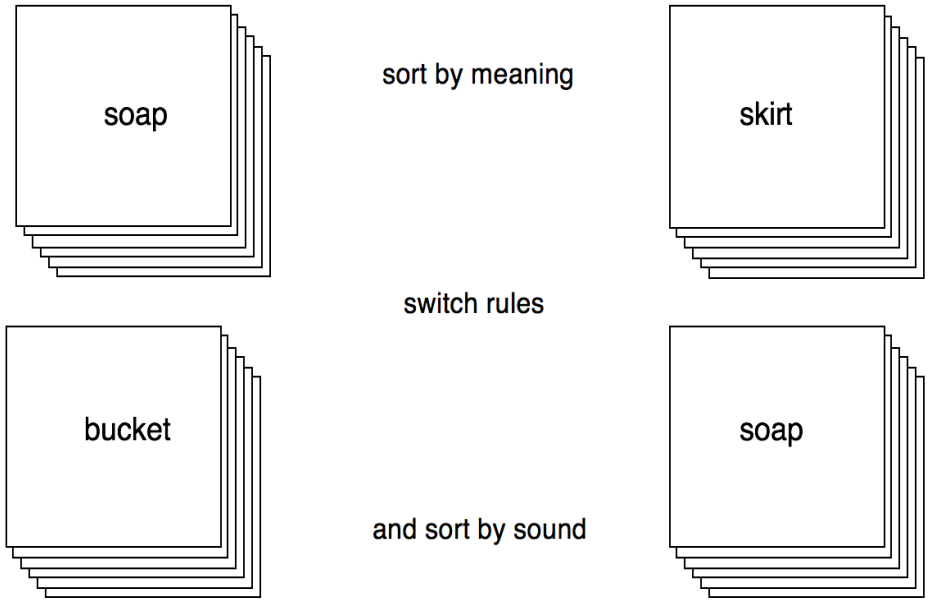
Children and adults with RCD are significantly less flexible!

(Cartwright, Bock et al., 2017; Cartwright, Coppage et al., 2017)

Teach Flexibility to Improve Reading

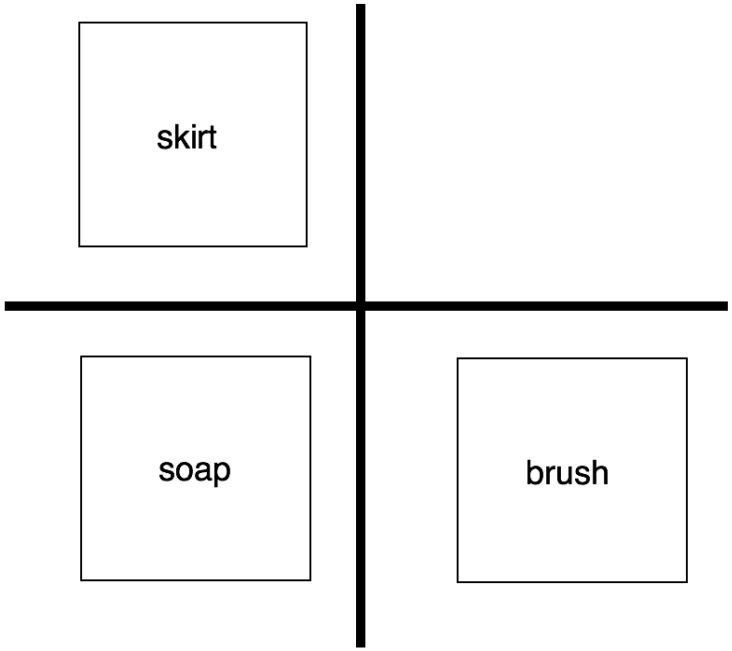
(Cartwright, 2002; Cartwright, Bock, et al., 2020; Cartwright, Coppage et al., 2017)

first, single sorts



2 steps with one card set

then, sort completions (place 3, child completes)



criterion: 4-in-a-row correct

Supporting Inhibition: Ambiguity in Academic Language

Sometimes we expect students to learn (or know) academic meanings for words that also have everyday meanings

readers (and listeners) must inhibit the common meaning and pay attention to the more specialized academic meaning!

"sentence" in language arts vs. math class "some" (part) vs. "sum" (total)

(Durkin & Shire, 1991 Logan & Kieffer, 2017; 2021)

Supporting Inhibition Resolving Ambiguous Meanings

(inhibiting incorrect ones, focusing on correct ones; also requires working memory)

Homonyms and Homophones

e.g., bear/bare, deer/dear,

Idioms and Other Figures of Speech

e.g., hold your tongue; *Parts* and *More Parts*,

Ambiguous Sentences

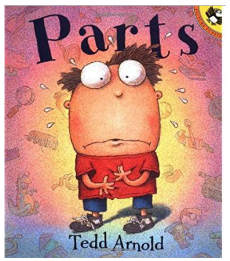
e.g., Let's eat Grandma. vs. Let's eat, Grandma.

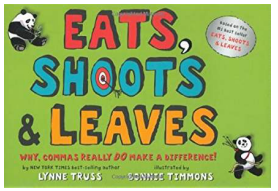
Books with Multiple Meanings

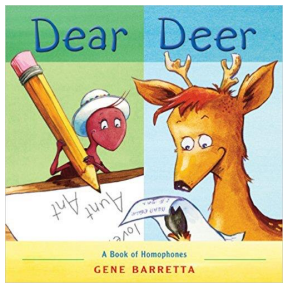
e.g., *Amelia Bedelia*, riddles books

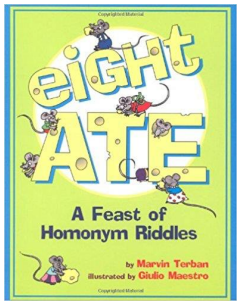
Riddle Construction Activities

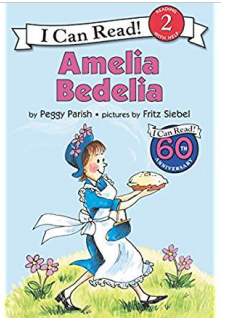
What did the dinosaur say when he ate a clown?
*"That tasted **funny**."*





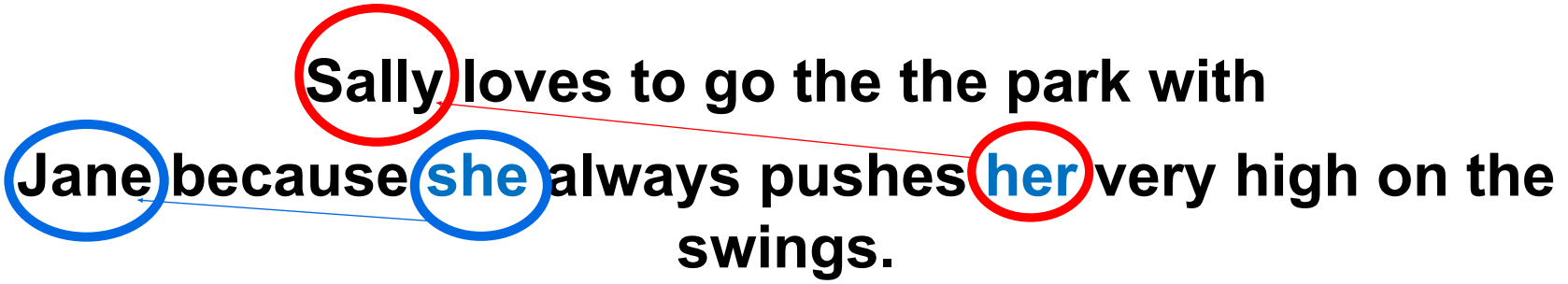






(Yuill, 1996, 2008; Zipke, 2008; Zipke, Ehri, & Cairns, 2009)

Supporting Working Memory: Resolving Anaphors



Authors use **shortcuts** when writing. They **substitute shorter words or phrases for longer bits of text**, and we have to figure out what they mean. Requires holding words in mind so you can connect them to later words.

(Francey & Cain, 2015; García-Madruga et al., 2013; Oakhill & Yuill, 1986; O'Connor & Klein, 2004; Yuill & Oakhill, 1988)

Supporting Working Memory: Inferences

It was 8:55, and the bell rings at 9:00. Andy was pedaling as fast as he could, because he was worried that he might miss his test.

Where was Andy going? (Text-connecting, local coherence inference)

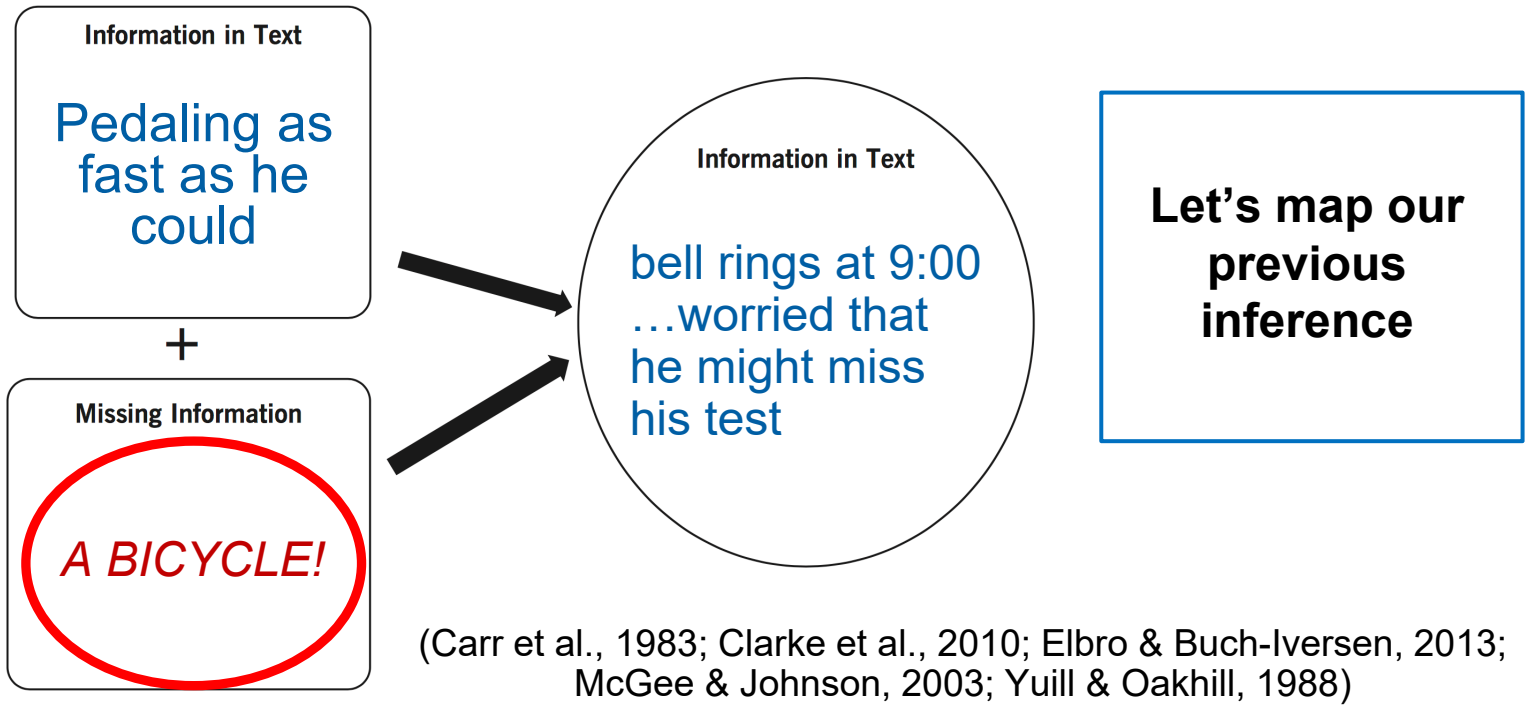
How was Andy getting there? (Gap-filling, global coherence inference)

(Bowyer-Crane & Snowling, 2005; Cain & Oakhill, 1999; Elbro and Buch-Iversen, 2013)

Supporting Working Memory: Inferences

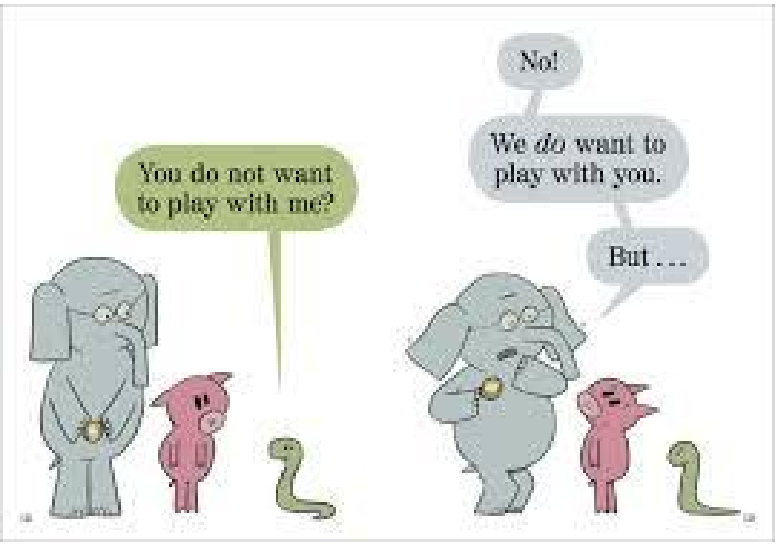
We need to provide concrete, visible supports for the inference-making process

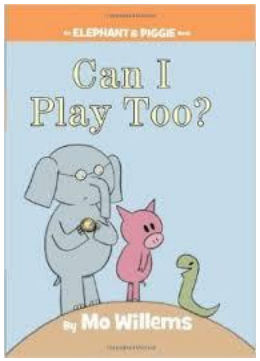
Inference maps scaffold weak working memory skills



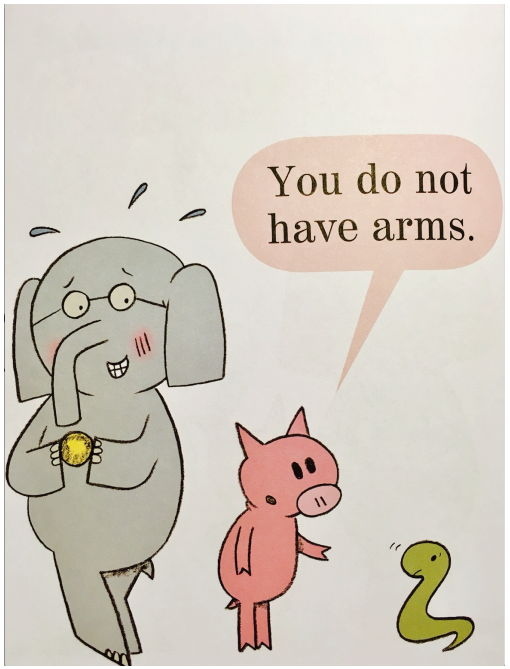
(Carr et al., 1983; Clarke et al., 2010; Elbro & Buch-Iversen, 2013; McGee & Johnson, 2003; Yuill & Oakhill, 1988)

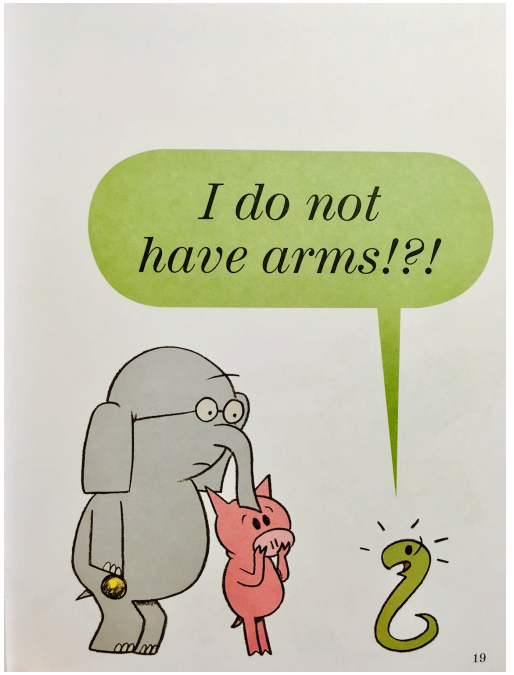
Social Understanding Example





Social Understanding (Continued)





Social Understanding is Key…

(Carnine, Stevens, Clements, & Kameenui,1982; Guajardo & Cartwright, 2016; Lysaker & Miller, 2002)

Required to understand WHY characters do what they do

Supports **social inference-making** – essential for narrative texts and social informational texts (e.g. history and social studies)

Supports understanding of author's purpose

Reciprocal: Adults who read more fiction have better social understanding! (Kidd & Castano, 2013)

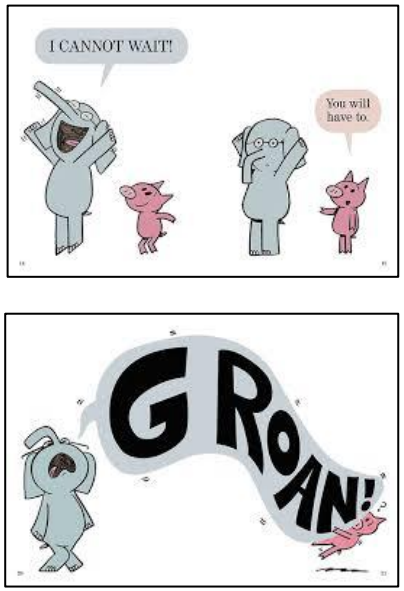
Good readers are good "mind readers": Can think about characters' thoughts and feelings

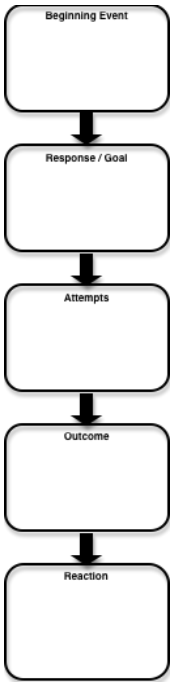
Mapping Stories from Multiple Perspectives

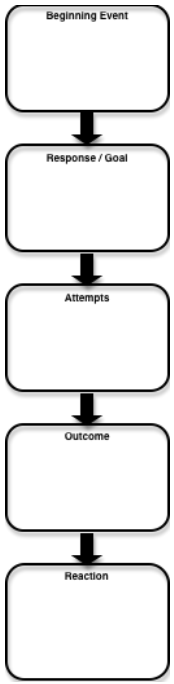
(Shanahan & Shanahan, 1997)

Gerald's perspective

Waiting is Not Easy
– Mo Willems







Piggie's perspective

Think about it….

What texts can you think of that would support the development of understanding multiple perspectives?

Teaching Social Understanding

Mental and emotional state vocabulary

- Assess how often these words appear in retellings
- Teach these kinds of words to improve social understanding

cognition (thinking):
believe, bet, dream, figure, forget, guess…

motivation (desires):
desire, hope, like, love, miss, need, want…

emotion (feelings):
afraid, angry, bad, bored, cry, frustrated…

(e.g., Dyer, Shatz, & Wellman, 2000)

Summary of Today's Interventions
Support students by enabling:

A more planful, goal-directed approach to reading

Explicit attention to language and text organization and structure with concrete supports

A more flexible focus on meaning in addition to words' sounds, AND the ability to shift between them

The ability to consider multiple word meanings and inhibit meanings inappropriate for text context

The ability to resolve pronouns, make inferences, and connect ideas by using concrete supports

The ability to make social inferences

Key Takeaways

Students with reading difficulties often have problems that extend beyond word recognition and language comprehension

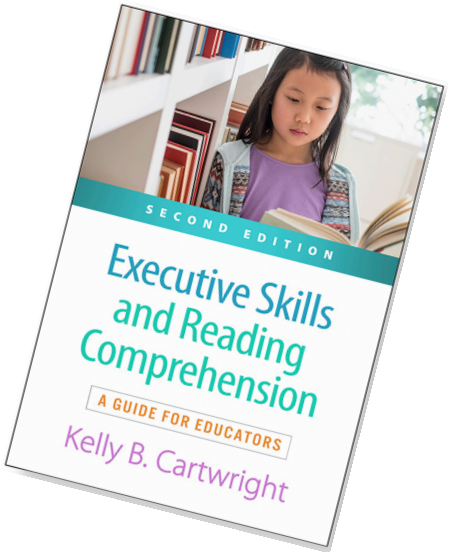
They may also have executive function (EF) weaknesses, which can underlie their difficulties with language and reading processes

Instruction for students with reading and EF problems must be

- Explicit about the thinking processes involved in reading
- Intentional about providing concrete supports that scaffold the executive skills underlying reading

Do you notice executive function issues in your students?

How can you intentionally support your students' executive skills in reading?



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Charting the Cs

Cooperation . Communication . Collaboration

STATEWIDE PROFESSIONAL DEVELOPMENT TO SUPPORT THE WORKFORCE & LOW INCIDENCE DISABILITY AREAS

Thank you!