Reading and Older Readers

Doug Fisher

The Opportunity Makers

How a Diverse Group of Public Schools Helps Students Catch Up — and How Far More Can

Read the Report:
tntp.org/publications

TNTP

Most students who fall behind stay behind.

Of the **28,000** public elementary and middle schools where the average student was not yet on grade level...

■ More than 1.3 years of annual learning

...just 5% helped the average student catch back up.

TNTP

We can learn from the schools where students consistently catch up.

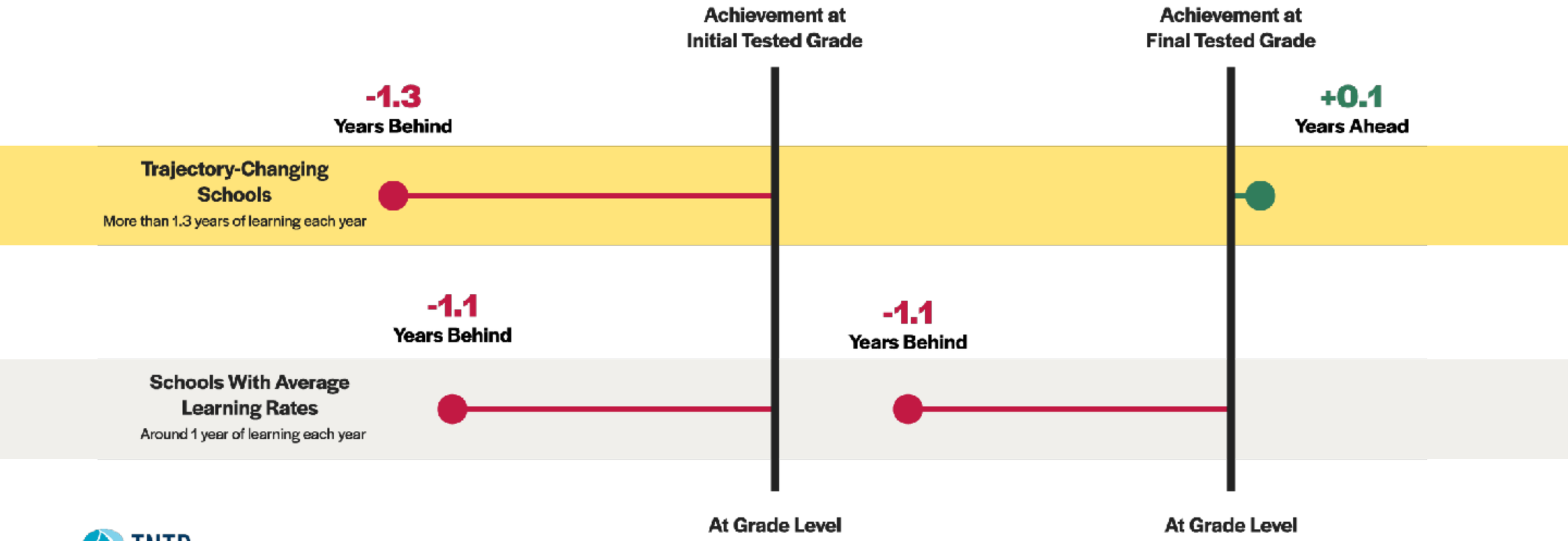
Trajectory-Changing Schools:

Schools where the average student was **not yet on grade level** ***and*** **grew more than 1.3 relative grade levels each year**, based on the Stanford Education Data Archive (2008-09 to 2017-18).

TNTP

In three years, students gain a full extra year of learning.

Student Achievement Over Time at Schools Where the Average Student Is Not Yet on Grade Level

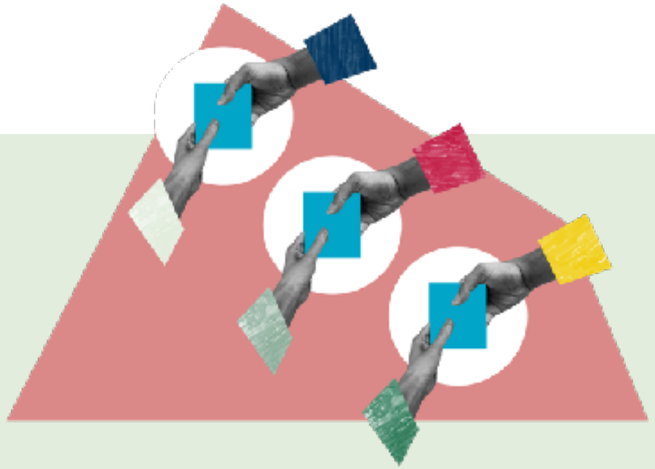


TNTP

Trajectory-changing schools do three things well.

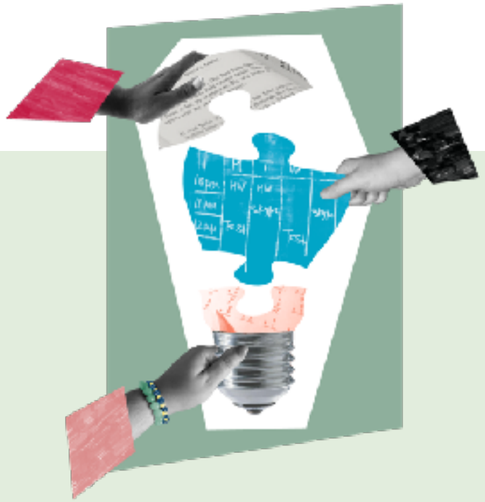
Belonging

Schools create an emotional climate for learning that activates students' ability to excel.



Consistency

Schools deliver consistently good teaching and grade-level content for all students.



Coherence

Schools build a unified instructional program and set priorities that are clear to all.

TNTP

Coherent

Instructional Program

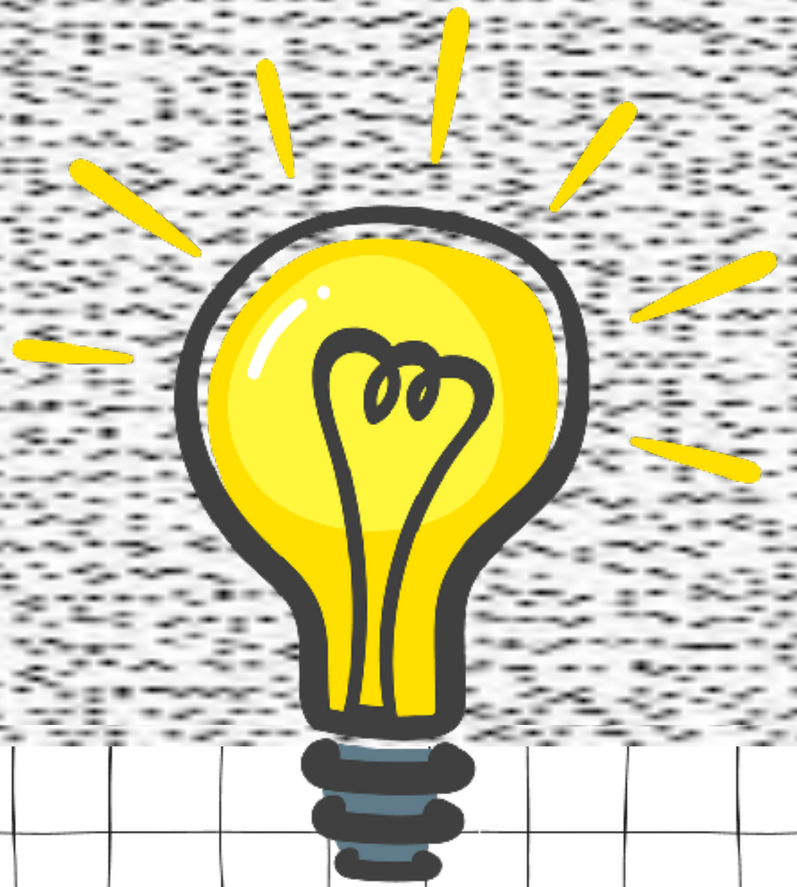
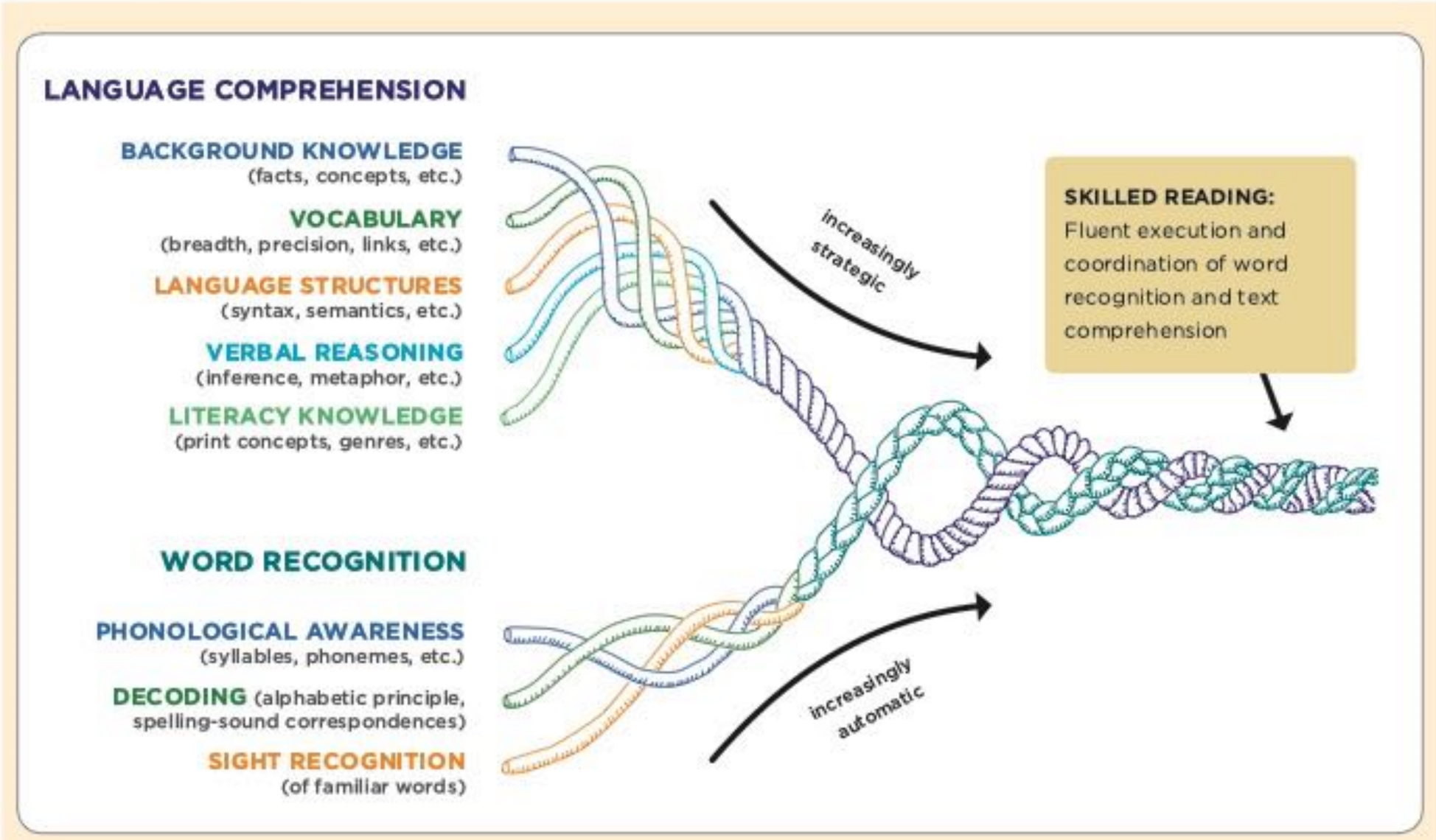
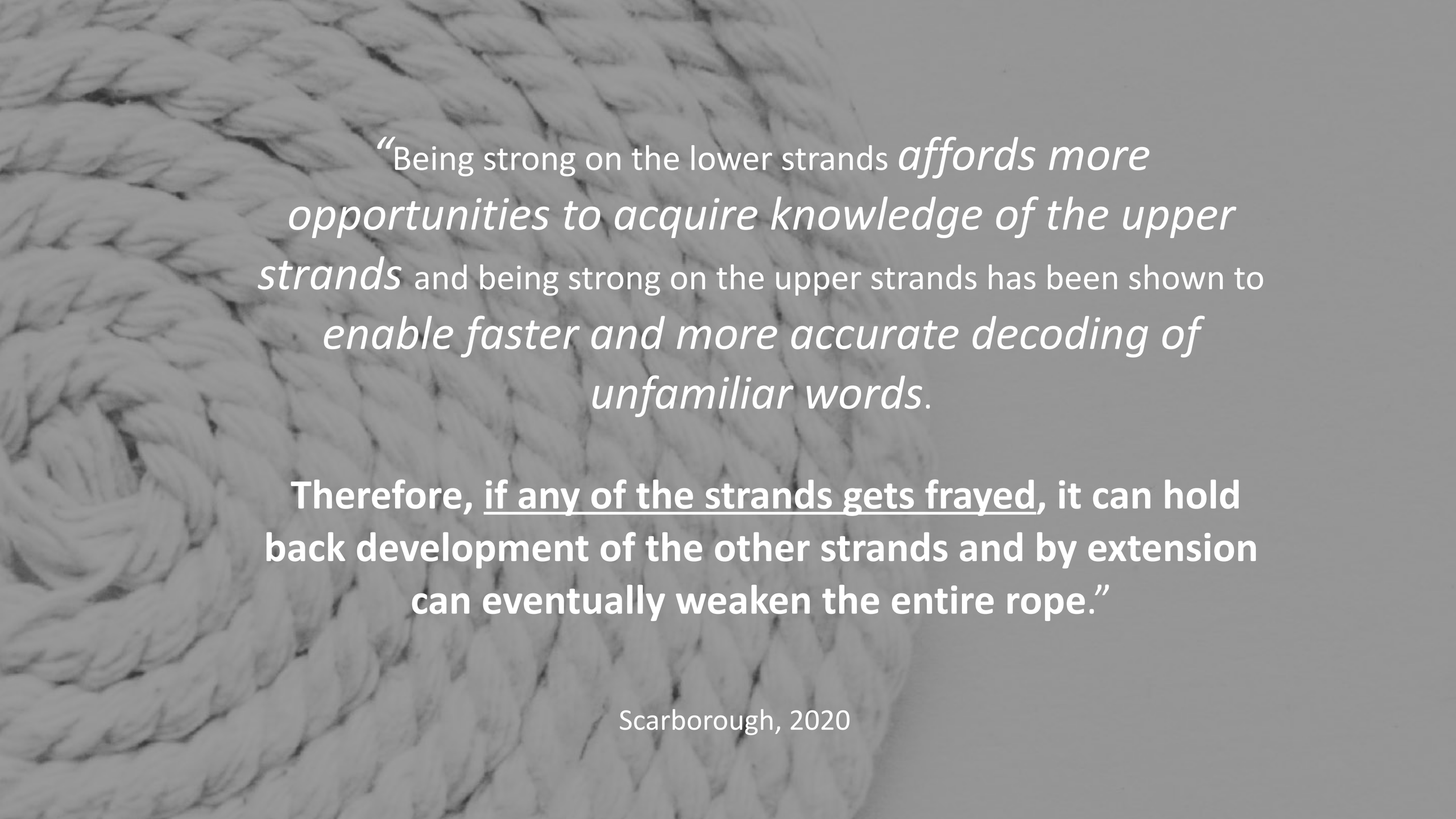


Figure 1.1 Scarborough's Reading Rope



Source: Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook for research in early literacy* (pp. 97–110). Guilford Press.

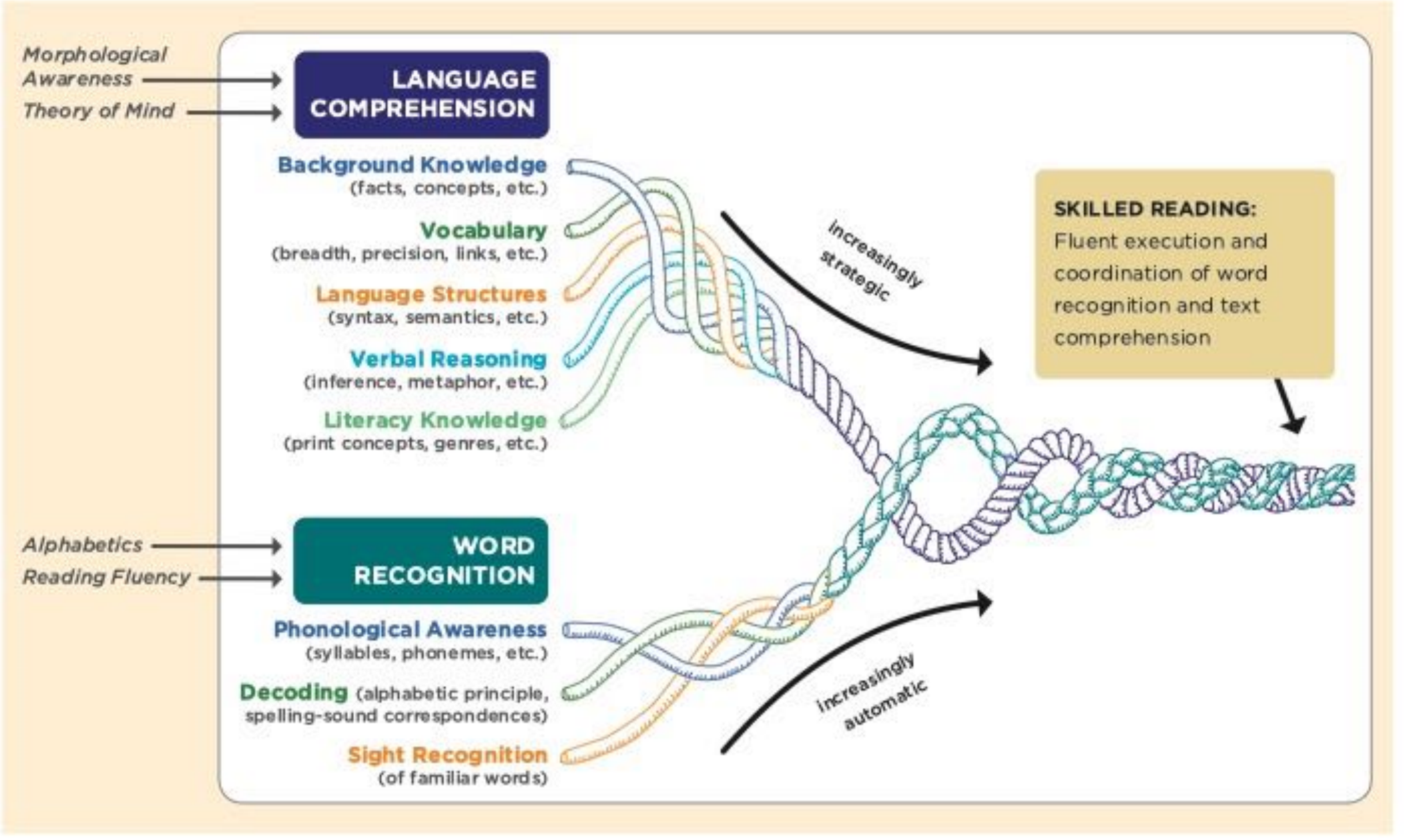


"Being strong on the lower strands *affords more opportunities to acquire knowledge of the upper strands* and being strong on the upper strands has been shown to *enable faster and more accurate decoding of unfamiliar words*.

Therefore, <u>if any of the strands gets frayed</u>, it can hold back development of the other strands and by extension can eventually weaken the entire rope."

Scarborough, 2020

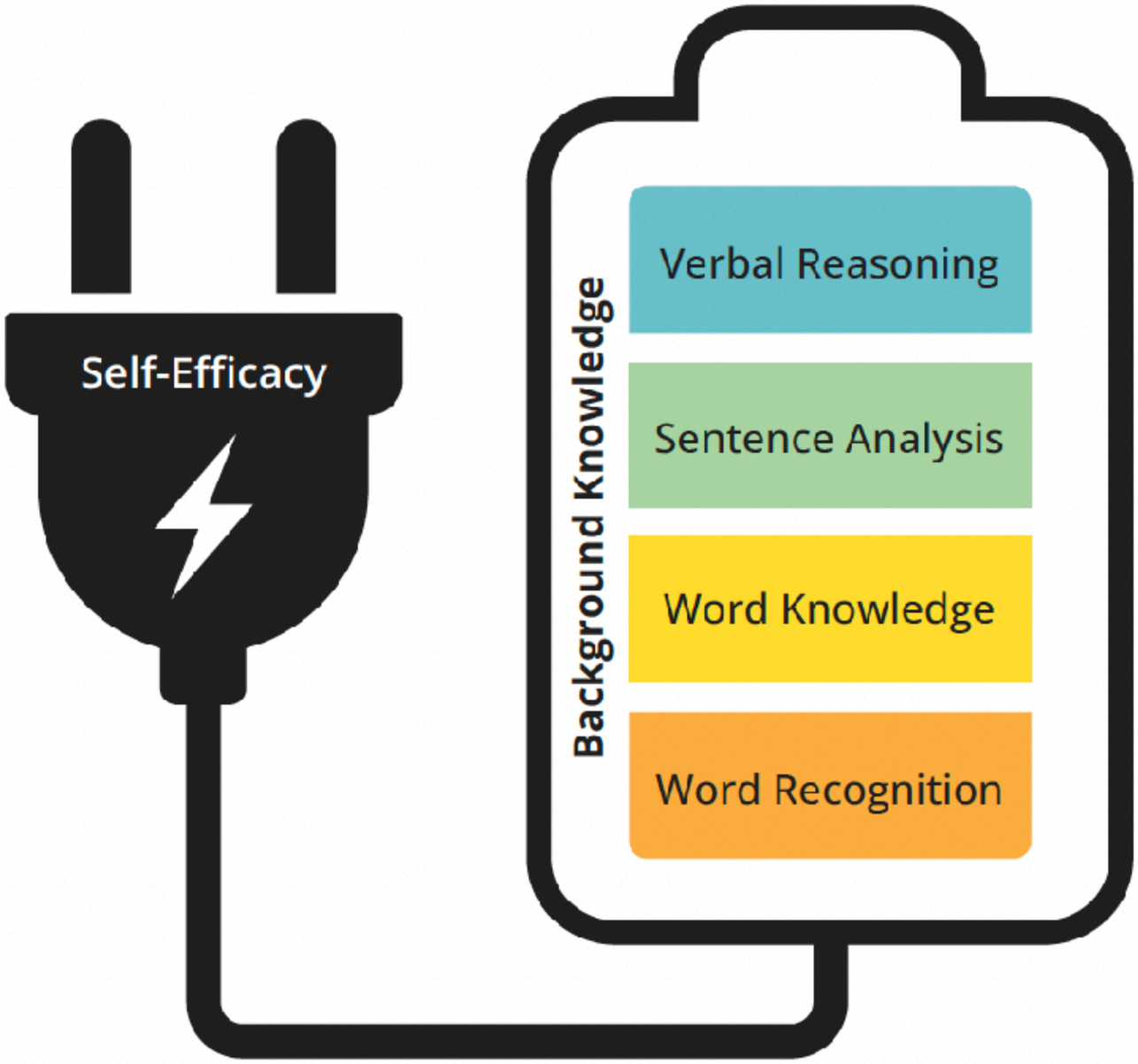
Figure 1.2 Suggested Modifications of the Reading Rope



Source: Adapted from Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook for research in early literacy* (pp. 97–110). Guilford Press.

What about Older Readers?

Do we have a model?

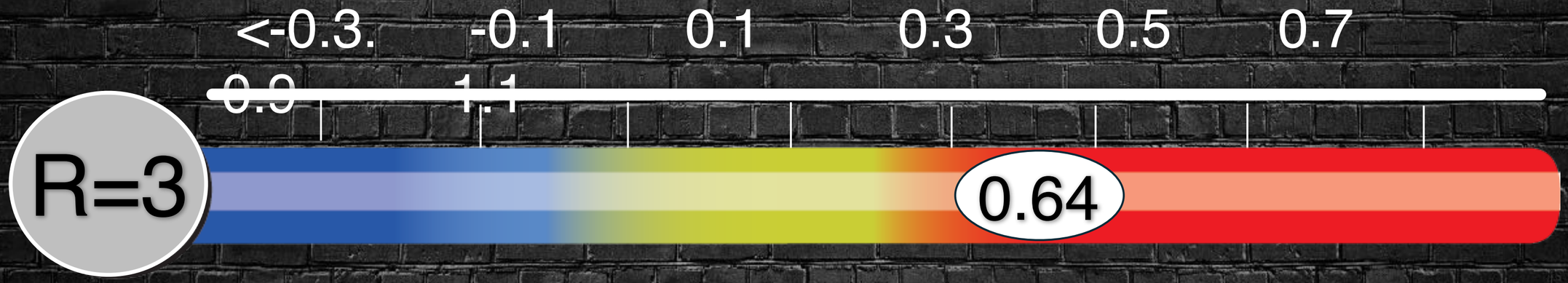


The Reading Circuit

A model of reading instruction for older readers

bit.ly/ADO_RU

Self-Efficacy



Hattie, J. (2023). Visible learning: The sequel. A synthesis of over 2100 meta-analyses relating to achievement. Routledge.

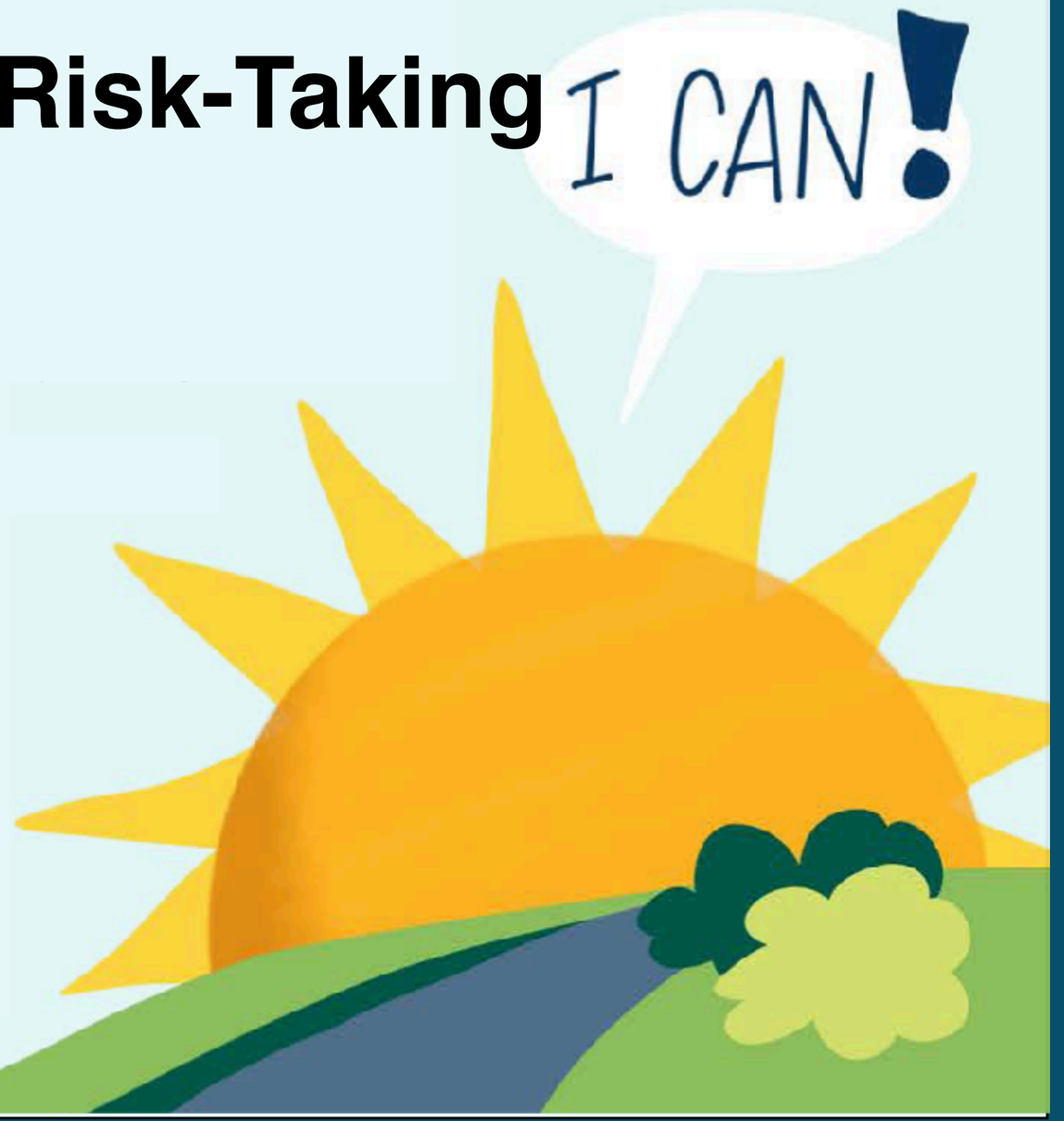
Self-efficacy is a personal judgement about “how well one can **execute courses of action** required to deal with prospective situations.”

Bandura, 1982

When students experience academic success, they’re more likely to engage in behaviors that led to that success.

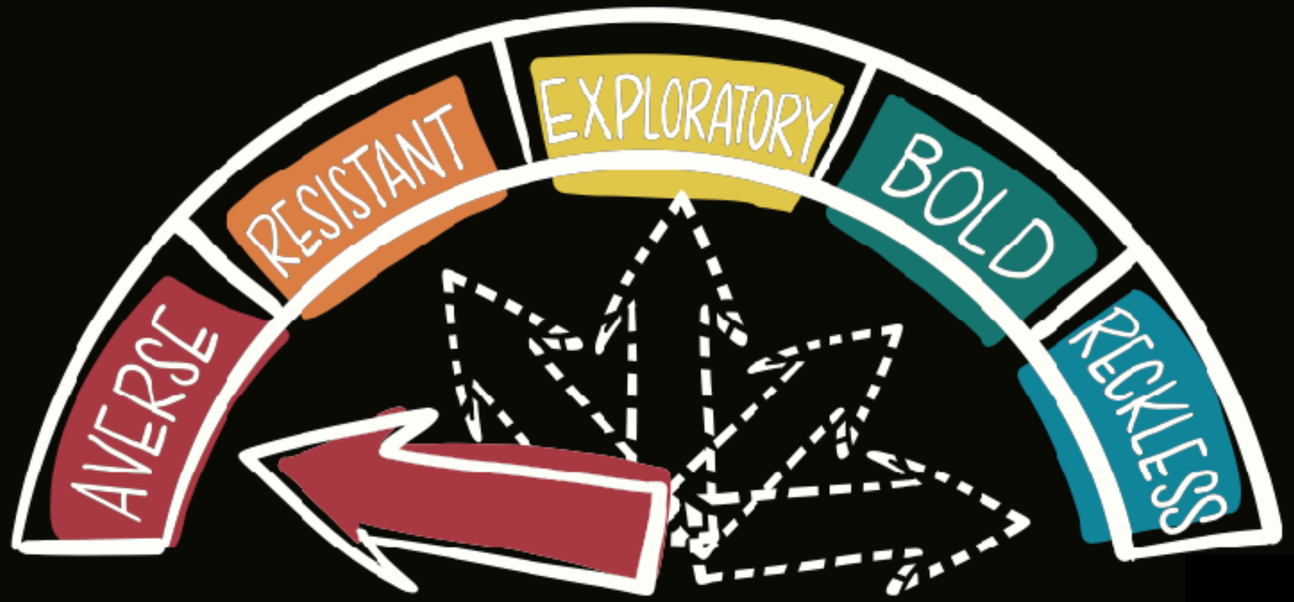
Academic Risk-Taking

A willingness to ask questions, offer ideas, seek feedback, and complete complex tasks.




Academic risk-takers aren’t born. They are BUILT.

CONTINUUM OF ACADEMIC RISK-TAKING



The Remembered Success Effect

Journal of Educational Psychology

© 2024 American Psychological Association
ISSN: 0022-0663

2025, Vol. 117, No. 2, 308–335
https://doi.org/10.1037/edu0000846

Investigating the Remembered Success Effect With Elementary and Middle School Students

Bridgid Finn[1], David B. Miele[2], and Allan Wigfield[3, 4]

From Research to Practice (Finn et al., 2025)

- 600 3rd and 6th grade math students
- Interleaving moderate problems within challenging tasks (extra opportunities for success) improved engagement, persistence, and motivation
- Students chose optional challenge tasks

The Remembered Success Effect

Recalling past success increases effort and achievement.

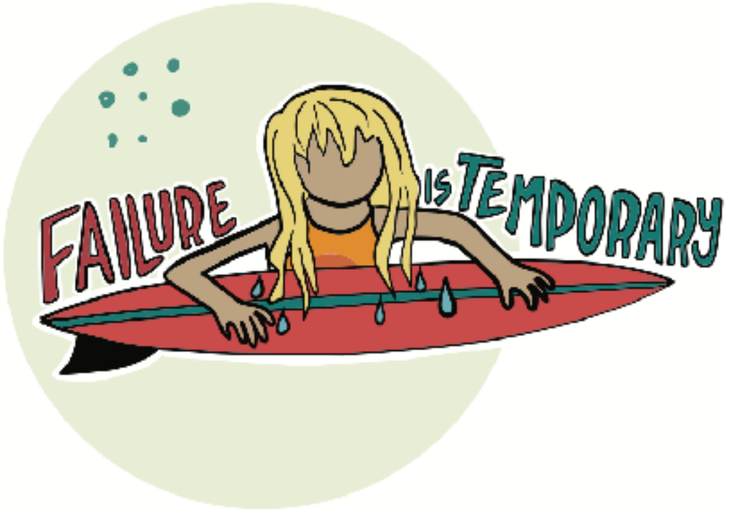
Dopamine reinforces what the brain did right.

Success primes students to tackle harder tasks.

Students persevere longer when reminded of past wins.

Finn, B., Miele, D. B., & Wigfield, A. (2025).

The Success-Failure Ratio

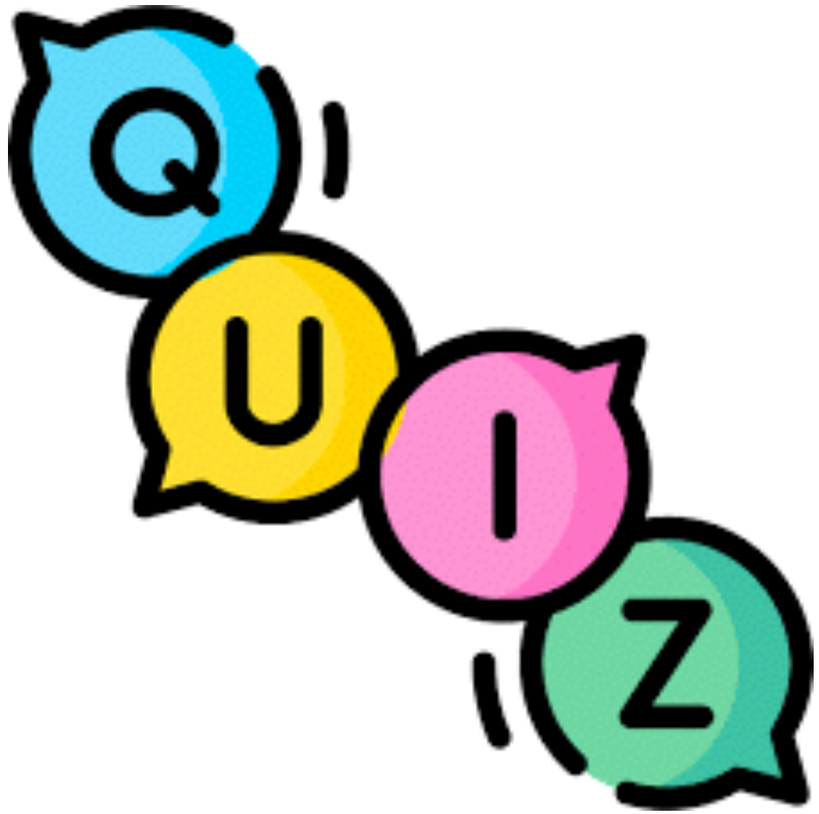


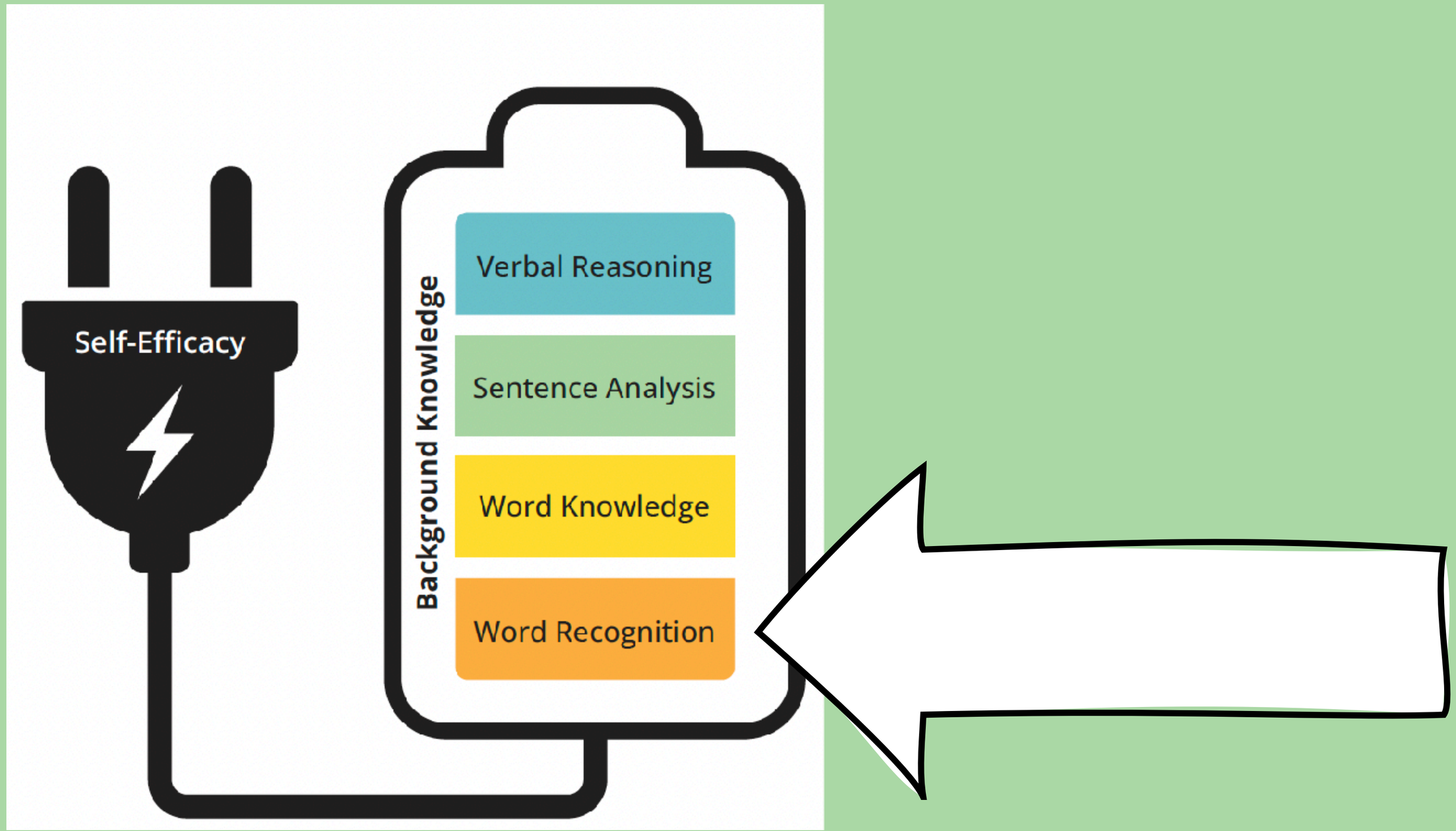
From Research to Practice (Wilson et al., 2020)

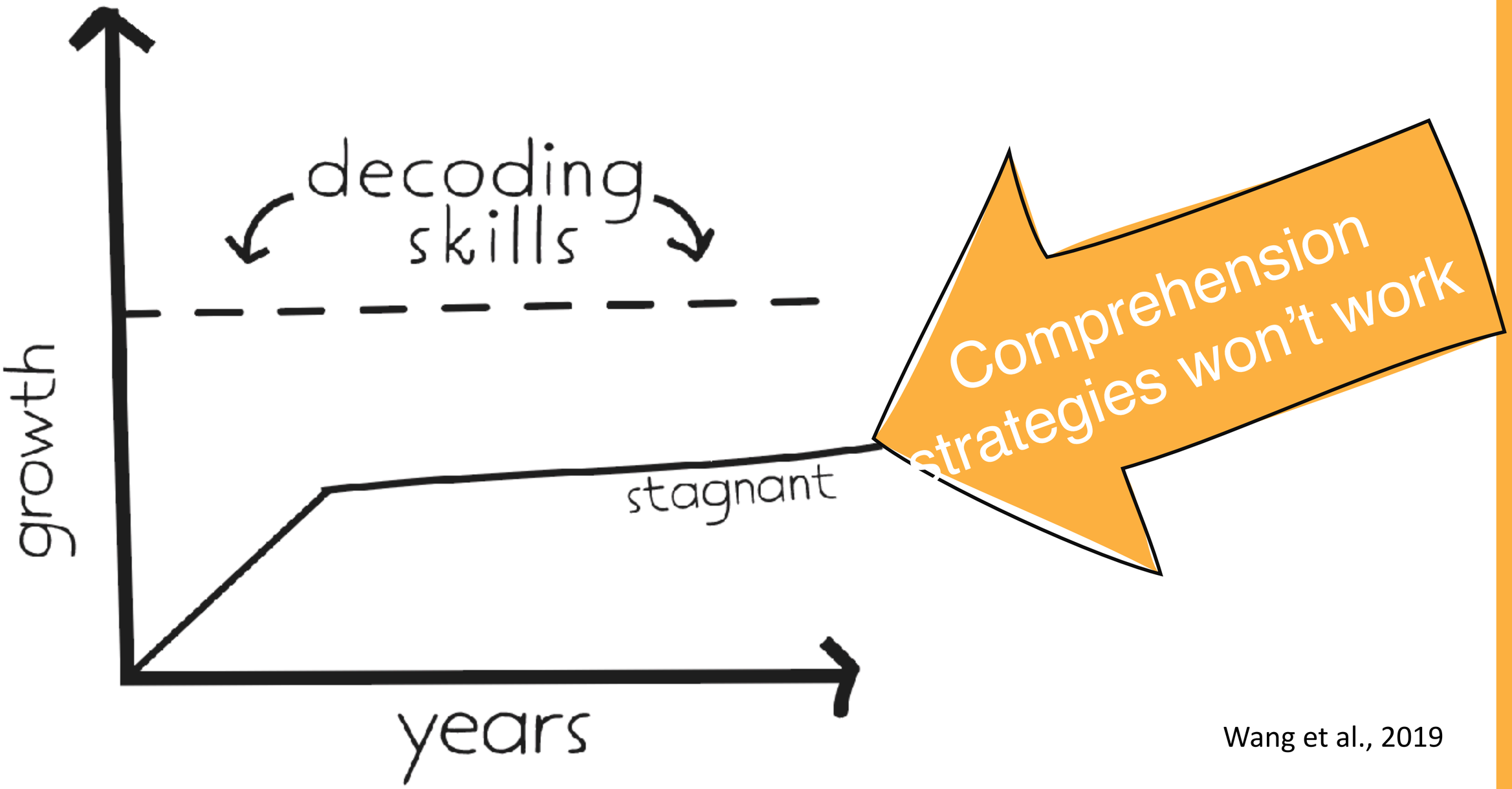
- Engagement is maximized when tasks are neither too easy or too hard.
- When given choices, participants will spontaneously choose tasks at these optimal levels.
- “Learning at the optimal accuracy proceeds exponentially faster than training at a fixed difficulty.”

The solution of the differential equation $(x + 2y^3)dy/dx = y$ is

- $x = y^2 + C$
- $y = x^2 + C$
- $x = y(y^2 + C)$
- $y = x(x^2 + C)$

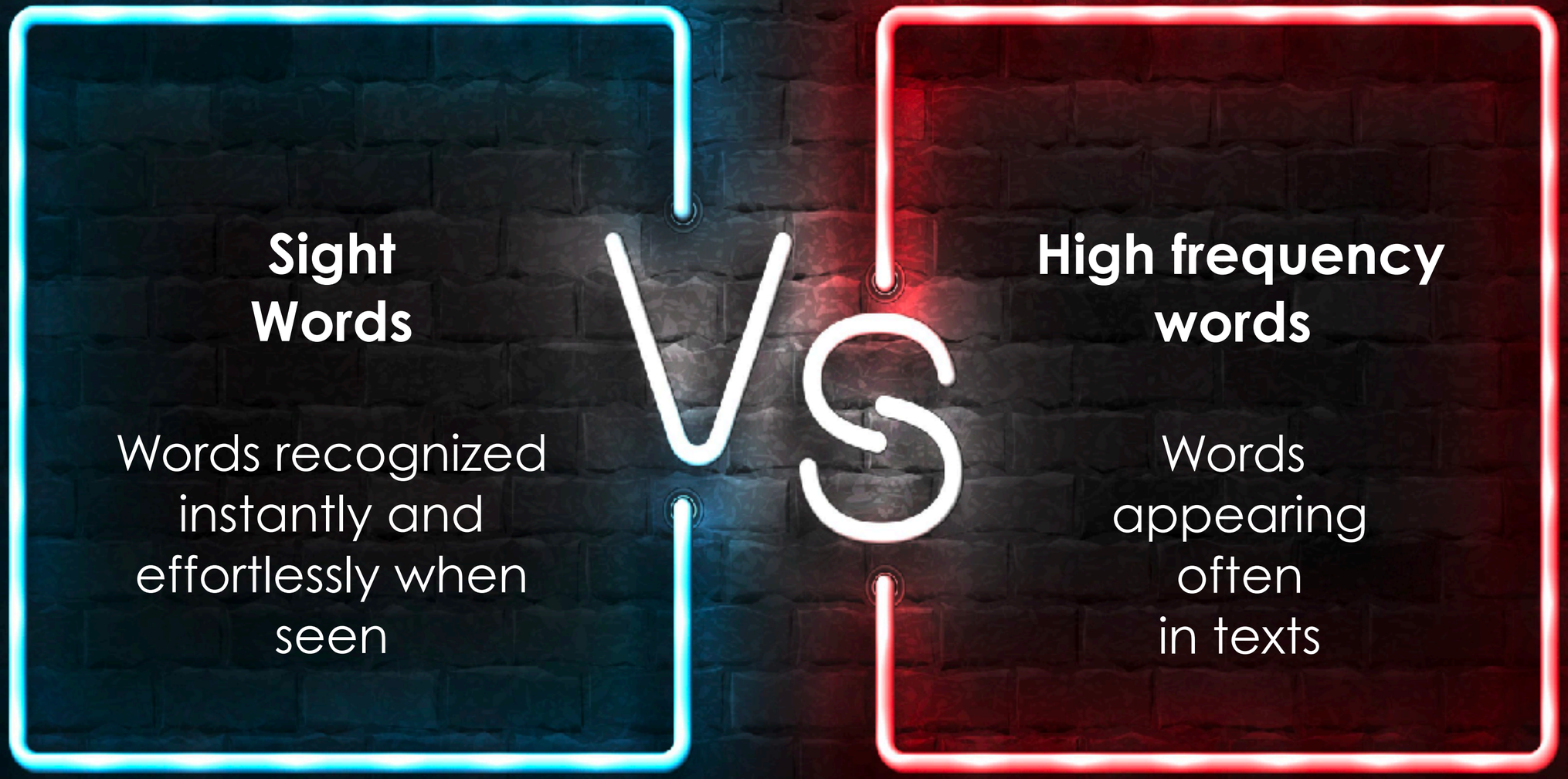


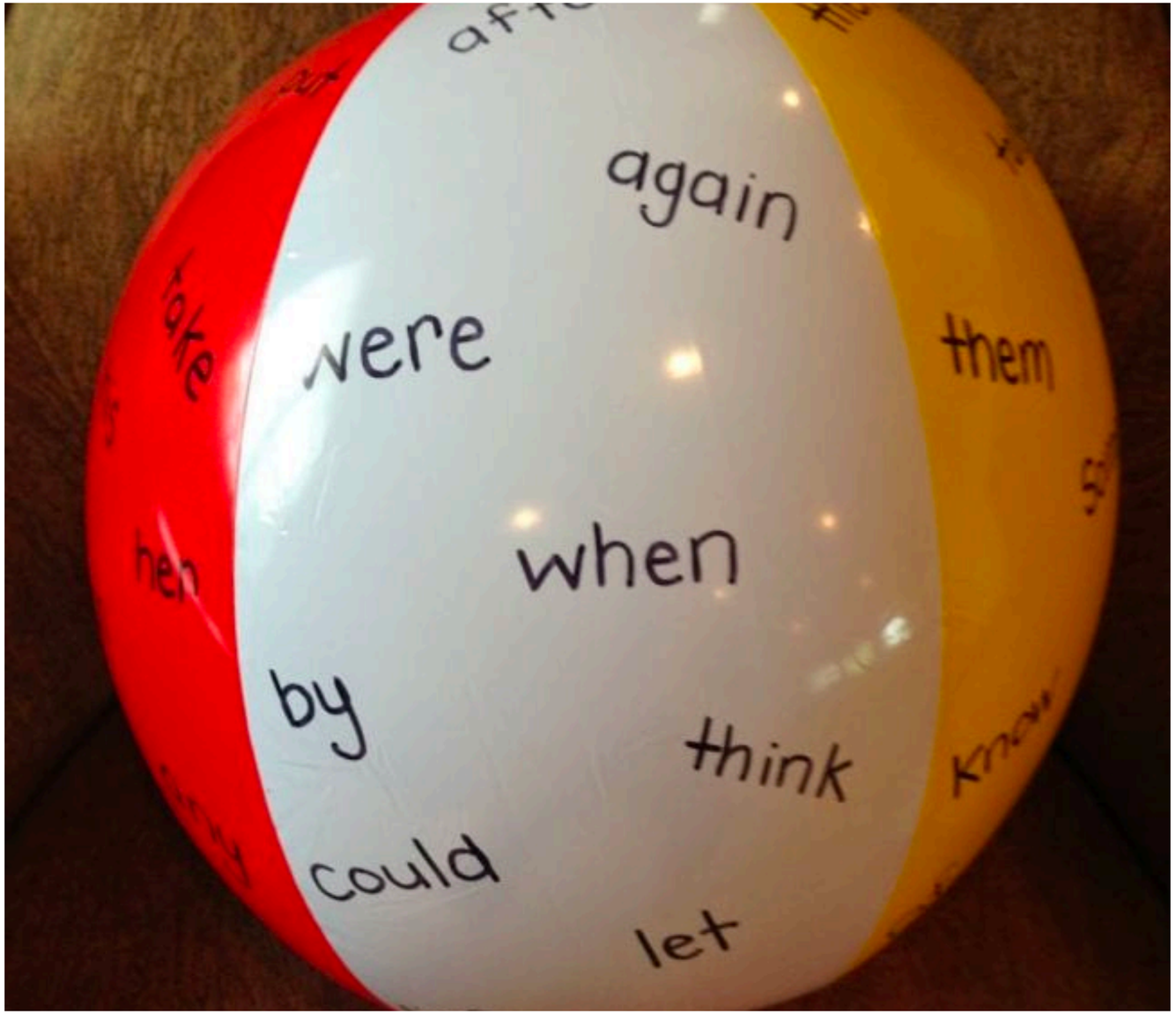

Self-Efficacy
Background Knowledge
Verbal Reasoning
Sentence Analysis
Word Knowledge
Word Recognition



Wang et al., 2019

Sight Word and High Frequency Words





Eventually **all words** that readers **immediately recognize** are added to the category of **sight words.** (Erhi, 2005)

Orthographic Mapping

- Connection between letters and sounds of the word
- Recognition of the pronunciation of the word
- Connection to the meaning of the word

Flexible Word Chunking

1. Identifying affixes
2. Segmenting word parts / syllables
3. Adjusting vowel sounds

in – dus – tri – a – li – za – tion

Monday	Tuesday	Wednesday	Thursday	Friday
Teacher models the text selection. (2 min.) Students read the same section of the text in a whisper voice as the teacher walks around to listen (3 min.) Students engage in a Partner-Share “What is this text mainly about?” (3 min.) Students are chosen at random (after the partner-share opportunity) to summarize the main point of the text. (2 minutes)	Teacher uses the choral reading strategy on a selection of the text. (2 min.) Students read the same section of the text in a whisper voice as the teacher walks around to listen (3 min.) Teacher poses a text-dependent question, and partners discuss. (3 min.) Students are chosen at random (after the partner-share opportunity) to respond to the question. (2 minutes)	Teacher uses the choral reading strategy on a selection of the text. (2 min.) Students read the same section of the text in a whisper voice as the teacher walks around to listen (3 min.) Teacher asks a question that requires inferential thinking. Partners discuss. (3 min.) Students are chosen at random (after the partner-share opportunity) to respond to the question. (2 minutes)	Partner A reads to Partner B. Partner B gives feedback based on accuracy of words and expression (3 min.) Partner B reads to Partner A. Partner A gives feedback based on accuracy of words and expression (3 min.) Writing - Response to text-dependent questions. (4 min)	Students read the same section of the text in a whisper voice as the teacher walks around to listen (3 min.) Students develop questions based on the text. (2 min.) Writing - Students choose one of the questions that were developed and independently craft a written response (5 min.)

Component	Definition	Example
Prefix	A word part (affix) added to the beginning of a root or base to create a new meaning. Prefixes give direction, intensify meaning, or negate meaning.	*re-* meaning again, as in *review*
Suffix	A word part (affix) added to the end of a root or base word to create a new meaning or change the part of speech.	*-less* meaning without, as in *spotless*
Root or Base	A morpheme or morphemes to which affixes or other bases may be added; carries the basic meaning of the word	*trans* meaning across, as in *transcontinental*
Cognates	Two words having the same ancestral language and meaning	*aeropuerto* and *airport*
Word Family	A group of words sharing a common phonic element	*judge, judgment, judges, adjudicate, adjudication*

Direct Instruction in Morphology

Meaning—What does the word mean?

Built—How is the word built?

Relatives—Is the word related to other words?

Pronunciation—How do we say the word?

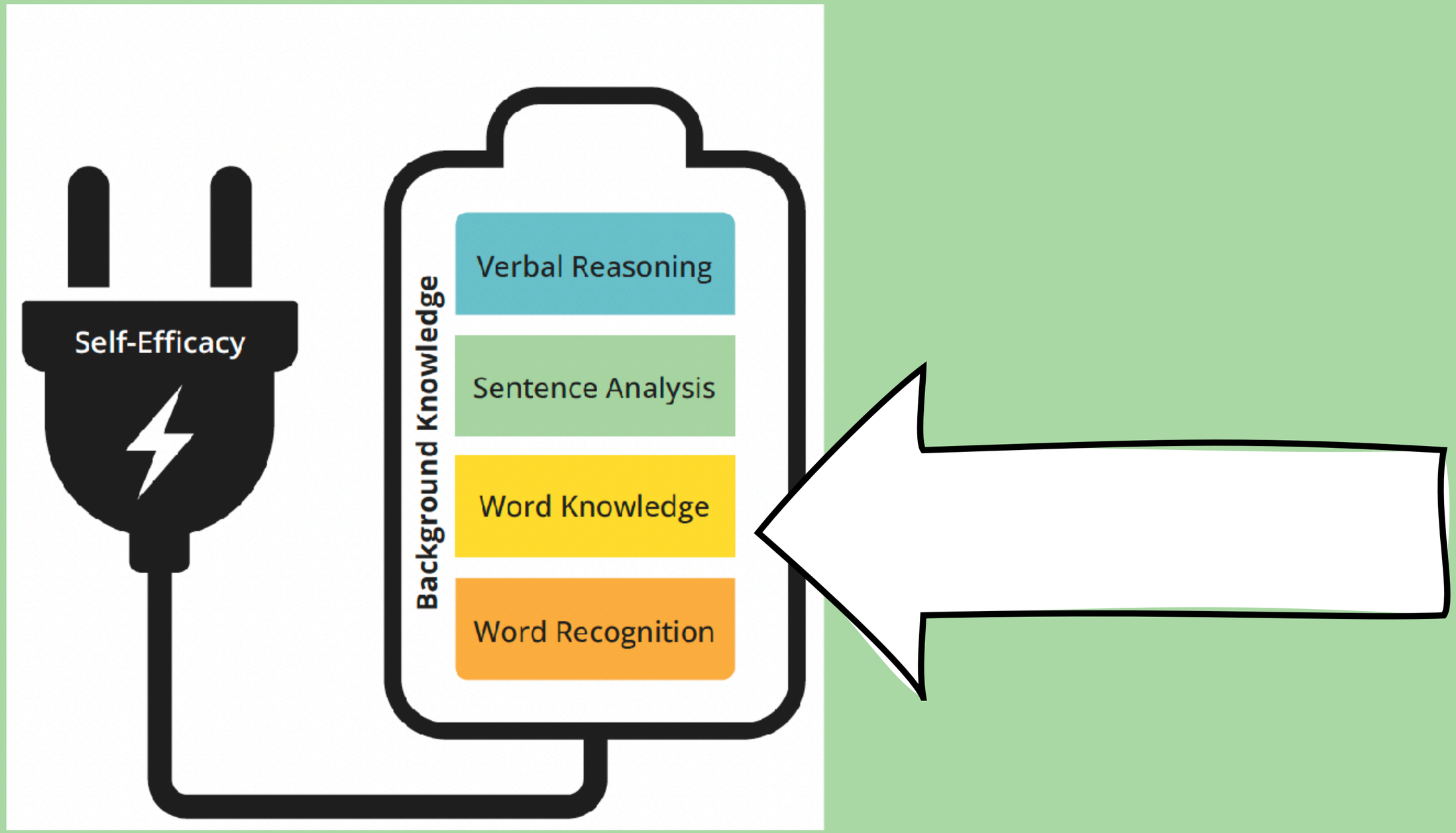
Figure 9.4 Affixes for Instruction

Family	Grade 3	Grade 4	Grade 5	Meaning	Example Words
Not prefixes	*dis-*			not, opposite	*dislike, disobey, disagree*
	un-			not, opposite	*unhappy, unlock, unafraid*
	in-			not, opposite	*incorrect, invisible, inappropriate*
		im-		not, opposite	*impossible, impolite, impatient*
		non-		not, opposite	*nonfiction, nonstop, nonliving*
			il-	not, opposite	*illegal, illogical, illegible*
			ir-	not, opposite	*irregular, irresponsible*
Position prefixes	*pre-*			before	*pretest, preheat, preschool*
		post-		after	*postgame, postwar, postseason*
		mid-		middle	*midnight, midday, midair*
			inter-	between	*intercity, interstate, interact*
			intra-	among	*intrastate, intracellular*
			fore-	before	*foresee, foretell, forewarn*
			trans-	across	*transatlantic, transnational, transplant*
Over/ under prefixes	*over-*			more than, too much	*overheat, overwork, overpriced*
		super-		over, high, big, extreme	*superheat, superstar, supermarket*
		under-		low, too little	*undersea, underachiever, undercook*
			sub-	under, below	*subset, subtitle, subcommittee*
Against prefixes			*anti-*	against	*antifreeze, antiwar, antidiscrimination*
			counter-	against, opposite	*counterclockwise, counterargument*
Bad prefixes	*mis-*			bad, wrong	*misspell, misunderstand, misbehave*
			mal-	bad, wrong	*malnutrition, maltreat, malformed*
Number prefixes		*uni-*		one	*unicycle, unicolor, unicellular*
		mono-		one	*monorail, monotone, monoplane*
		bi-		two	*bicycle, biweekly, biplane*
		tri-		three	*tricycle, triangle, trimotor*
Other useful prefixes	*re-*			again, back	*rewrite, rebuild, rearrange*
		de-		take away, from	*deice, debug, defrost*
			co-	with, together	*coauthor, coequal*
More and most suffixes	*-er*			more of something	*taller, smarter, warmer*
	-est			more of something	*tallest, smartest, warmest*
Person who suffixes	*-er*			person who	*teacher, writer, banker*
	-or			person who	*sailor, actor, explorer*
			-ist	person who	*artist, guitarist, nutritionist*
			-ee	person who	*employee, trainee, attendee*
Other useful suffixes	*-ful*			full of	*useful, joyful, cheerful*
	-ness			state or quality of	*weakness, illness, careless*
	-ly			like, full of	*clearly, costly, carefully*
		-y		like, full of	*lengthy, chilly, wealthy*
		-less		without	*hopeless, worthless, careless*
		-able		can be, worthy	*doable, workable, knowledgeable*

Source: Manyak et al. (2018, pp. 292-293).

Week 1	Week 2	Week 3	Week 4
suff: *-ness* (state or condition)	**prefix: *mal-* (bad)**	**prefix: *ob-* (against)**	**suffix: *-able* (able to)**
haplessness	malevolent	obstinate	capable
wilderness	malignant	obsequious	despicable
lowliness	maladjusted	obtuse	implacable
bitterness	malady	obstreperous	variable
selflessness	malicious	oblique	enviable
Week 5	**Week 6**	**Week 7**	**Week 8**
root: *fac, fic* (make)	**root: *sur* (above)**	**root: *cog, gno* (know)**	**prefix: *sub-* (under, below)**
benefactor	insurmountable	recognize	subjugate
refectory	surfeit	cognition	substrate
facsimile	resurgent	diagnosis	sublime
malefactor	insurrection	ignorant	suborn
fictive	surpass	incognito	subservient

Teach roots as clusters


Self-Efficacy
Background Knowledge
Verbal Reasoning
Sentence Analysis
Word Knowledge
Word Recognition

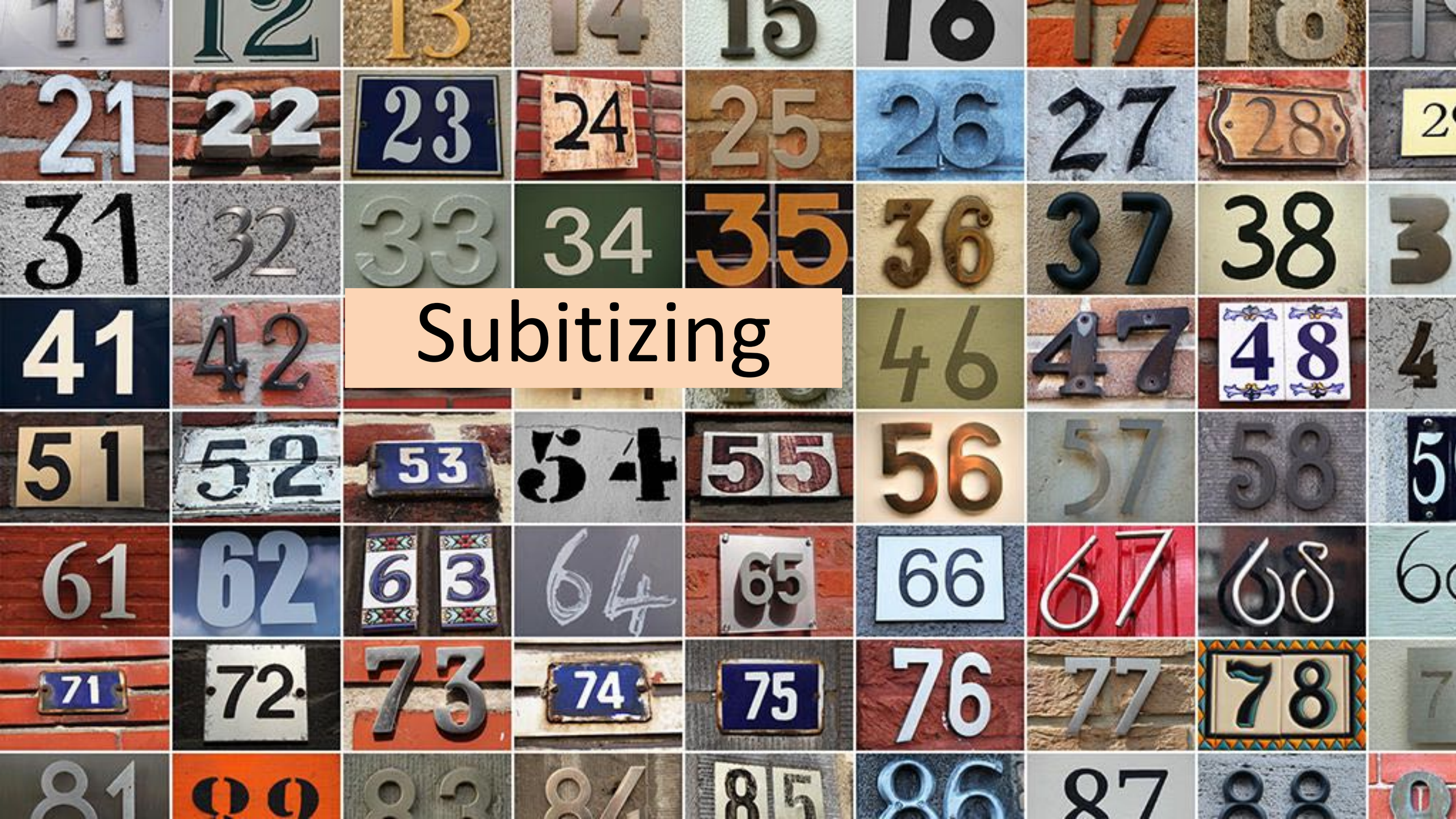
Words are tools to…

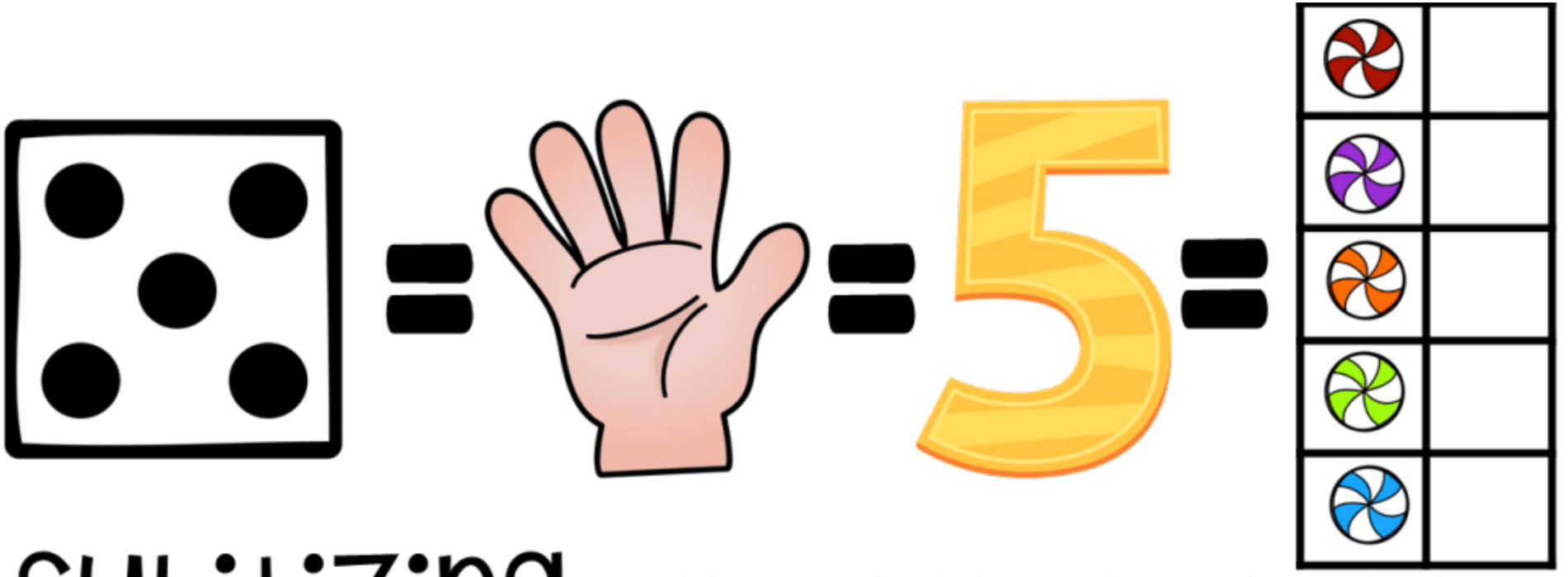
- express ideas
- learn about new concepts
- access background knowledge

Vocabulary knowledge is a strong predictor of listening and reading comprehension.

We don’t learn words, we learn concepts.

Words are the labels for those concepts.


Subitizing



SUbitiZing is the ability to identify a quantity quickly, without counting.

Subitizing:

Instantly recognizing quantities

How do you choose vocabulary for instruction?

Types of Vocabulary

- **General/Tier 1:** Commonplace; learned from interactions with texts and people
- **Specialized/Tier 2/General Academic:** Change meaning with context; “polysemous” (general academic)
- **Technical/Tier 3/Domain-specific:** Specific to the discipline (domain-specific)

A starting point for selecting vocabulary

Influence of Background Knowledge

Catherine the Great, a minor aristocrat from Germany, became Empress of Russia when her husband Peter, the grandson of Peter the Great, was killed.

Influence of Background Knowledge

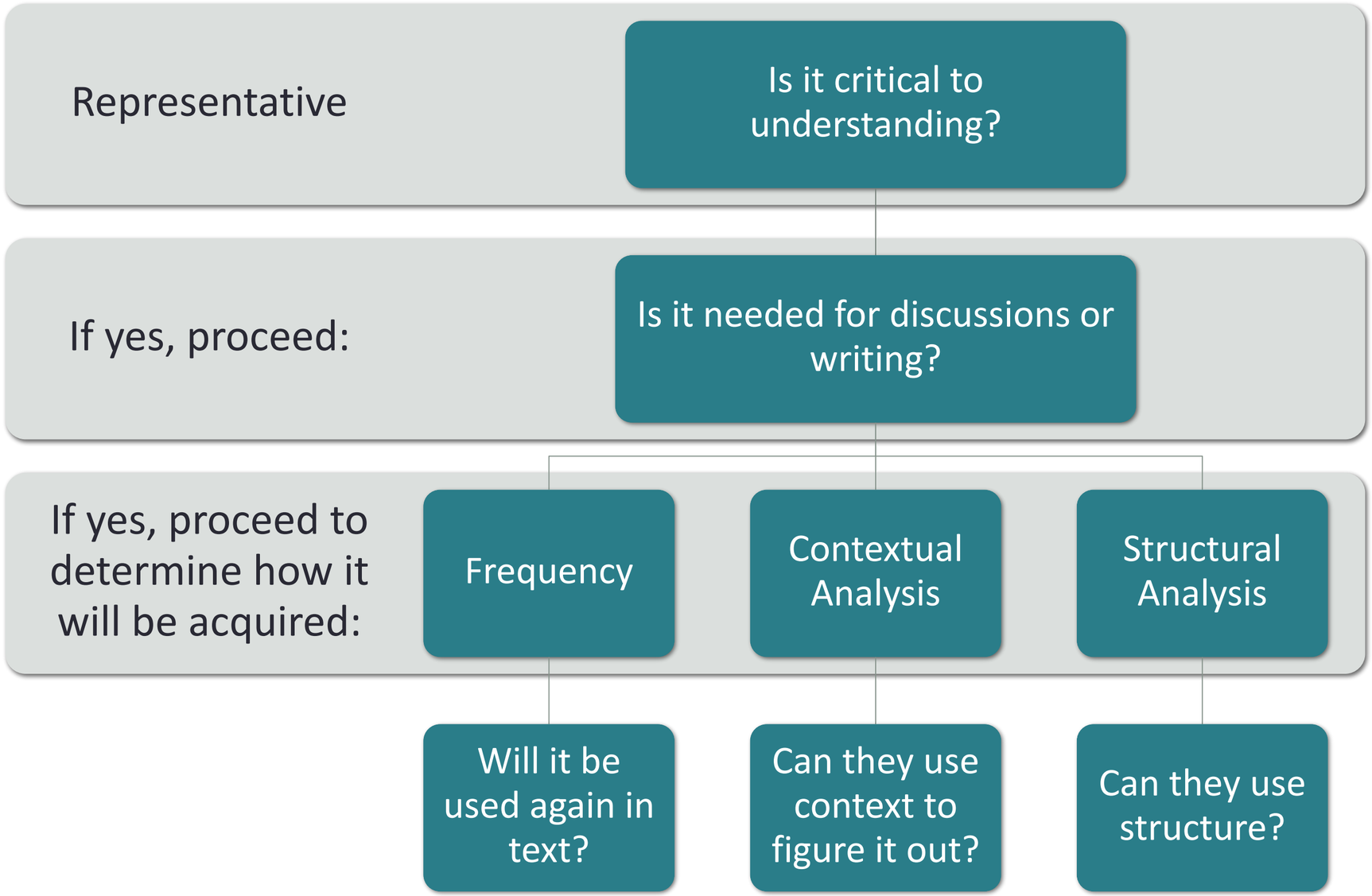
Catherine the Great, a minor aristocrat from Germany, became Empress of Russia when her husband Peter, the grandson of Peter the Great, was killed.

There's a difference between words worth knowing and those that are essential to understanding.

Tunic

Utopia

Questions for Selecting Vocabulary



Vocabulary Development	
Incidental Word Learning	**Explicit Word Learning**

Evidence-based vocabulary instruction leverages incidental and explicit word learning.

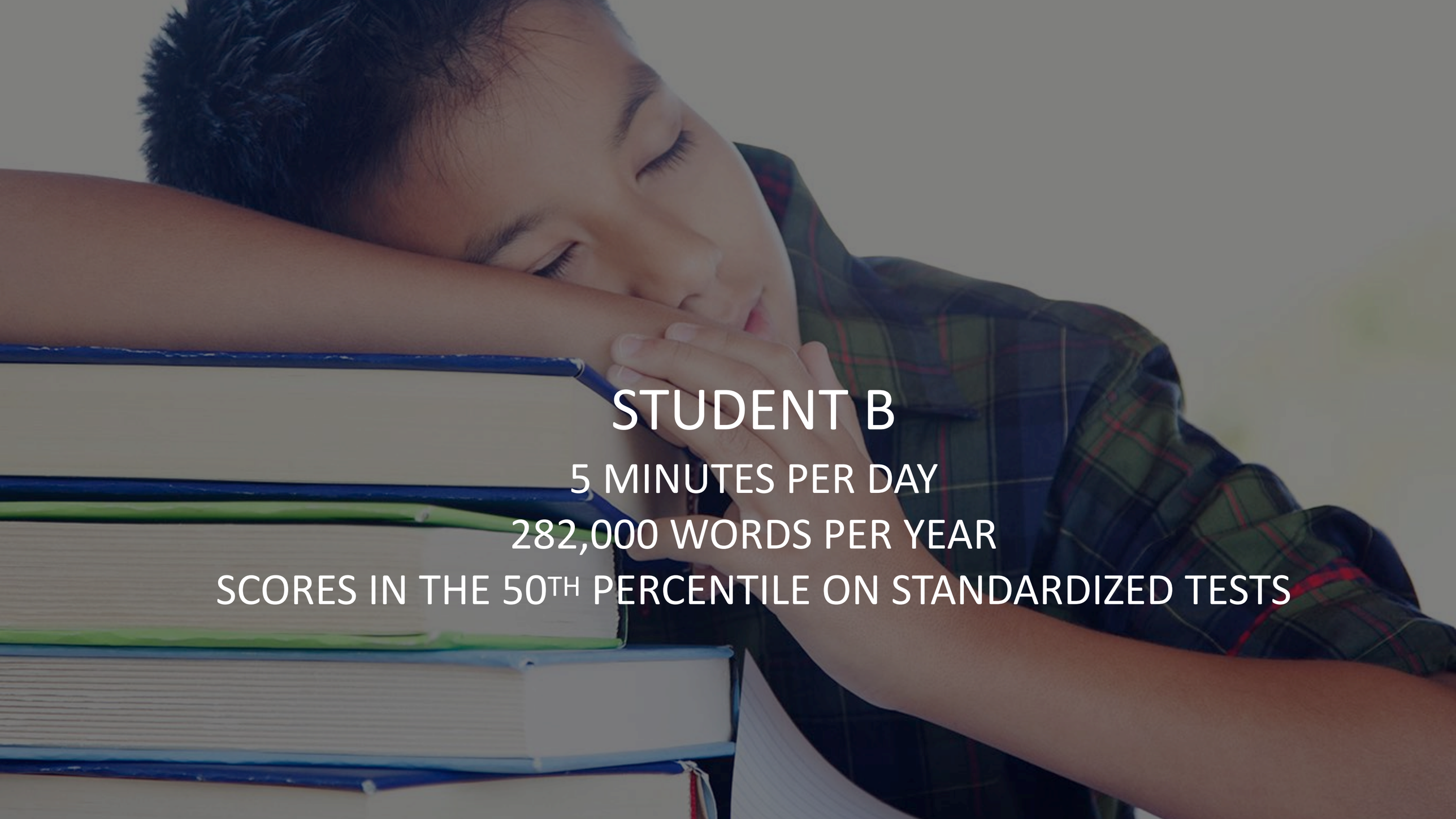
Vocabulary Development	
Incidental Word Learning	**Explicit Word Learning**
Notice and discuss unfamiliar words during daily interactions with students Wide reading of text that introduce new words and concepts Listening comprehension and discussion Wordplay and games	

Evidence-based vocabulary instruction leverages incidental and explicit word learning.

The Value of Reading Volume

STUDENT A

- 20 MINUTES PER DAY
- 1,800,000 WORDS PER YEAR
- SCORES IN THE 90TH PERCENTILE ON STANDARDIZED TESTS

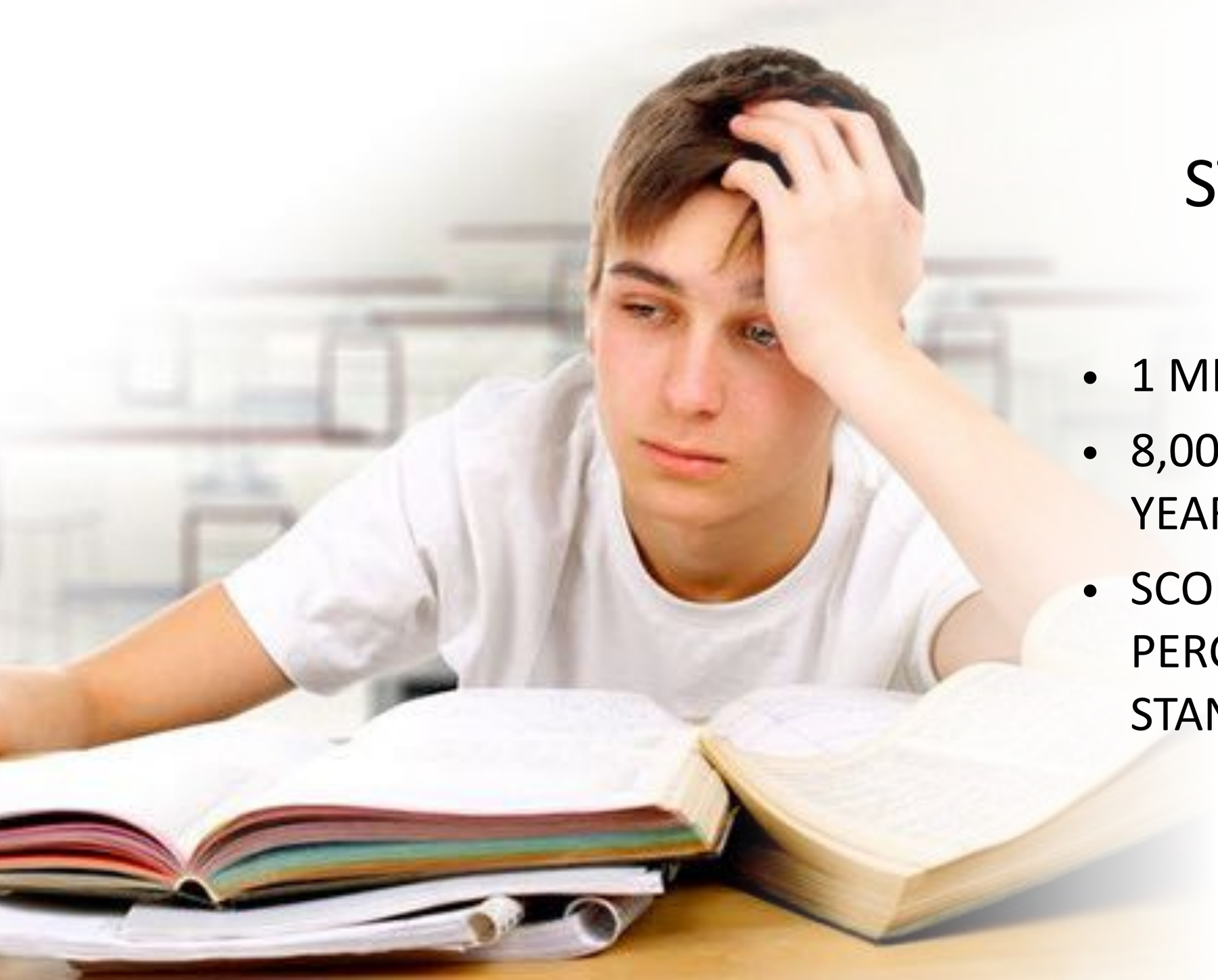


STUDENT B

5 MINUTES PER DAY

282,000 WORDS PER YEAR

SCORES IN THE 50TH PERCENTILE ON STANDARDIZED TESTS



STUDENT C

- 1 MINUTE PER DAY
- 8,000 WORDS PER YEAR
- SCORES IN THE 10TH PERCENTILE ON STANDARDIZED TESTS

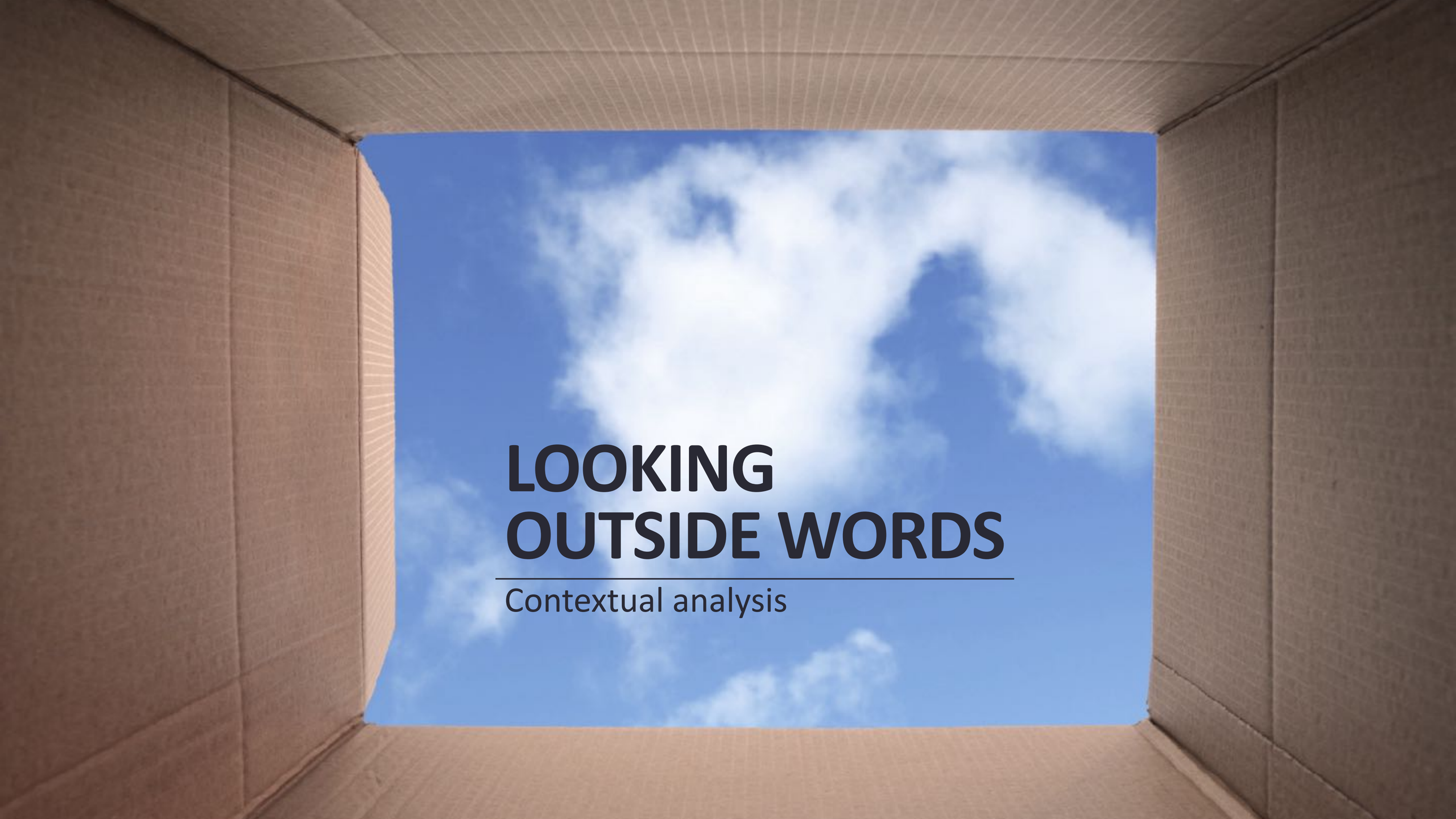
Vocabulary Development	
Incidental Word Learning	**Explicit Word Learning**
Notice and discuss unfamiliar words during daily interactions with students Wide reading of text that introduce new words and concepts Listening comprehension and discussion Wordplay and games	Direct instruction in pronunciation, word meanings, parts of speech, etc. Word-solving strategies • Using context • Using word parts • Using resources (e.g., dictionary) Peer interactions that require word usage

Evidence-based vocabulary instruction leverages incidental and explicit word learning.

Direct instruction or word solving?

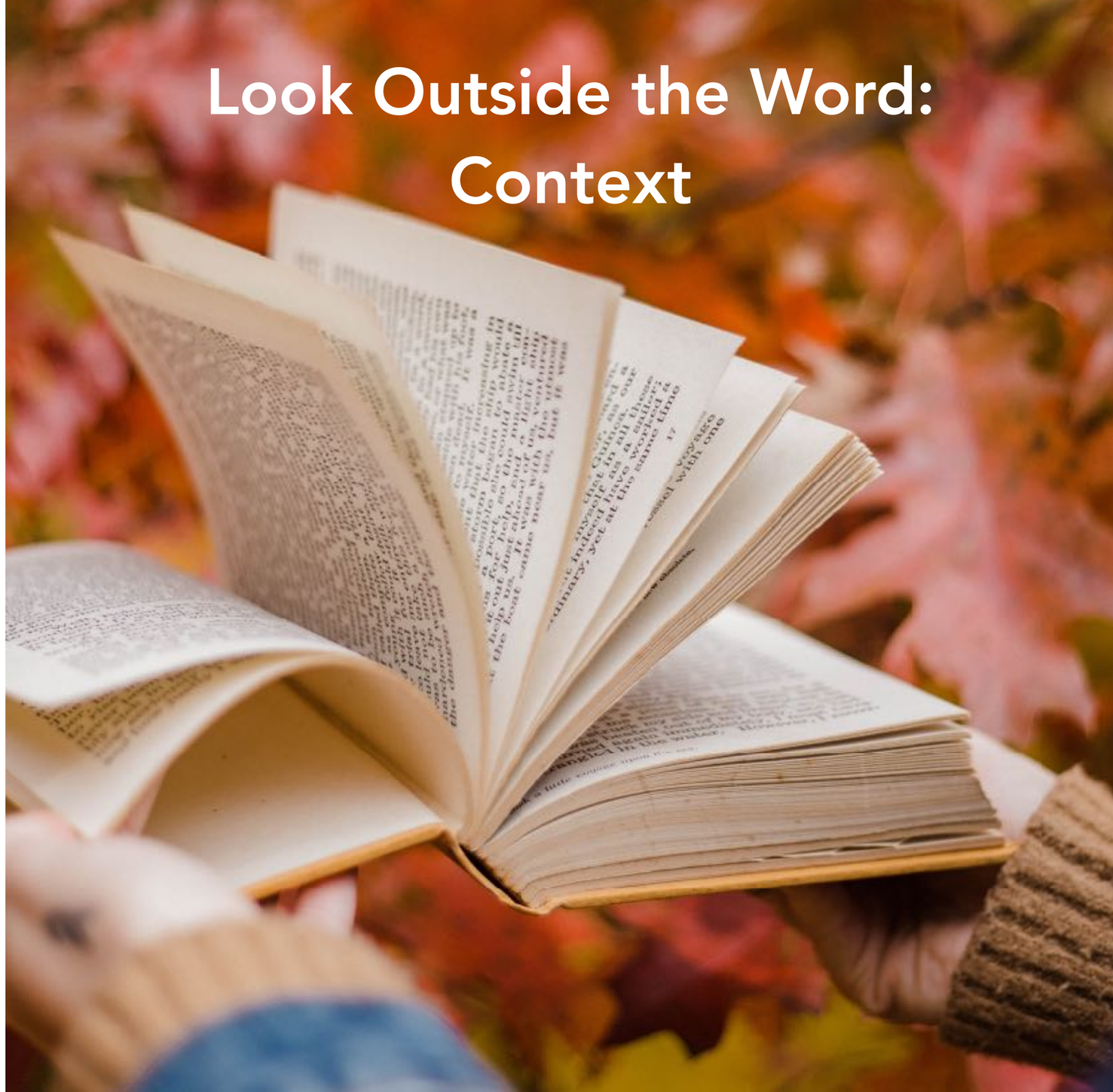
LOOK INSIDE THE WORDS: USE THE POWER OF MORPHOLOGY

Structural analysis


LOOKING
OUTSIDE WORDS
Contextual analysis

Look Outside the Word: Context

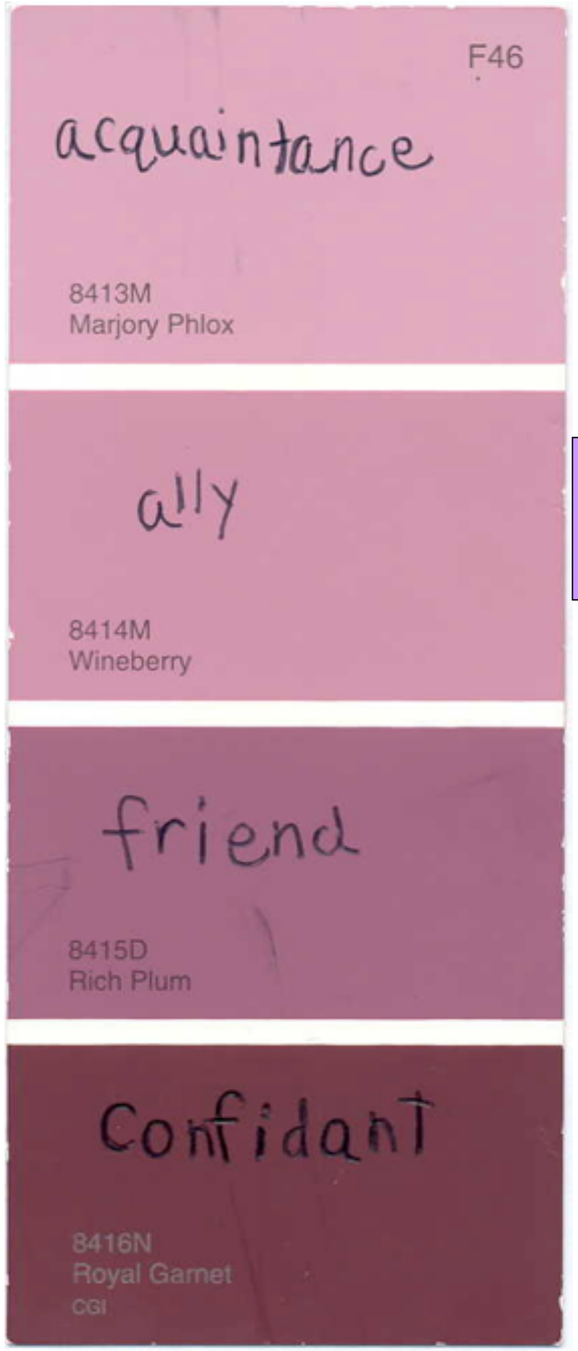
- Definition/Explanation
- Restatement/Synonym
- Contrast/Antonym
- Inference/General Context
- Punctuation



Make it Useable with Peer Collaboration

Sara's Vocabulary Card in World History

Ultimatum	a demand that is backed up with a threat, usually to declare war.
	Compromise



Mubarik's Shades of Meaning in Sixth Grade English

https://www.teachingchannel.org/video/build-student-vocabulary

Alphabet Vocabulary Chart

A-B	C-D	E-F	G-H
I-J	K-L	M-N	O-P
Q-R	S-T	U-V-W	X-Y-Z

Alphabet Vocabulary Chart

A-B	C-D crater	E-F	G-H
I-J	K-L lava	M-N magma	O-P
Q-R	S-T	U-V-W volcano	X-Y-Z

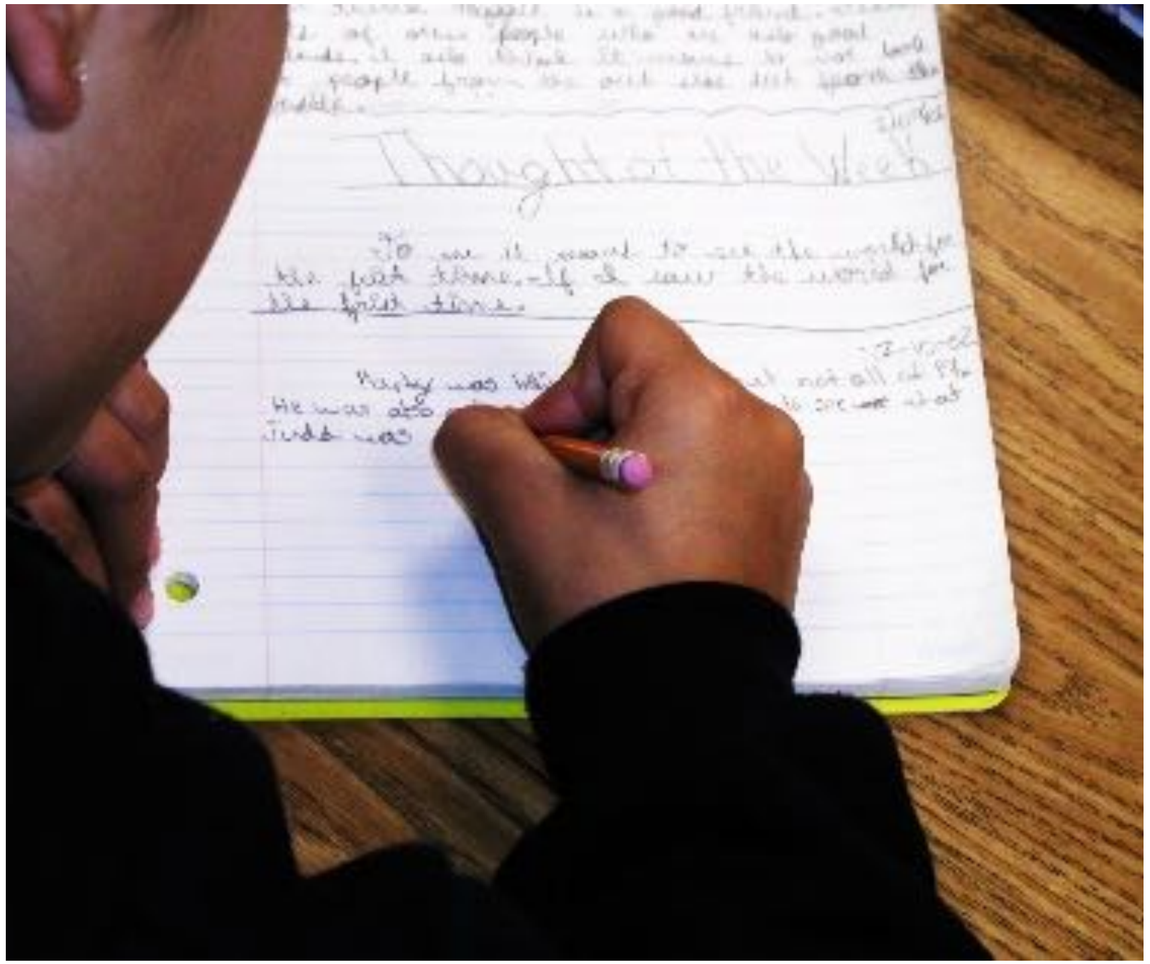
Alphabet Vocabulary Chart

A-B ash	C-D crater cinder cone	E-F flow	G-H
I-J	K-L lava	M-N magma magnitude	O-P
Q-R Rim of Fire	S-T shield volcano tremor	U-V-W volcano vent volcanologist	X-Y-Z

Alphabet Vocabulary Chart

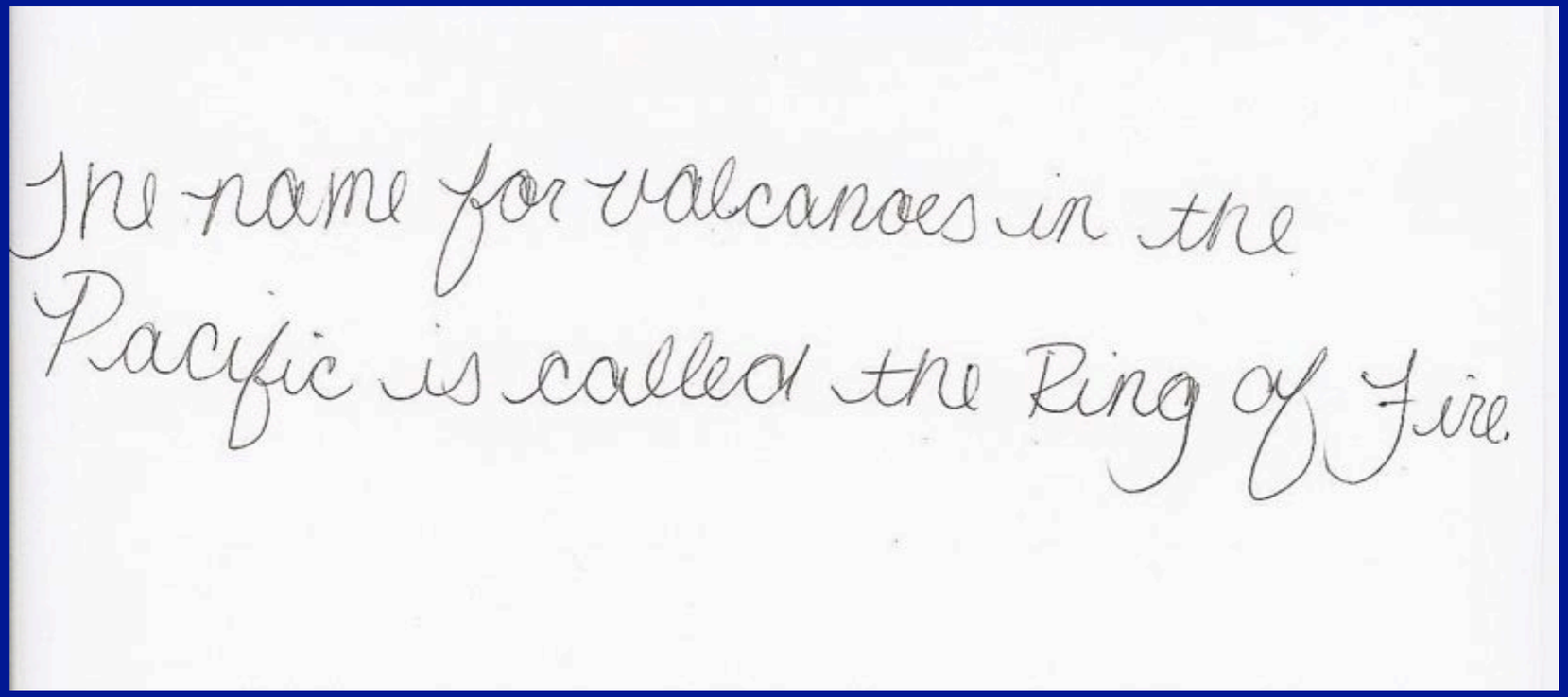
A-B	C-D	E-F	G-H
ash active balsat	crater cinder cone caldera	flow eruption extrusion	geothermal harmonic tremor
I-J	K-L	M-N	O-P
intrusion	lava lahar	magma magnitude mantle	obsidian pahoehoe pillow lava
Q-R	S-T	U-V-W	X-Y-Z
Rim of Fire	shield volcano tremor	volcano vent volcanologist	xenoliths

Generative Sentences

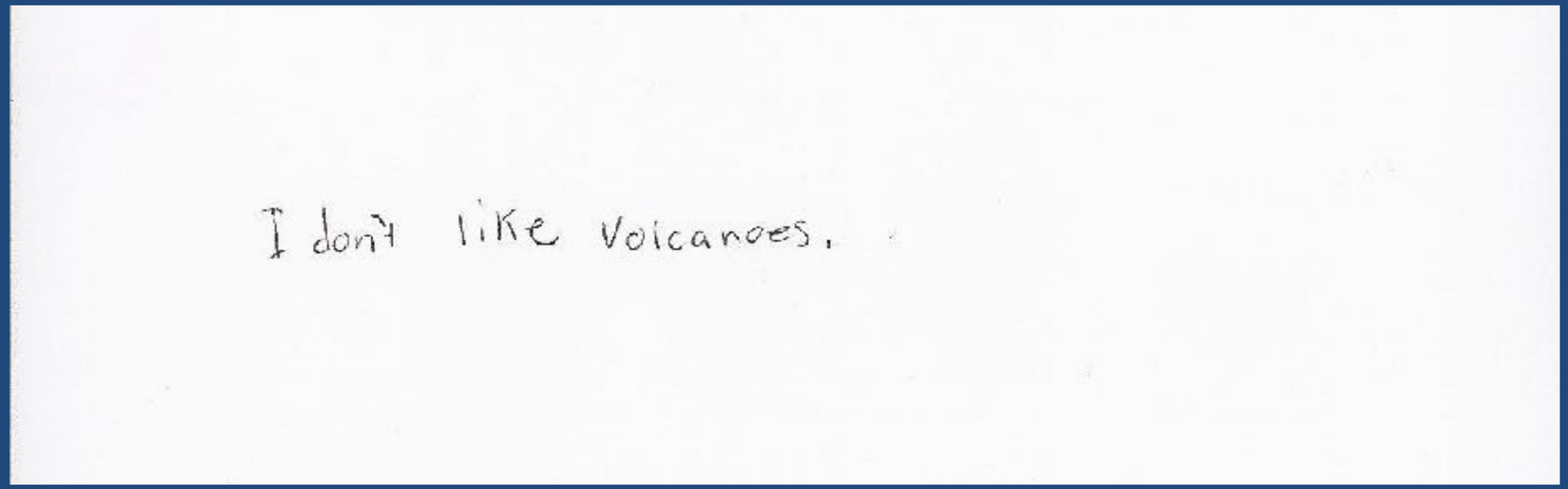


- Given a word and conditions about the placement of the word, write a sentence
- Forces attention to grammar and word meaning
- Use student examples for editing

“Volcanoes” in the 4th Position



“Volcanoes” in the 4th Position



Try these . . .

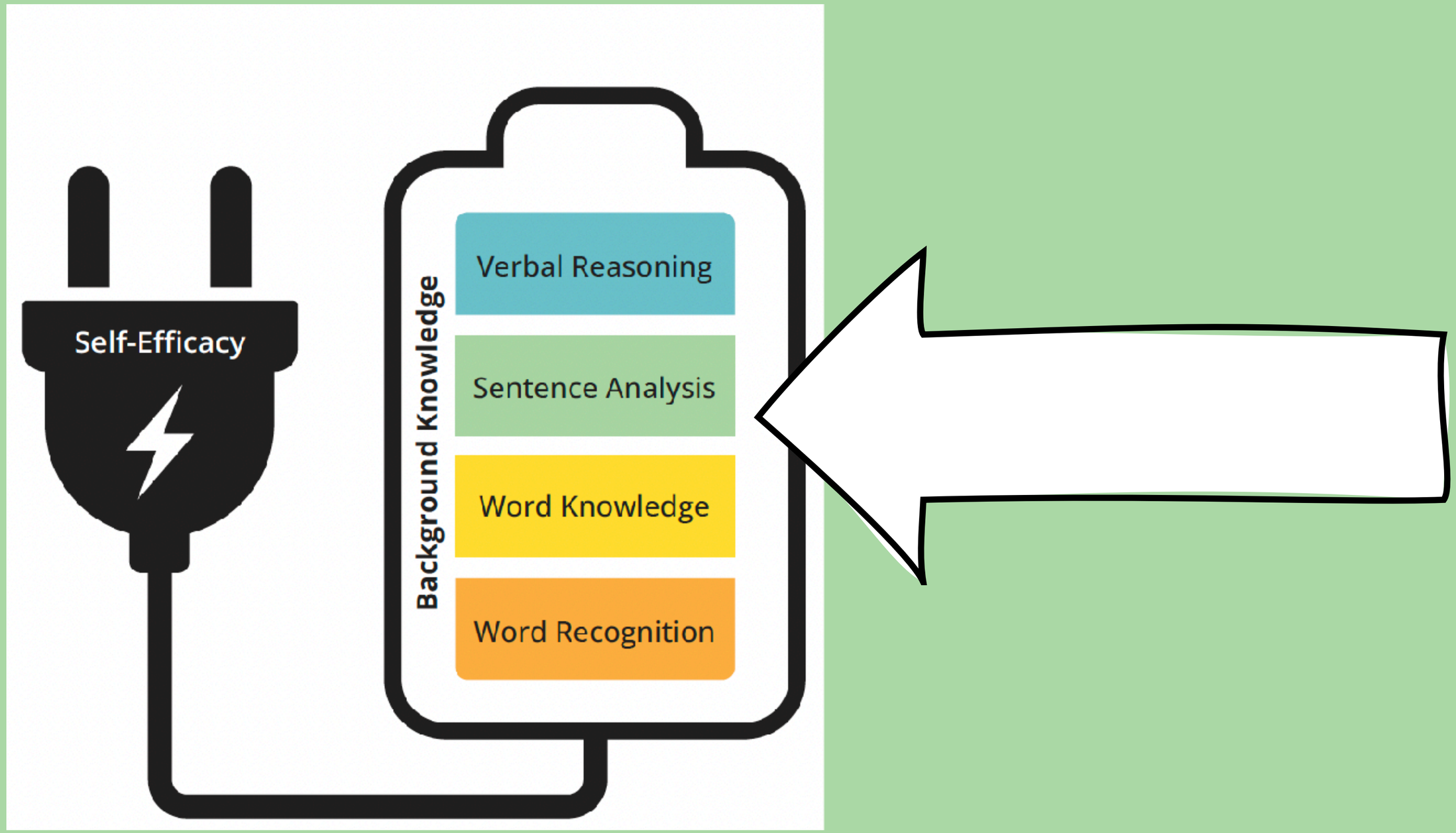
Word	Position	Length
cell	3rd	> 6

Try these . . .

Word	Position	Length
cell	3rd	> 6
Because	1st	< 10

Try these . . .

Word	Position	Length
cell	3rd	> 6
Because	1st	< 10
Constitution	last	= 10


Self-Efficacy
Background Knowledge
Verbal Reasoning
Sentence Analysis
Word Knowledge
Word Recognition

Why Sentence Analysis?

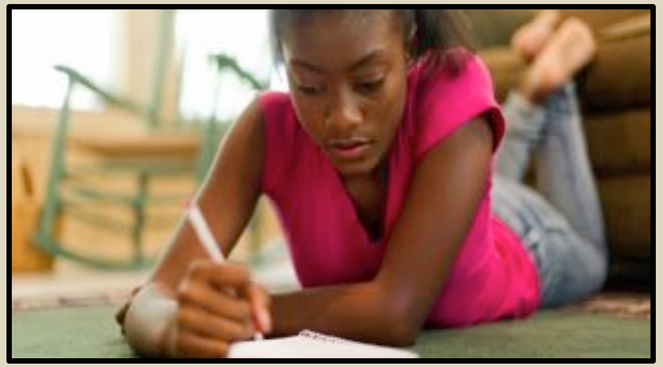
Improves comprehension: Research indicates that analyzing sentence structures enhances understanding of complex texts.

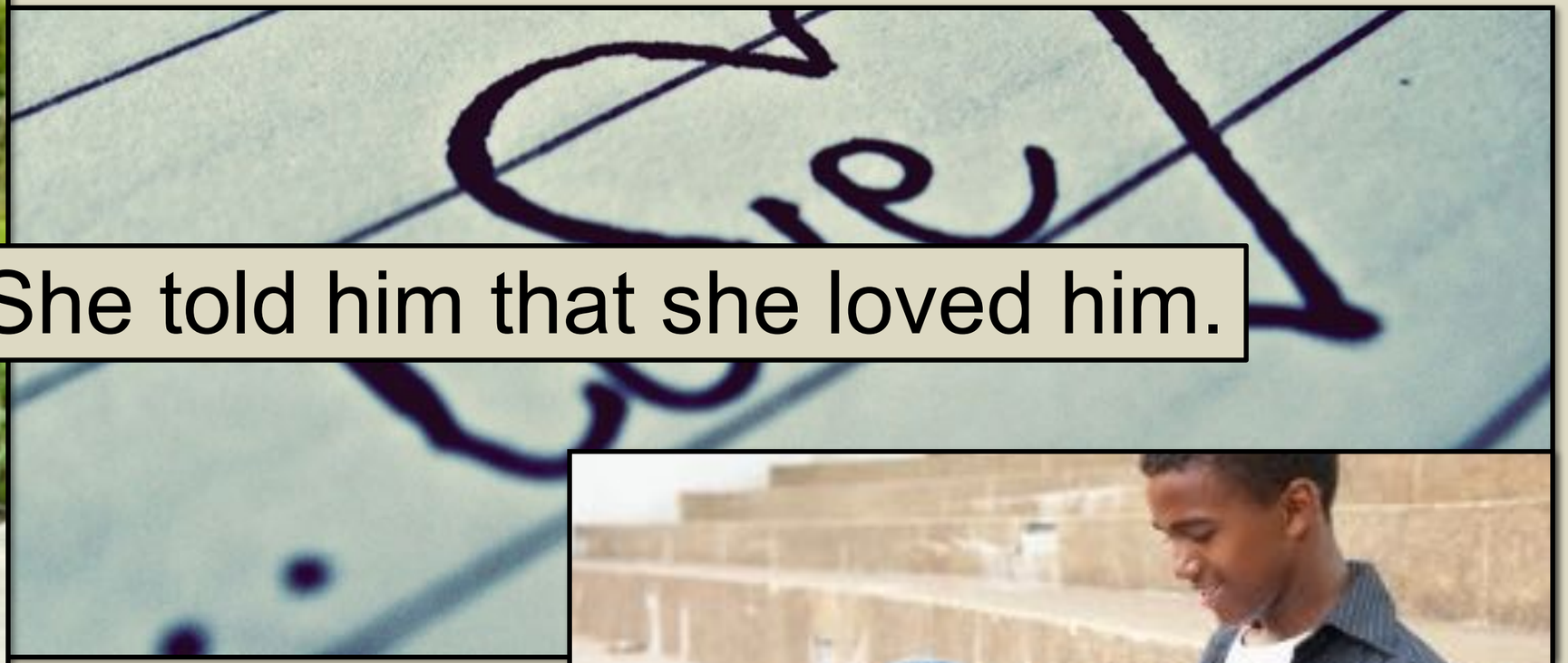
Supports struggling readers: Sentence-level interventions are particularly effective for students with uneven reading profiles (Lovett et al., 2022).

Bridges the gap between word recognition and text comprehension: Sentence analysis connects smaller units of meaning (words) to larger ideas in texts.

Syntax matters.

Insert the word "only" anywhere in the following sentence:

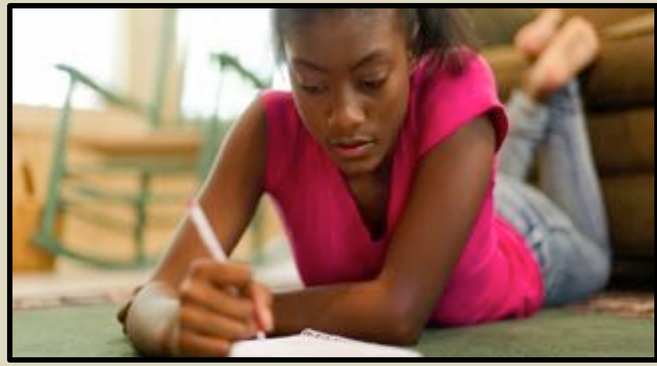




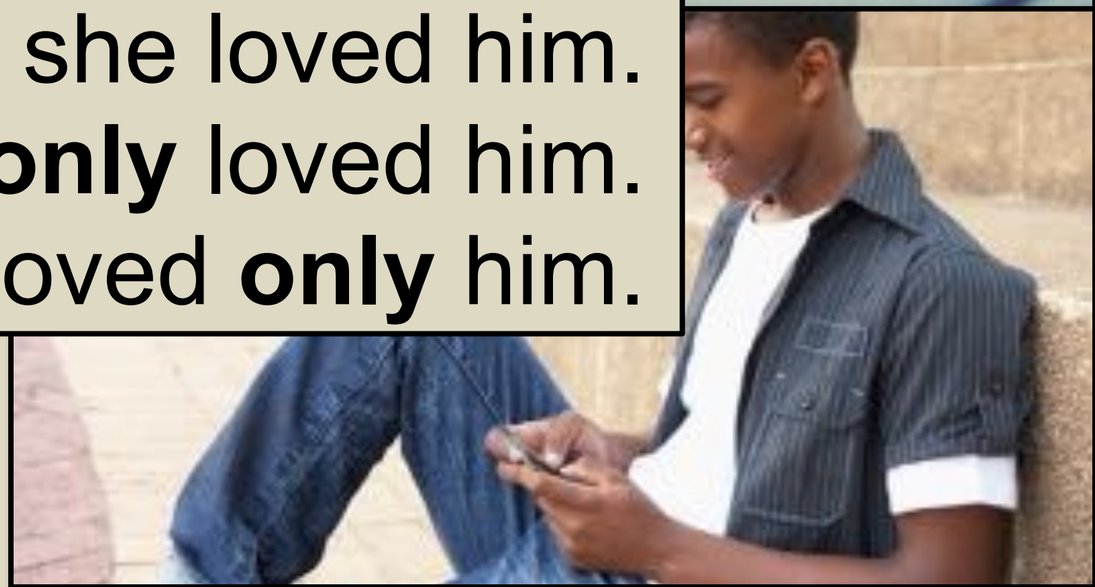
She told him that she loved him.

Syntax matters.

Insert the word "only" anywhere in the following sentence:



She **only** told him that she loved him.
She told **only** him that she loved him.
She told him **only** that she loved him.
She told him that **only** she loved him.
She told him that she **only** loved him.
She told him that she loved **only** him.



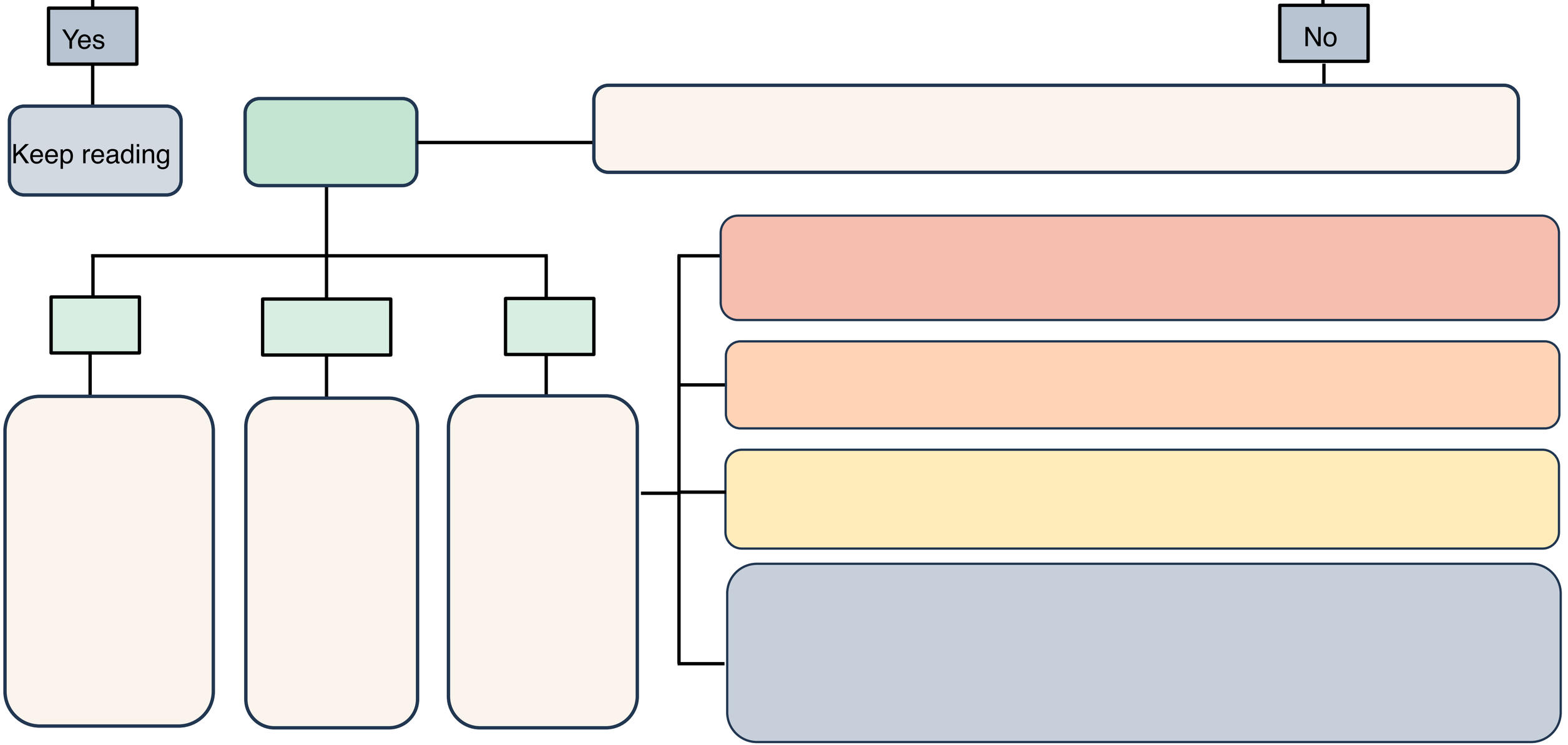
San Francisco Earthquake Disaster of 1906

Generative Sentence challenges	Kylie wrote the following generative sentences
•Write a sentence that is at least 10 words in length with the word *inadequate* in the ninth position.	The response of the military was heroic but inadequate, so the city burned.
• •Write a sentence that is between seven and nine words in length with the word *catastrophe* in the ending position.	Newspapers across the country called it a catastrophe.
• •Use the word *genuine* in a sentence that has a dependent clause.	After the earthquake, the people had genuine concerns about going back into buildings.
• •Write a sentence with the word *evaluated* and include a parenthetical expression.	•Experts evaluated the disaster and made many improvements to the building code (no more wood structures, stronger materials.)

Image Source: ScienceDirect

Do I understand this part of the text?

Reading Self-Monitoring
Decision Flow Chart



Do I understand this part of the text?

Reading Self-Monitoring Decision Flow Chart

Yes

Keep reading

No

Let me think about why I am having difficulty understanding the text.

Was I distracted?

Yes

That happens. How can I refocus?

- Box breathe
- Drink water
- Stretch
- Remove distractions

I'm not sure.

I can re-read the section and continue to check for understanding after each section.

No

Think. What is it about this text that is making it tricky for for me understand?

Do I need a more background knowledge about the topic? Yes. Review the title, headings, and images. Do a quick internet search on the topic to read about the basics.

Are there a lot of vocabulary words I don't know? Yes. Use the inside-outside the word strategy for the terms that seem important.

The sentences are long or complicated? Yes. Break down longer sentences into smaller parts. Find the subject then the verb of the sentence.

Choose a strategy:

• Create a mind map.
• Use the Juicy Sentences Protocol. • Ask questions as you read.
• Re-read. • Find 3 key words for the section and then summarize.

Juicy Sentences

Fillmore and Fillmore (n.d.)

Under the microscope, a cell looks a lot like a fried egg: It has a white (the cytoplasm) that's full of water and proteins to keep it fed, and a yolk (the nucleus) that holds all the genetic information that makes you *you*.

Under the microscope a cell looks a lot like a fried egg: It has a white (the cytoplasm) that's full of water and proteins to keep it fed, and a yolk (the nucleus) that holds all the genetic information that makes you *you*.

Under the microscope

a cell looks a lot like a fried egg

It has a white (the cytoplasm) that's full of water and proteins to keep it fed

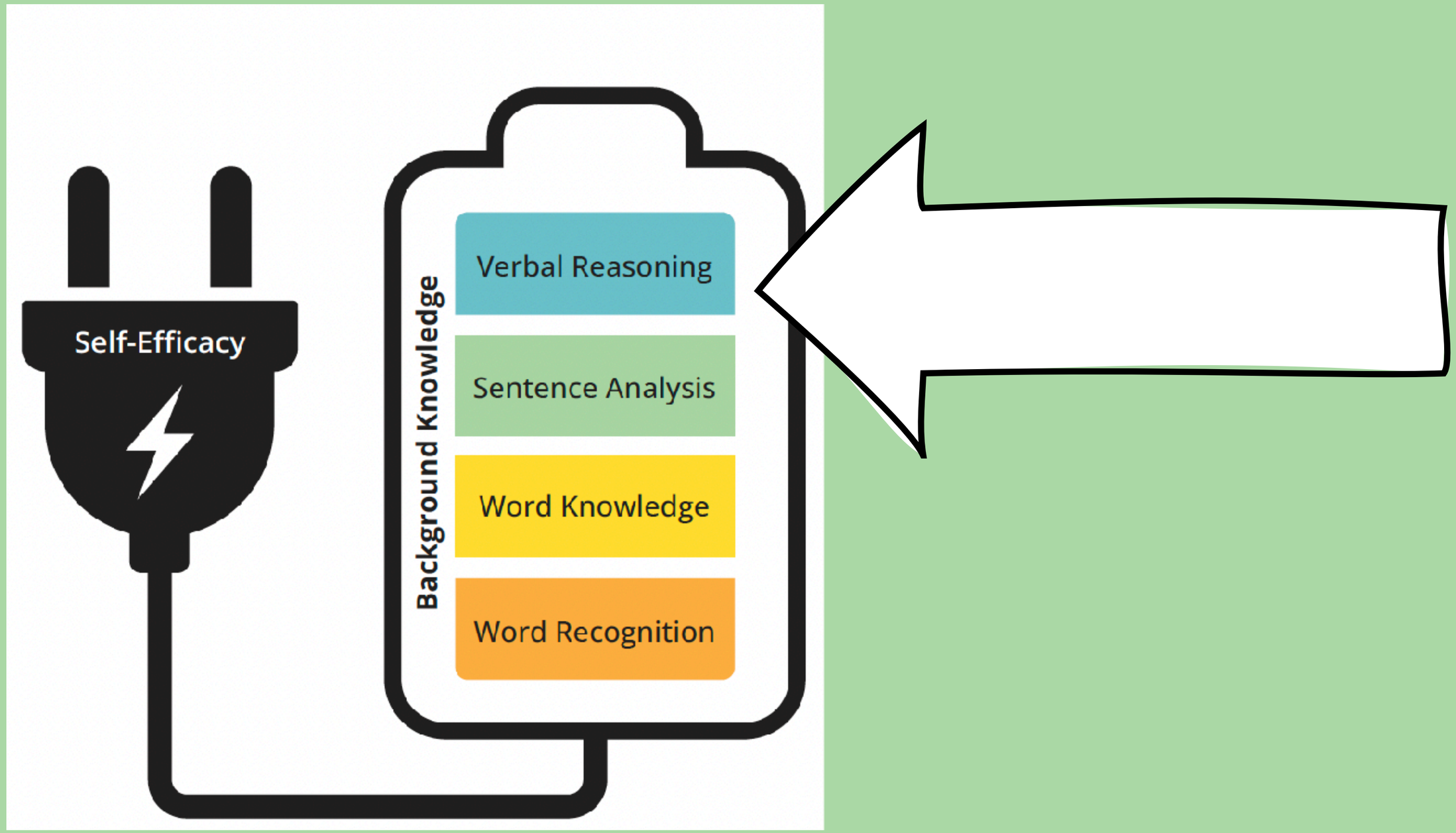
and a yolk (the nucleus) that holds all the genetic information that makes you *you*.

What is under a microscope?

How does it look like a fried egg?

What does it feed on? What is the "it" referring to?

What is genetic information?


Self-Efficacy
Background Knowledge
Verbal Reasoning
Sentence Analysis
Word Knowledge
Word Recognition

What is Verbal Reasoning?

Definition: The ability to process, analyze, and make sense of textual information logically and critically.

Core Components:

- Making inferences
- Connecting ideas
- Evaluating arguments

Research: Verbal reasoning supports deeper comprehension and problem-solving across disciplines (Alexander & Fox, 2011).

As readers mature there is a gradual decline of the relative amount of influence decoding has.

Language comprehension exercises an increasingly dominant role.

(Hoover & Gough, 1990)

“Inferential reasoning skills become an important contributor to reading comprehension at increasing grade levels.”

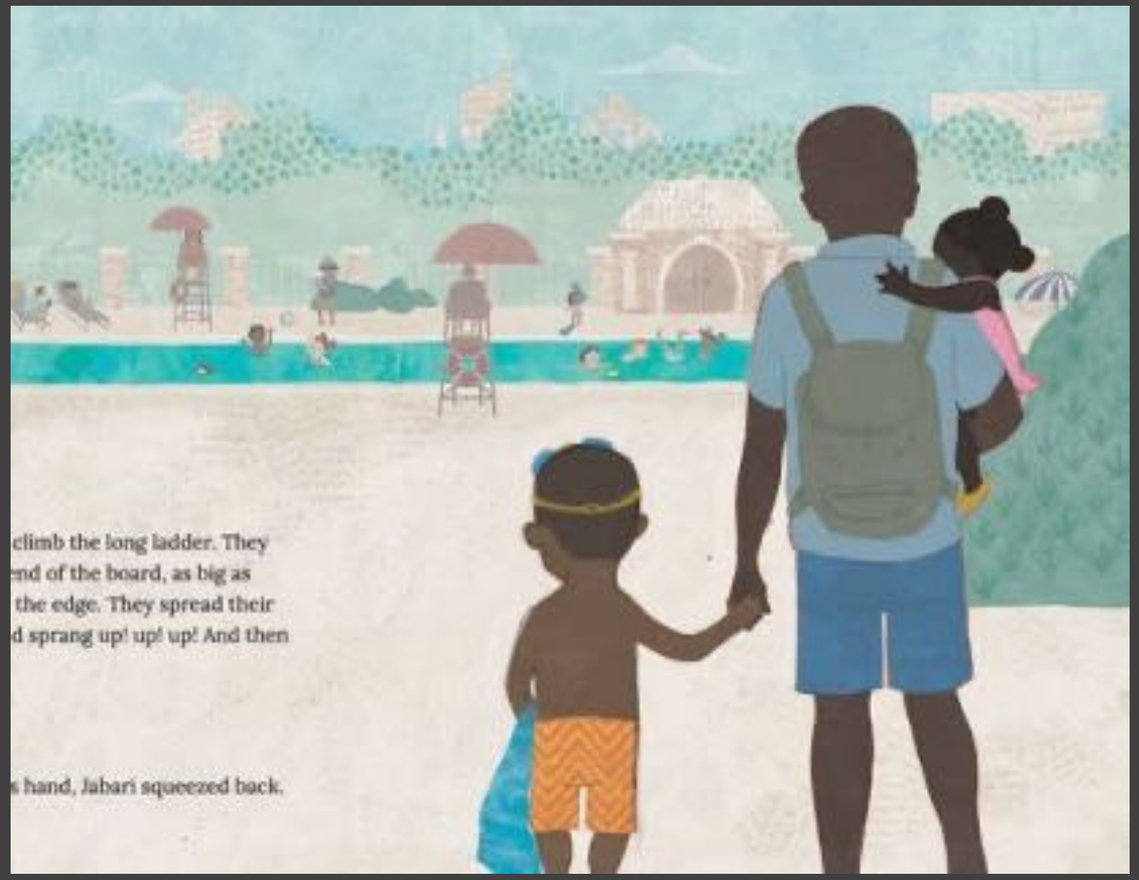
(Tighe & Schatschneider, 2013, p. 101).

Verbal reasoning includes:

- Metaphors
- Referents
- Tone and mood
- Author’s voice
- Forward and backward inferences

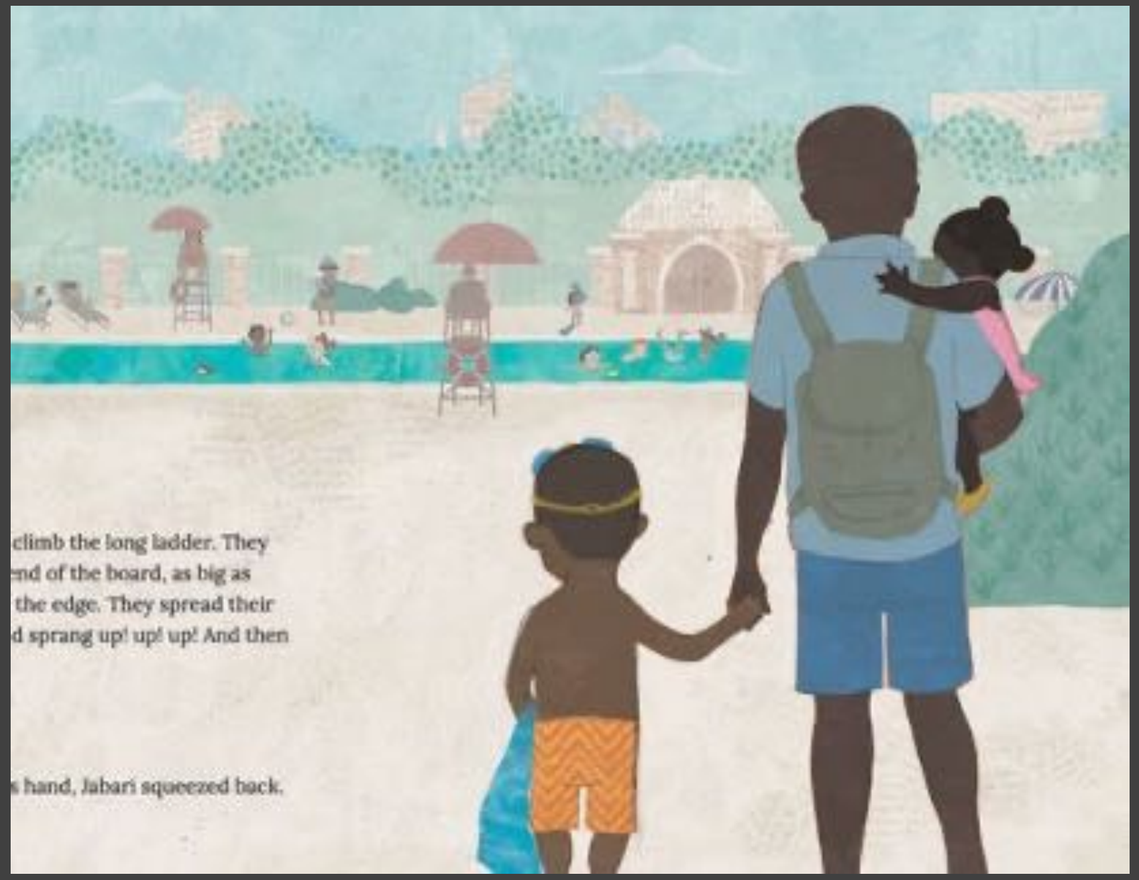
We use verbal reasoning to understand what happened in an across sentences.

Cornwell, J. (2019). *Jabari jumps.* Scholastic.



"Looks easy," Jabari said. But when his dad squeezed his hand, Jabari squeezed back.

- The referent *his* is used twice in the same sentence.
- *But* is a contrastive. If you take it out, there's no longer a reason to question how he's feeling.

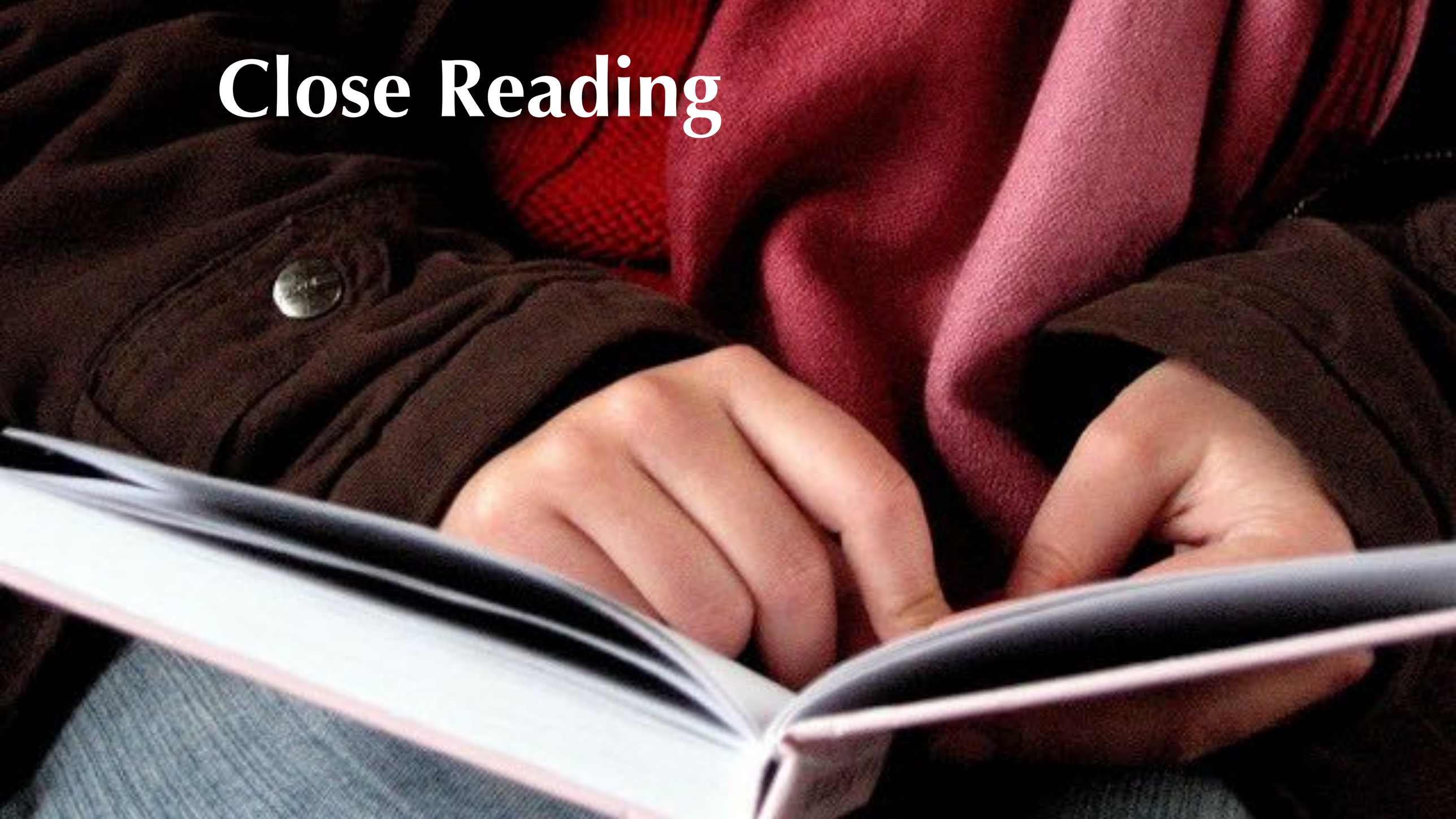


“Looks easy,” Jabari said. But when his dad squeezed his hand, Jabari squeezed back.

Backward inference:

Will it be easy or hard for Jabari when he does jump?

Close Reading



Use a short passage

Creating a Close Reading


Use a short passage
Re-reading
Creating a Close Reading

Facilitating Re-reading

Change the task

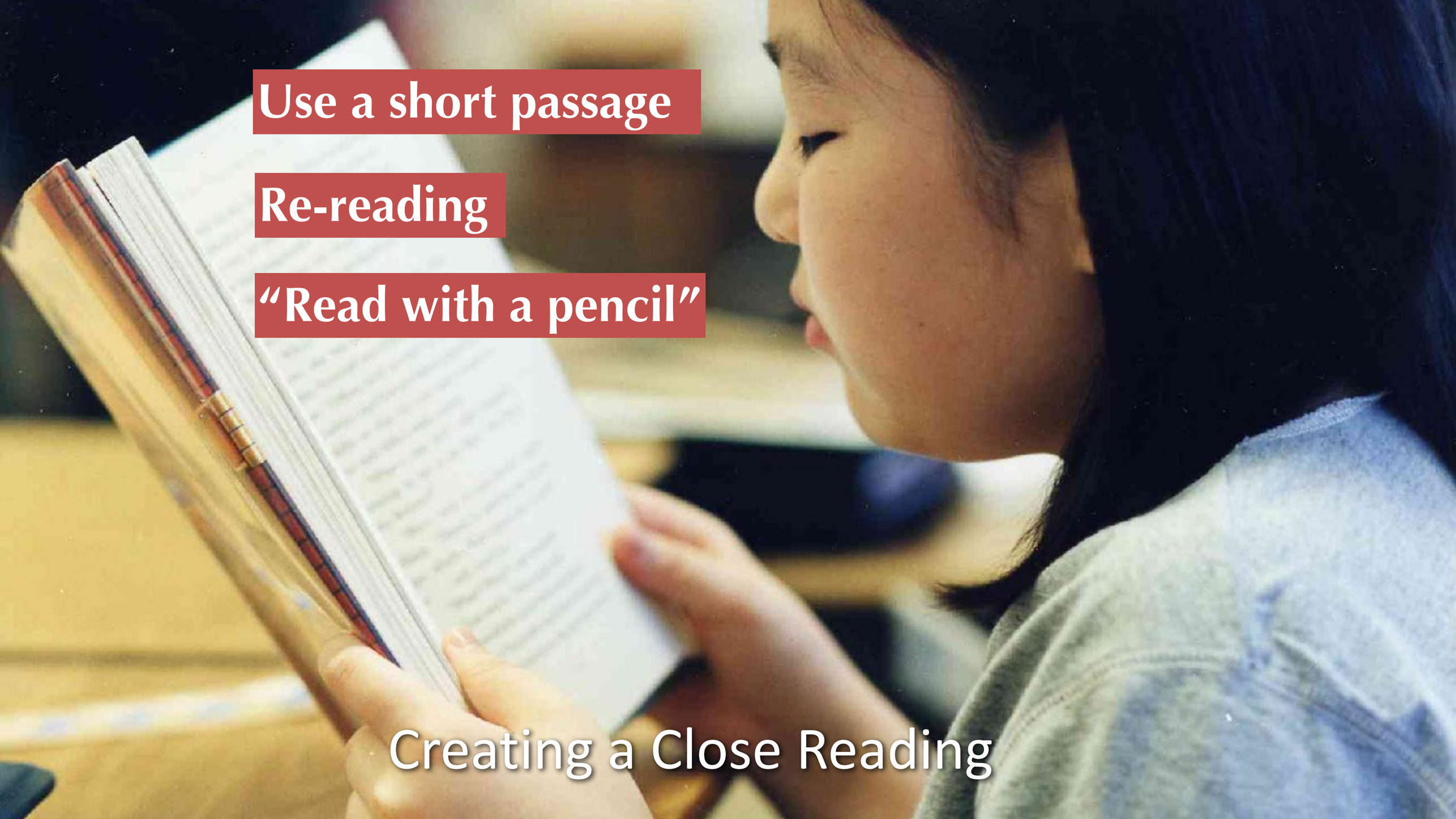
Read for flow. Read for annotation.

Ask a really good question

What is the author's belief about war?

Press for evidence

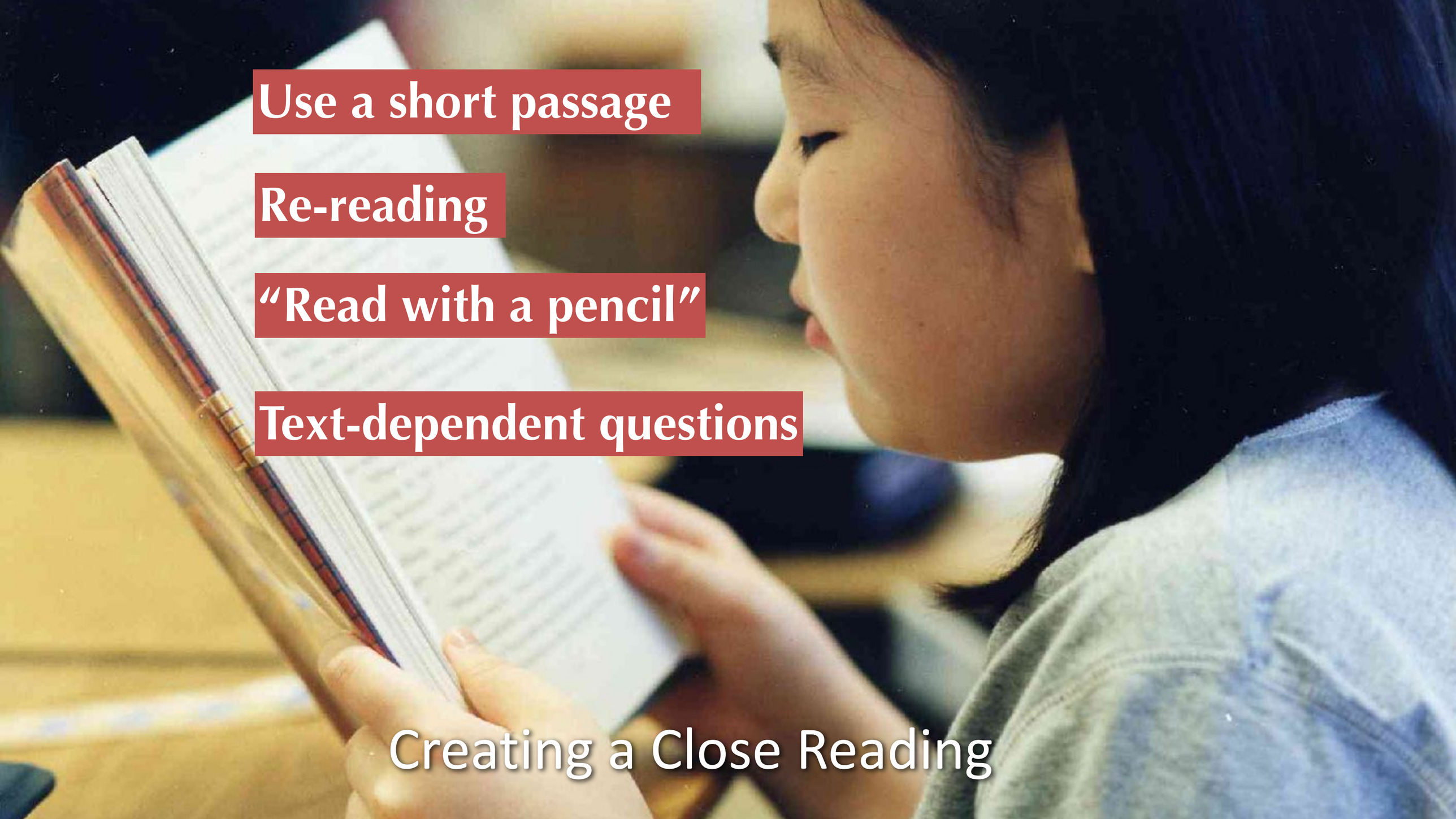
Where did you find that?



Creating a Close Reading

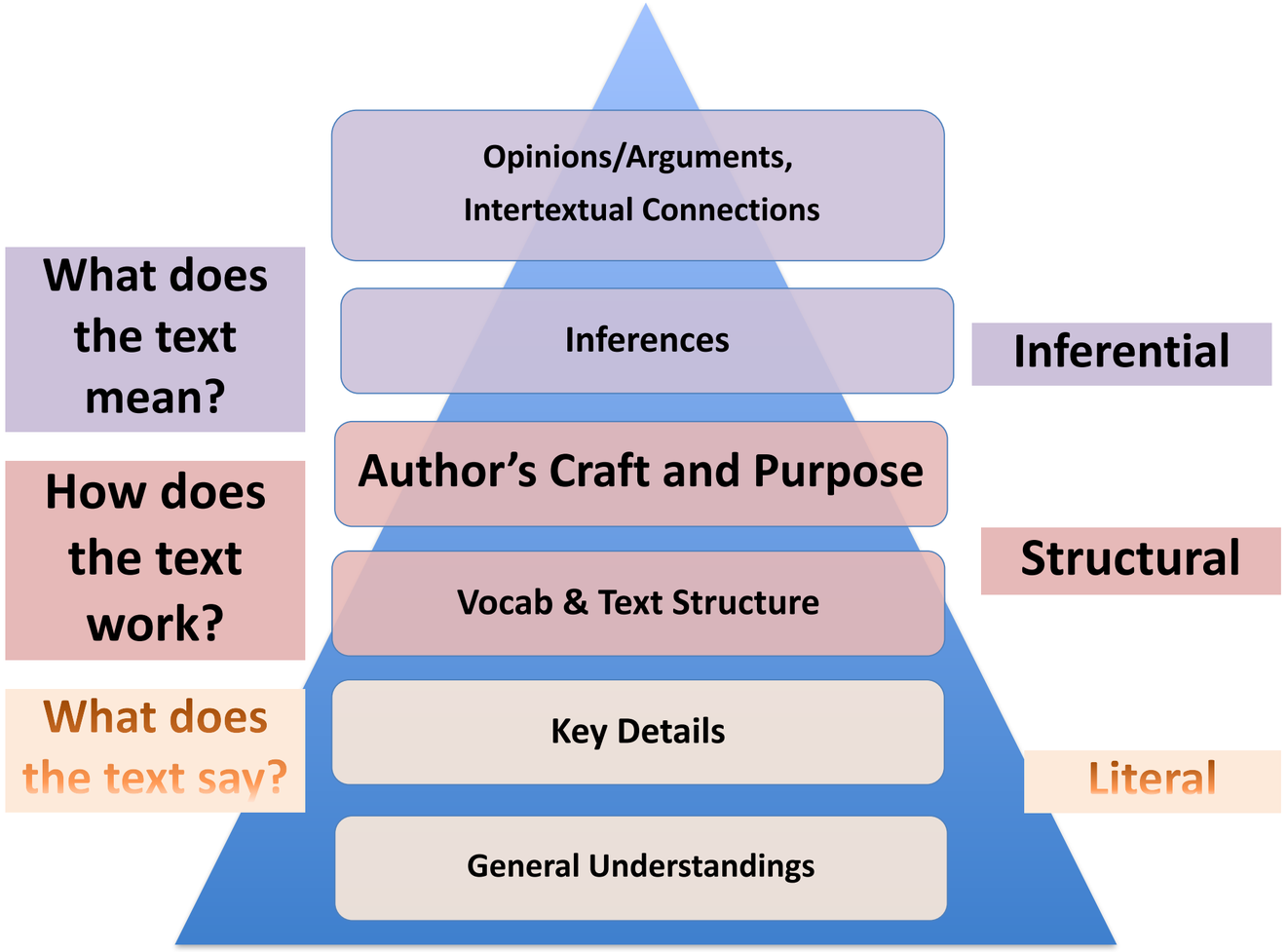
Foundational Annotation Skills

- *Underline* the major points.
- *Circle keywords or phrases* that are confusing or unknown to you.
- Write *margin notes* restating the author's ideas.



Creating a Close Reading

Progression of Text-dependent Questions



Chunking Learning for Success

Chunking isn't just making lessons shorter.

It's sequencing and reducing simultaneous interactions so students can successfully process one meaningful unit before adding the next.

Learning Intention

We are learning about lesson chunking to increase student success.

Success Criteria

- I can **define** lesson chunking.
- I can **identify** the necessary components of lesson segments.
- I can **design** learning experiences that scaffold students' learning.

Tasks

Input

Responses

Evidence

Success

TIRES organizes instruction.

Evidence

Success

Input

Tasks

Responses

It’s not the order. We rotate the TIRES!

Evidence: *What are we noticing about how the student learns, engages, and makes meaning?*

Success

Input

Tasks

Responses

Evidence as a Driver of Learning

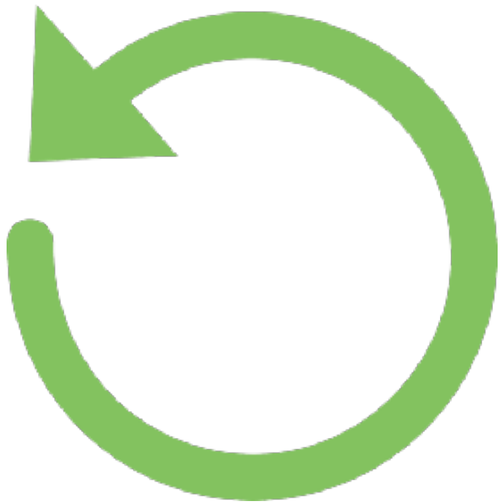
What do I want students to learn?

What evidence would I accept to verify their learning?

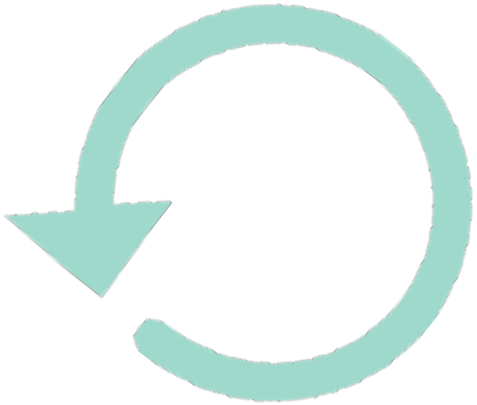
Ralph Tyler, 1949

Assessment Cycles

LONG-CYCLE Formative Assessments



MEDIUM CYCLE Formative Assessments



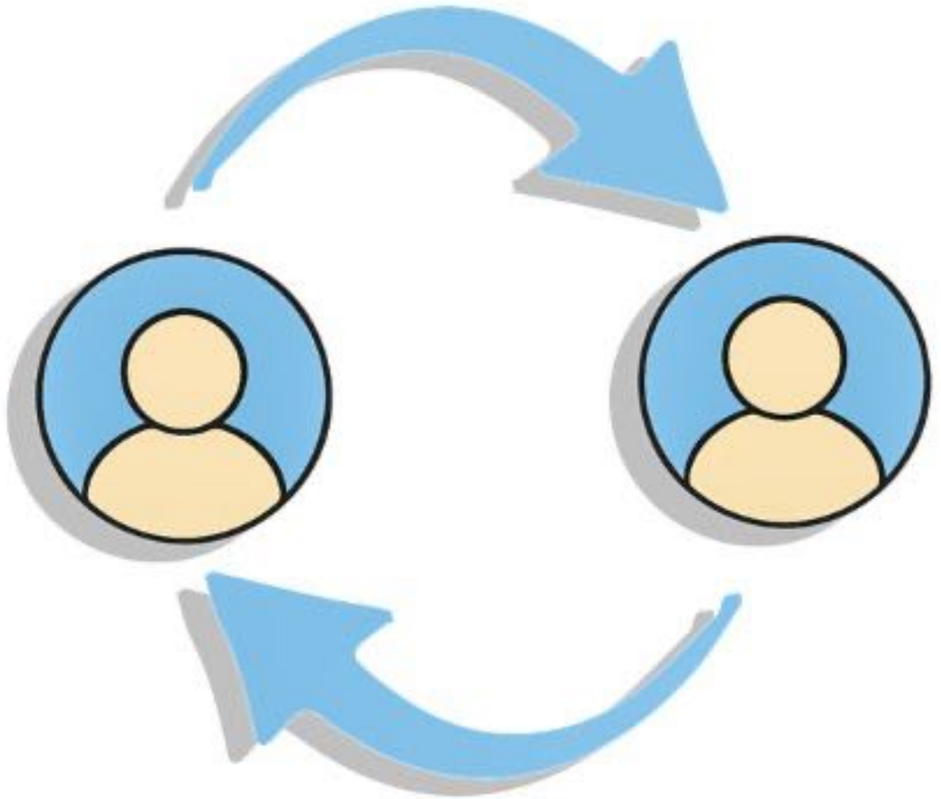
SHORT CYCLE Formative Assessments

Assessment Cycles

Assessment Cycles are Nested
Each Informing the Next Level

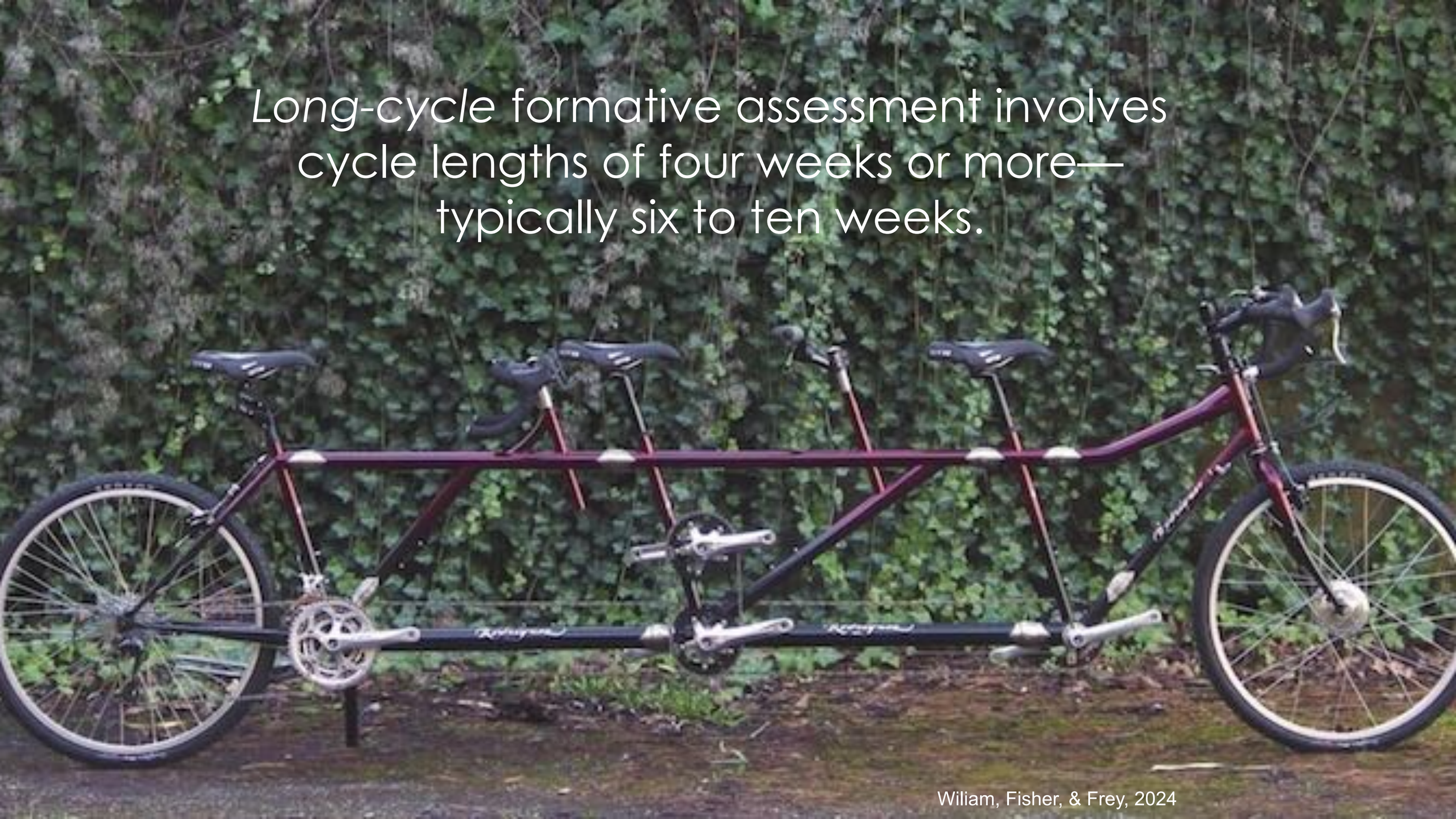
Wiliam, Fisher, & Frey, 2024

Short-cycle formative assessment occurs within and between lessons, day-to-day and even minute-to-minute; not so much every six to ten weeks, but rather every six to ten minutes!

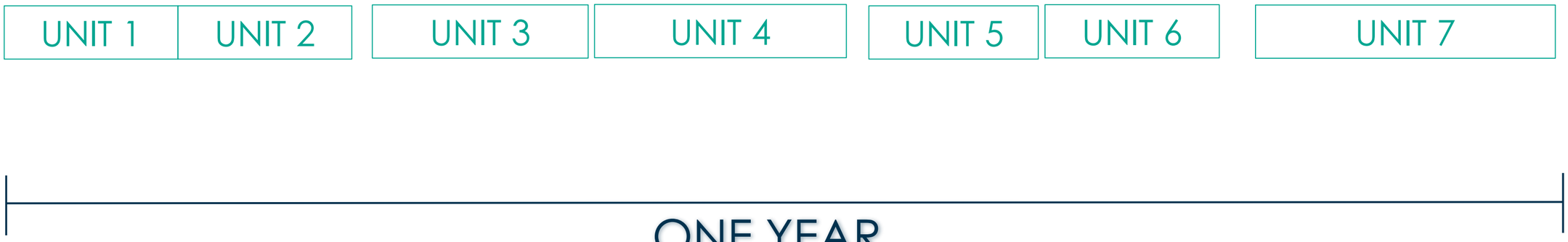


Medium-cycle formative assessment typically occurs within an instructional unit.

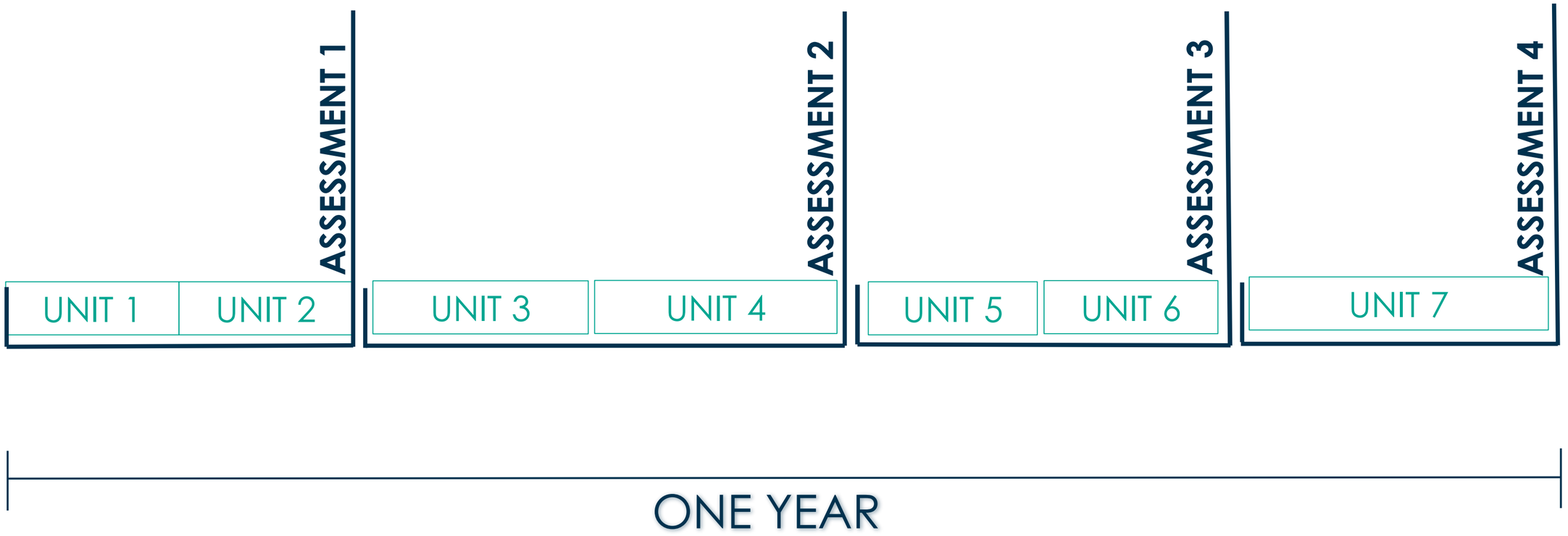
Wiliam, Fisher, & Frey, 2024


Long-cycle formative assessment involves cycle lengths of four weeks or more—typically six to ten weeks.
Wiliam, Fisher, & Frey, 2024

Long-cycle assessment involves cycle lengths of four weeks or more—typically **six to ten weeks**.

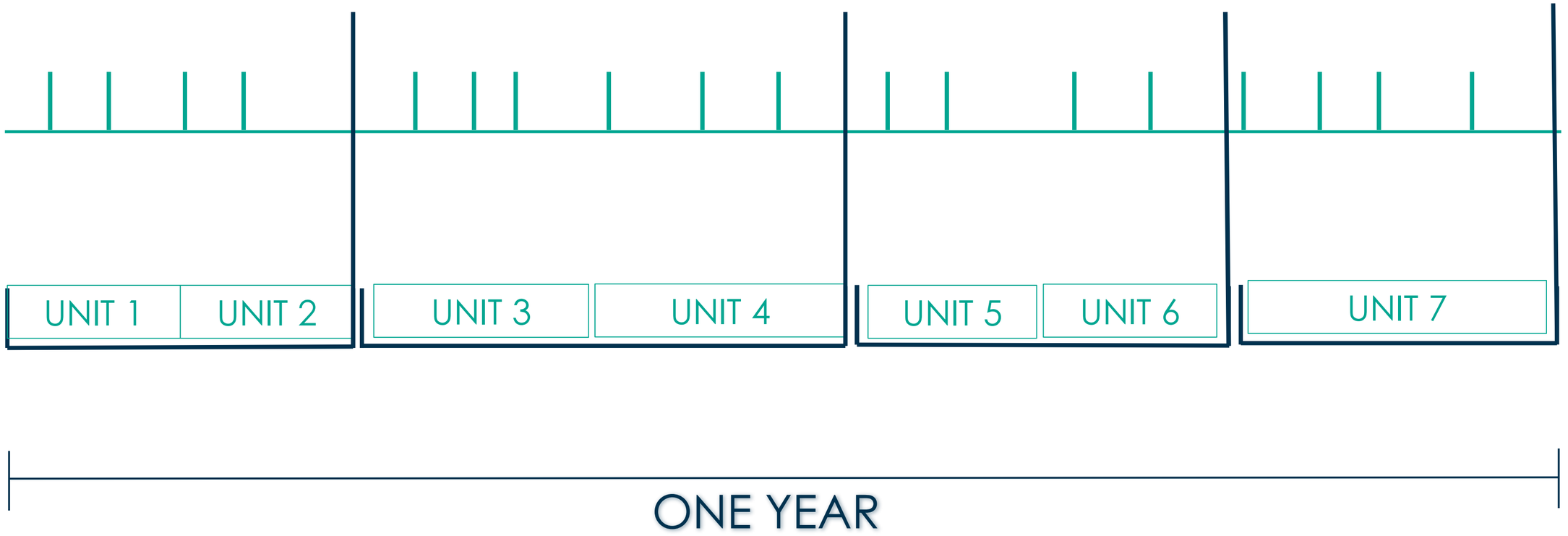


Long-cycle assessment involves cycle lengths of four weeks or more—typically **six to ten weeks**.

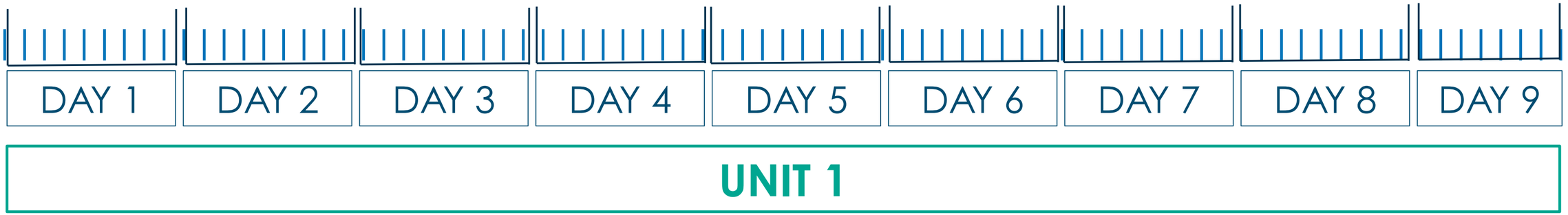


Wiliam, Fisher, & Frey, 202

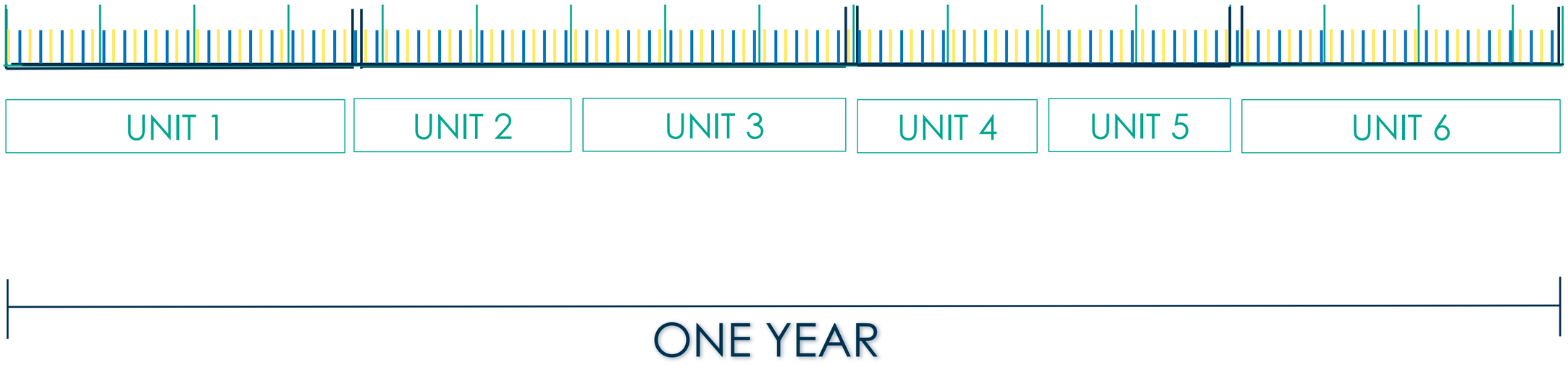
Medium-cycle assessment typically occurs **within** an instructional unit.



Short-cycle assessment occurs **within and between lessons,** every **six to ten minutes**



The **goal** of assessment is that we are constantly **using evidence to inform instruction.**



Assessment Inventory

Short-Cycle	Medium-Cycle	Long-Cycle
	bit.ly/Rigor_Inventory	

Evidence: *What are we noticing about how the student learns, engages, and makes meaning?*

Success: *What does it mean to be successful?*

Input

Tasks

Responses

Incremental Success Criteria provide a ladder for students.

Illustration by Hammam Fuad حمّام on Unsplash

Success Criteria

- I can explain the connection between diseases and mitochondrial issues
- I can identify a cell as prokaryotic or eukaryotic
- I can identify a cell as plant, animal or bacteria
- I can describe the functions of cell structures

Evidence: *What are we noticing about how the student learns, engages, and makes meaning?*

Success: *What does it mean to be successful?*

Input: What instruction honors strengths while supporting growth?

Tasks

Responses

Input

Show it.
Model it.
Make it clear.

Input Options
MICROLEARNING

- Direct instruction
- Worked Examples
- Exemplars
- Modeling and Think-Alouds
- Read/Write-aloud
- Interactive writing
- Lectures
- Demonstrations

Gilbert et al., 2026

Input Options

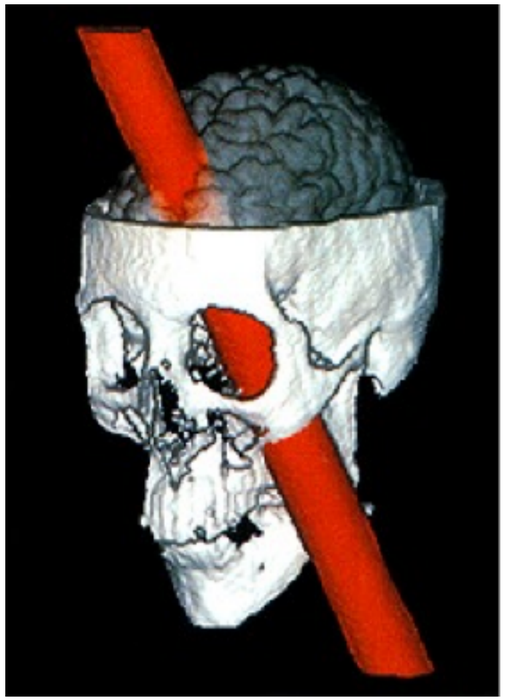
- Direct instruction
- Worked Examples/exemplars
- Modeling and Think-Alouds
- Read/Write-aloud
- Shared reading/writing
- Interactive writing
- Lectures
- Demonstrations

What Happened to Phineas?

Attend the tale of Phineas Gage. Honest, well liked by friends and fellow workers on the Rutland and Burlington Railroads, Gage was a young man of exemplary character and promise until one day in September 1848. While tamping down the blasting powder for a dynamite charge, Gage inadvertently sparked an explosion. The inch thick tamping rod rocketed through his cheek, obliterating his left eye, on its way through his brain and out the top of his skull.

Discover Magazine

The rod landed several yards away, and Gage fell back in a convulsive heap. Yet a moment later he stood up and spoke. His fellow workers watched, aghast, then drove him by oxcart to a hotel where a local doctor, one John Harlow, dressed his wounds. As Harlow stuck his index fingers in the holes in Gage's face and head until their tips met, the young man inquired when he would be able to return to work.



Discover Magazine

Within two months the physical organism that was Phineas Gage had completely recovered - he could walk, speak, and demonstrate normal awareness of his surroundings. But the character of the man did not survive the tamping rod's journey through his brain. In place of the diligent, dependable worker stood a foul-mouthed and ill-mannered liar given to extravagant schemes that were never followed through. "Gage," said his friends, "was no longer Gage."

Discover Magazine

Questions

- How did Phineas survive this penetrating brain injury?
- For how much longer did he live?
- What was the quality of his life?

CALIFORNIA & THE WEST

'Miracle Man' survives fall on drill bit

ASSOCIATED PRESS

TRUCKEE — Ron Hunt's friends and family have been calling him the "Miracle Man" ever since an 18-inch drill bit poked through his eye and out the back of his skull.

"It didn't seem possible for him to be alive, seeing him with a drill bit through his head," his nephew Ben Hunt said.

The Truckee construction worker lost an eye but survived the freak accident Aug. 15 with no brain damage after falling from a ladder and onto the drill.

"It is a miracle, it seems like for sure," Ron Hunt told ABC News' "Good Morning America" yesterday.

The 1.5-inch-diameter chip auger was in his head when his brother, Chris Hunt, and nephew Ben met him in a hospital emergency room in nearby Reno, Nev.

"The nurses braced us for it before we saw him," Ben Hunt told the *Sierra Sun* newspaper of Truckee. "It didn't seem real — it seemed like a movie. I wasn't sure what to feel."

Doctors explained the drill bit pushed his brain aside rather than pushing into it, which likely would have caused serious brain damage or death, Ben Hunt said.

Truckee Fire Chief Mike Terwilliger said it was the most bizarre accident he's seen in his 32 years as a firefighter.

While drilling above his head on Aug. 15, the six-foot ladder Ron Hunt was standing on started to wobble so he tossed the drill aside — as construction workers are trained to do. He then fell off the ladder face-first and onto the drill.

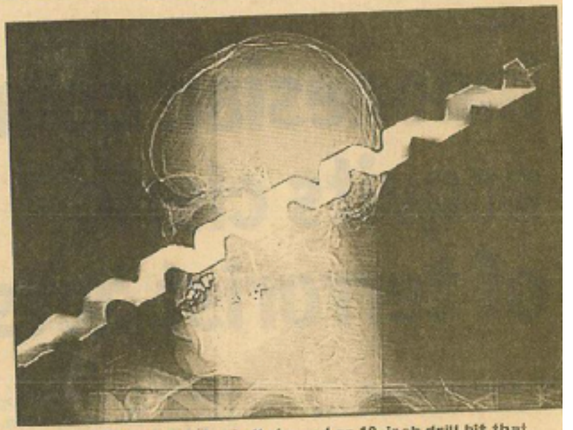
"By the time I was falling, and I let the drill go down, I was already on top of it," Ron Hunt said on the television morning show.

"I ran my hands up the drill bit, up to my eye, and put my other hand in the back of my head and felt it coming through the back of my head," he said. "And that's where pretty much the shock set in."

He was taken by helicopter to Washoe Medical Center in Reno.

His nephew thinks he'll be able to laugh about it some day.

"It's just going to be one of those stories," Ben Hunt told the *Sun*. "He'll joke around with his glass eye and pop it out."

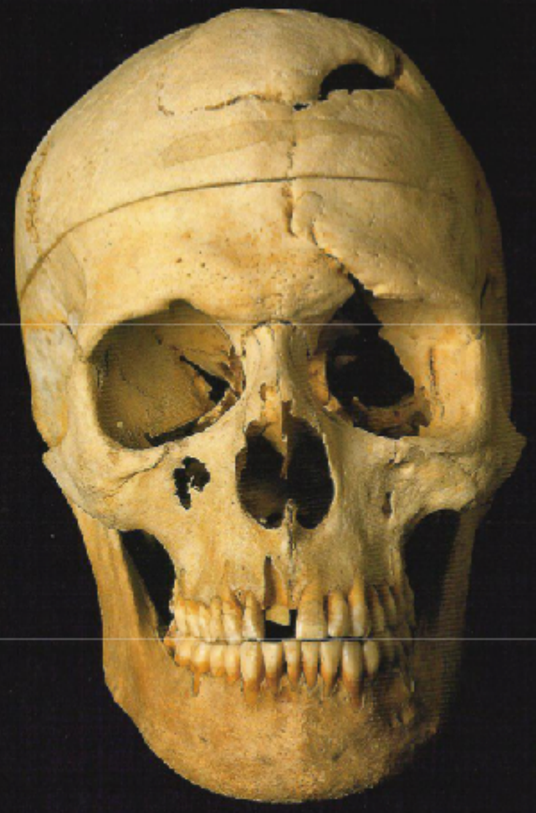


The X-ray of Ron Hunt's skull showed an 18-inch drill bit that pierced his eye socket and went through his head, just nudging his brain. *Ron Hunt / Associated Press*

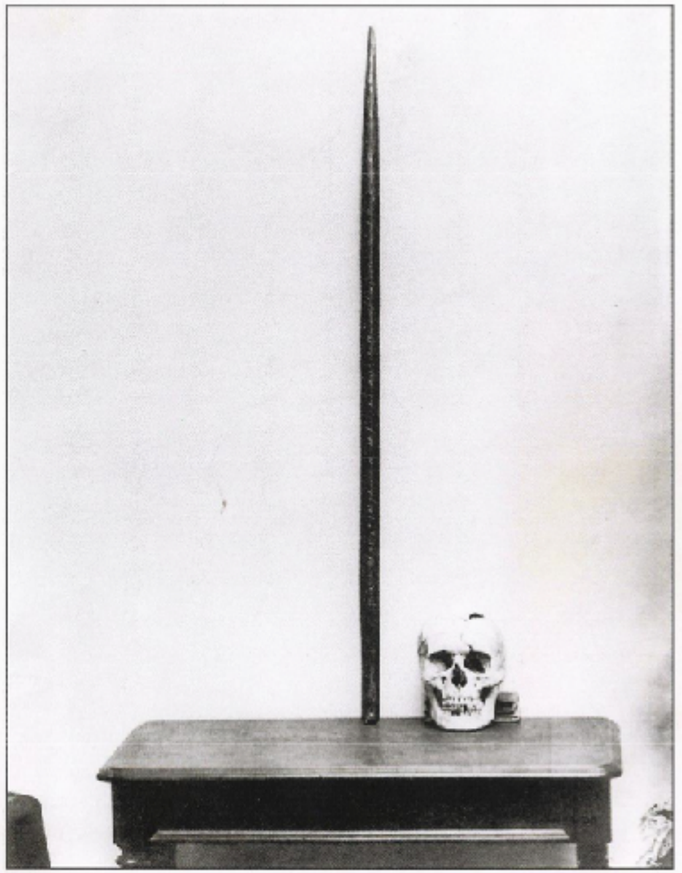
A dentist found the source of the toothache Patrick Lawler was complaining about on the roof of his mouth: a four-inch nail the construction worker had unknowingly embedded in his skull six days earlier.

PHINEAS GAGE

A Gruesome but True Story About Brain Science



by JOHN FLEISCHMAN



Evidence: *What are we noticing about how the student learns, engages, and makes meaning?*

Success: *What does it mean to be successful?*

Input: *What instruction honors strengths while supporting growth?*

Tasks: *What do students need to do to generate evidence?*

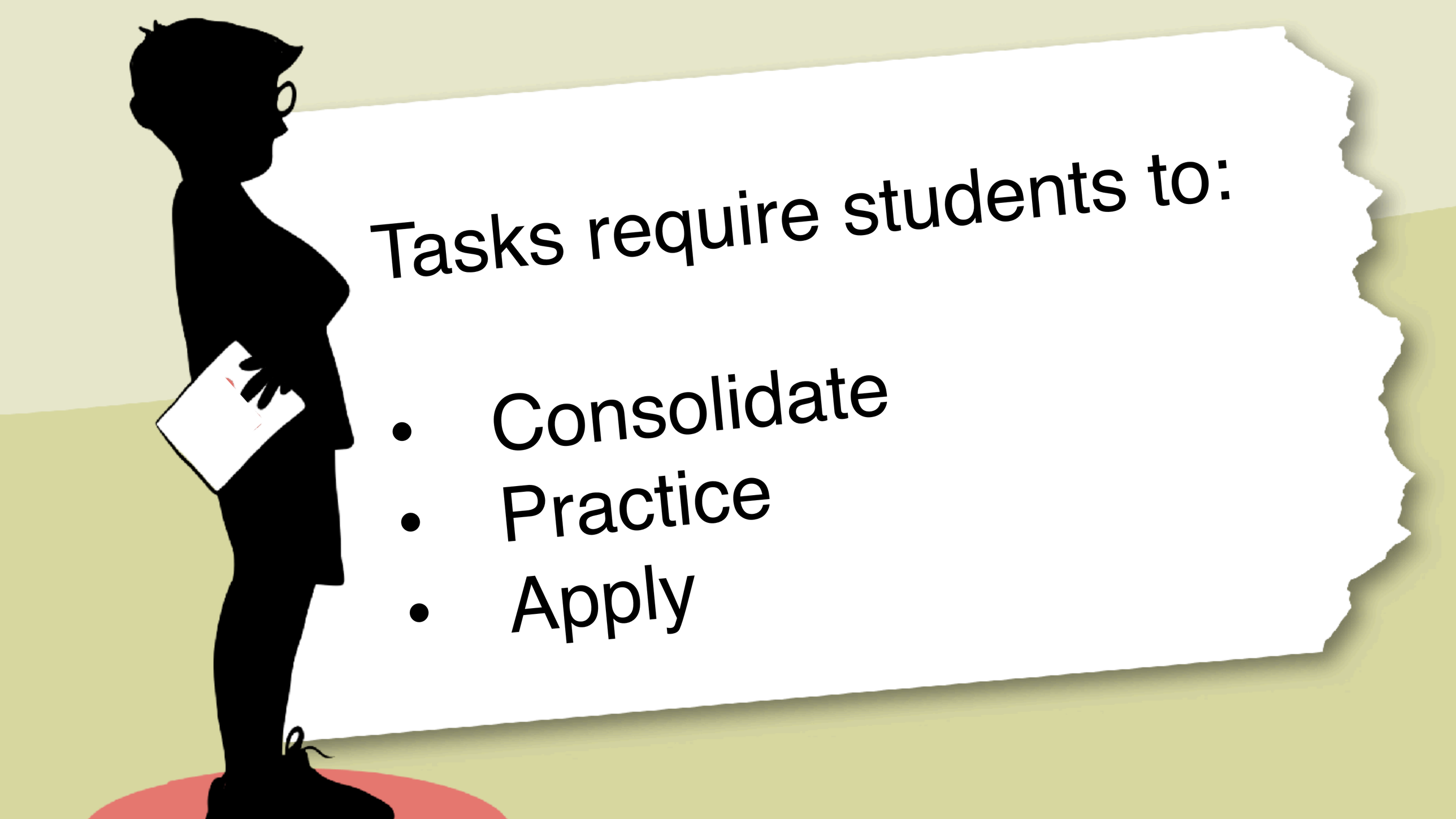
Responses

Tasks exist **to produce evidence**, not to fill time.

Poor tasks lead to misleading data.

If the task can’t generate the evidence you need, the task is the problem.

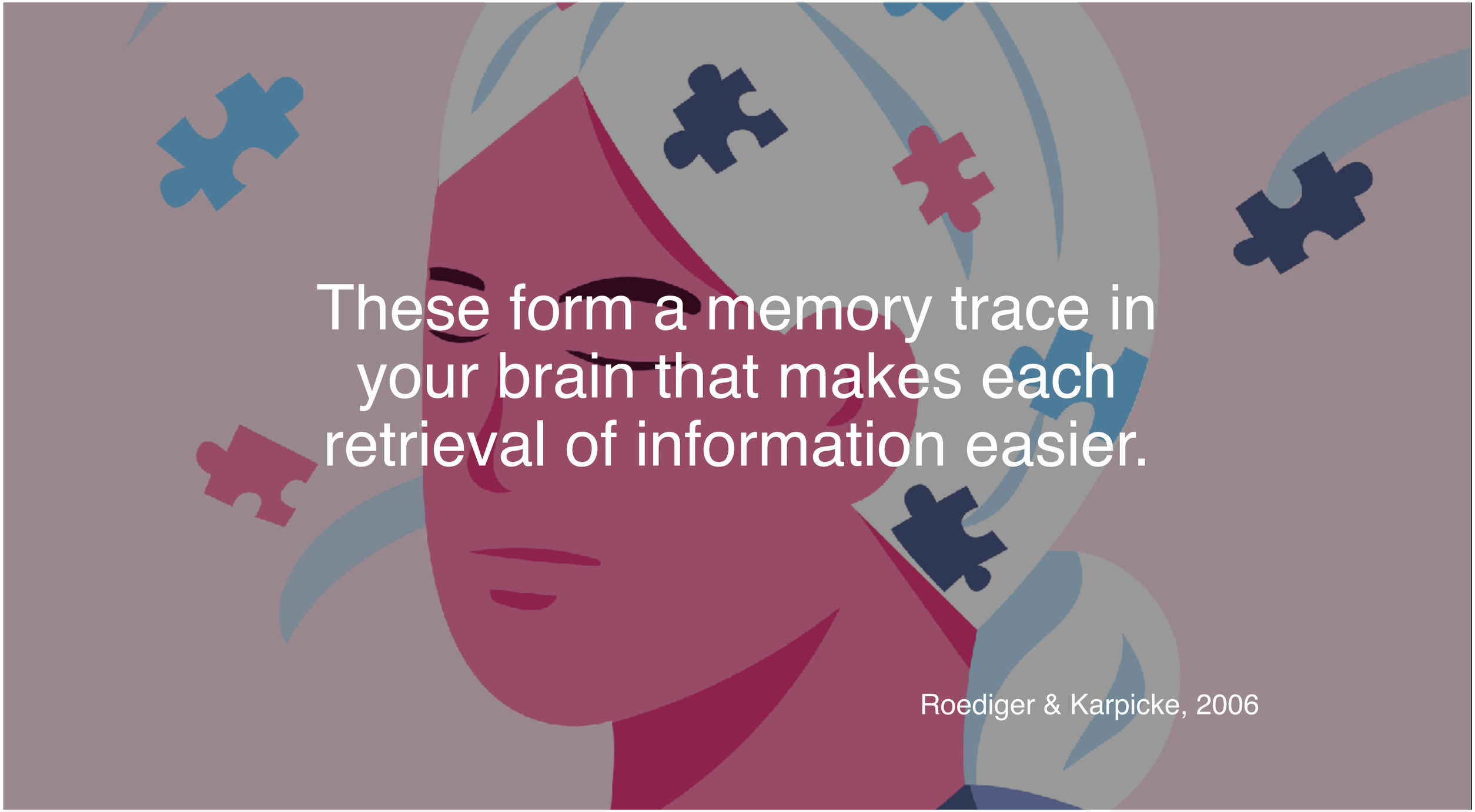
Is the task worth the time required?


Tasks require students to:
• Consolidate
• Practice
• Apply

Responses

Show what you know.

Rehearsal and **retrieval** are key to making learning permanent.


These form a memory trace in your brain that makes each retrieval of information easier.
Roediger & Karpicke, 2006


Thank you!