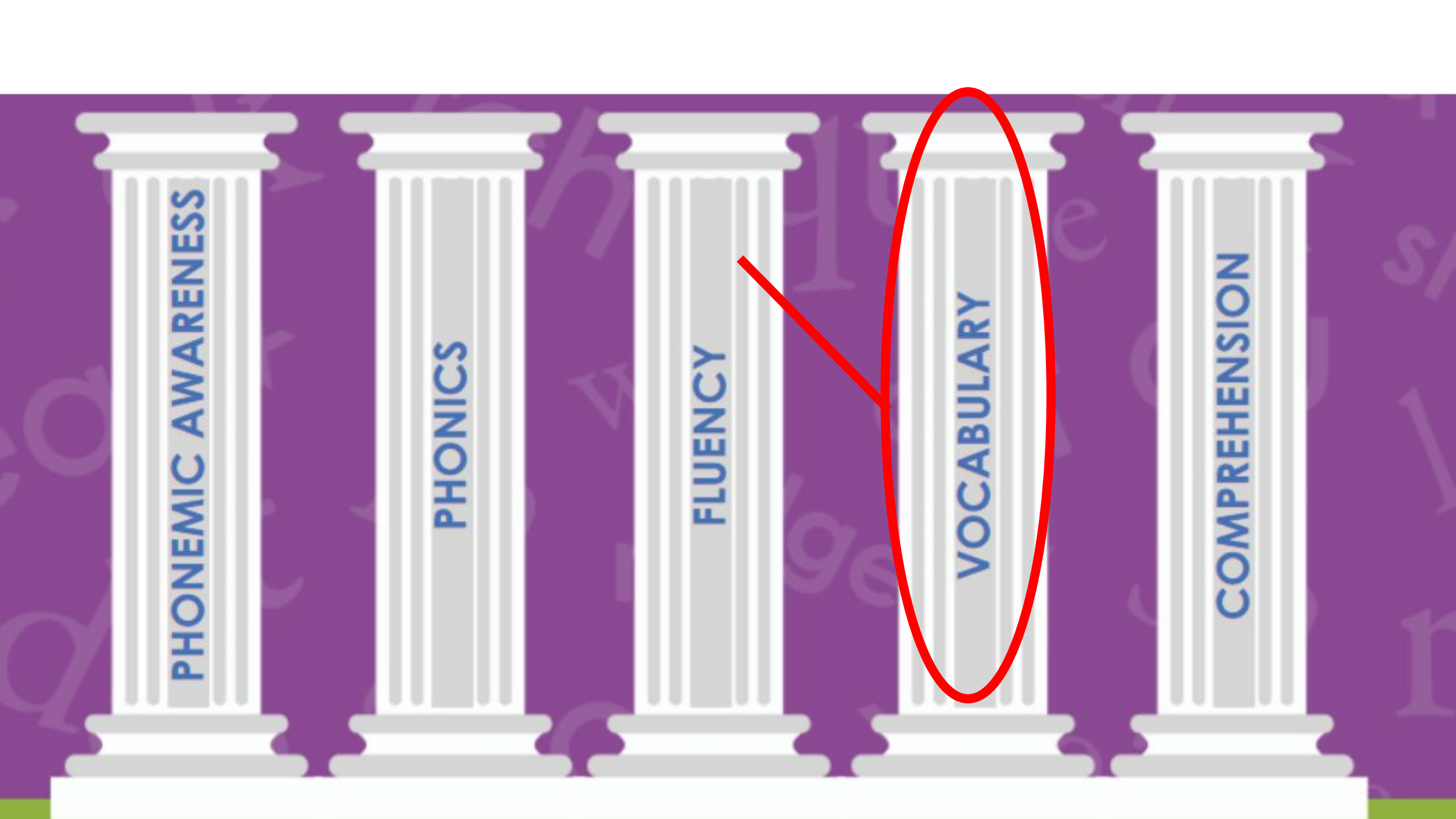


Growing Students' Vocabulary and Comprehension of Complex Text: Support for Teachers From AI

Elfrieda (Freddy) H. Hiebert
TextProject



PHONEMIC AWARENESS

PHONICS

FLUENCY

VOCABULARY

COMPREHENSION

Oxford Unabridged Dictionary

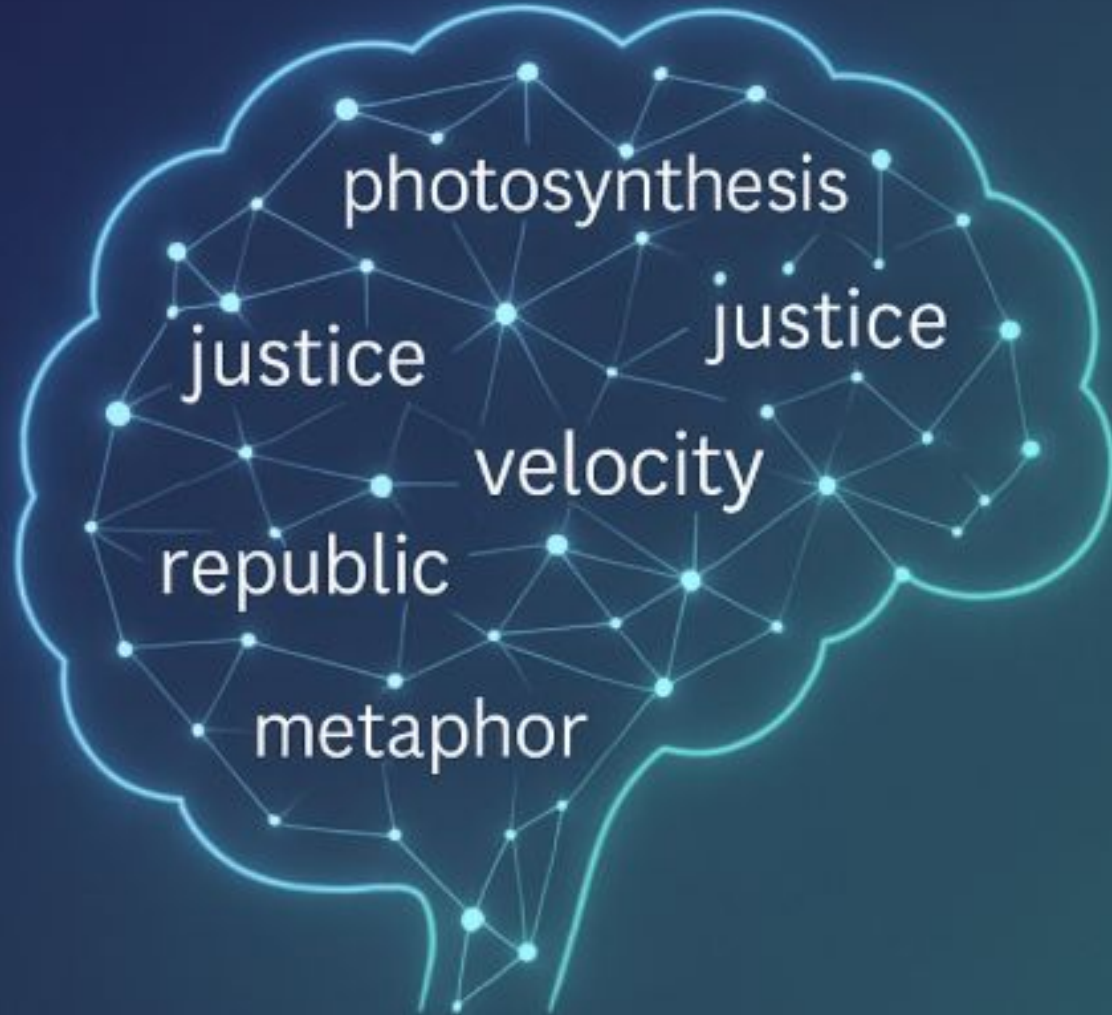
•282,500
root or head
words

•326,000
derivatives
& phrases

•47,150
obsolete
words

And this doesn't include the
multiple meanings of words.

Why Large Language Models Matter for Vocabulary Instruction



- LLMs “read” billions of words. They show us which words are common, rare, and critical for academic success.
- They uncover how words work in context—not just their definitions, but how they connect to ideas and other words.
- LLMs help us focus instruction on words students are most likely to struggle with—and most need to succeed



1. What do analyses of millions of texts tell us about the vocabulary students face?

2. How can we support students' proficiency with critical vocabulary in specific texts and aid in their ability to generalize to other words and other texts?

3. How can we help students who need additional support become more fluent with vocabulary?



**1. What do analyses of millions of texts
tell us about the vocabulary students
encounter?**



%Total Words in School Texts

■ High ■ Medium ■ Low ■ Rare

100%

80%

60%

40%

20%

0%

Rare Words:
≈200,000+ Words

Low-Frequency:
≈3030 Word Families

Medium-Frequency:
≈1850 Word Families

High-Frequency:
≈620 Word Families

Word Distribution in School Texts



State Assessments: Word Distributions



Big Moon Tortillas (Gr. 3 Narrative)

The head of Marta Enos was filled with the knowing of fresh tortillas. Oh, that sweet, crisp, little bit burnt smell! It went to Marta's stomach, which rumbled and growled, and then on down to her feet, making her toes twitch towards the cookhouse.

The legs of Marta Enos would not wait another minute. They were in such a hurry to run to the cookhouse that they knocked over Marta's table, and that is when a disaster happened.

The homework papers with their neat writing and beautiful drawings went out the window onto the breath of the fussing

Beatrix Looks at Lichens

(Gr. 6 Narrative)

At first glance, lichen on a tree looks like a gray green, mossy stain. But a peek under the microscope reveals something extraordinary. It's not one living thing, but two—a partnership of very different life forms.

Lichens may look like plants, but they're not even half plant. Every lichen is a tiny team made up of a fungus and some algae or bacteria. Back in the 1880s, most people did not believe the German scientist who first suggested this. But one person who did agree was Beatrix Potter, the writer and artist who created Peter Rabbit.

The Good Earth (Gr.10 Narrative)

The New Year approached and in every house in the village there were preparations. Wang Lung went into the town to the candlemaker's shop and he bought squares of red paper on which were brushed in gilt ink the letter for happiness and some with the letter for riches, and these squares he pasted upon his farm utensils to bring him luck in the new year. Upon his plow and upon the ox's yoke and upon the two buckets in which he carried his fertilizer and his water, upon each of these he pasted a square.

A Raccoon in its Den

(Gr. 3 Informational)

Raccoons are one of the best-known animals in the United States. This is because they live in almost every part of the country. Raccoons are easy to spot. They look like they are wearing black face masks and have bushy tails with black stripes. However, many people may have never seen a raccoon in person. This is because raccoons tend to come out at night.

Flexible Fingers: Raccoons have round bodies that are covered in thick brown or gray fur. They have black masks on their faces and black rings on their tails. They have four black paws. Raccoon paws have five fingers, just like a person's hands do.

Life in the Salt Marshes (Grade 6 Informational)

If it weren't for geese and other birds, the New Jersey salt marsh would seem almost dead in winter. Much of the other marsh life has either gone elsewhere or is hiding. Fiddler crabs winter in burrows beneath the mud. Mummichogs, small marsh dwelling fish, move into salt marsh pools and hide in the mud during the coldest weather. Blue crabs move into deeper water and become inactive, burrowing into the mud and sand for the winter.

Have you ever been to a salt marsh? If you have visited a beach on the East Coast or Gulf Coast of the United States, you

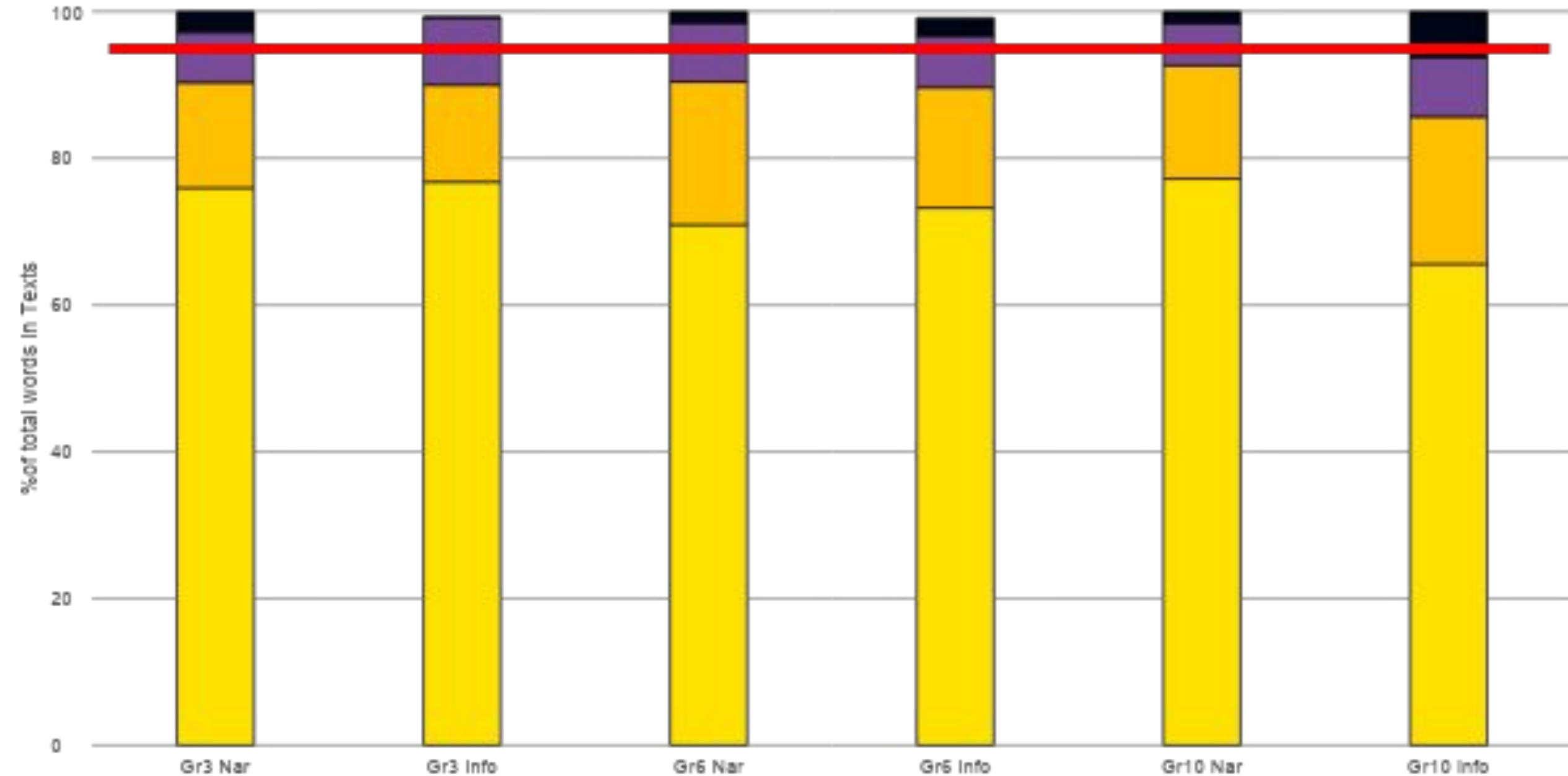
Tattoo Regulations

(Grade 10 Informational)

Tattoo artists in Europe are fighting a new ban on two commonly used green and blue pigments, saying that losing these ink ingredients would be a disaster for their industry and their art. Meanwhile, in the United States, where about a third of Americans have a tattoo, tattoo ink is almost completely unregulated and there's little known about what's in tattoo ink. For years, individual countries in Europe have required labeling of tattoo ink ingredients and have limited certain chemicals that are thought to cause cancer, damage DNA, or trigger allergic reactions.

Now the European Union [E.U.] is harmonizing tattoo ink rules across the continent.

Summary of State Assessment Texts



Numbers and Types of Complex Words

	Gr3	Gr6	Gr10
Narrative	Marta, Enos, crisp, rumbled, growled, twitch, cookhouse, fussing	Beatrix, fungus, partnership, lichen, stain, peek	Wang, candlemaker's, gilt, pasted, utensils, ox's, yoke, fertilizer
Expository	raccoon, den, paws, stripes	Marshes, Fiddler, crabs Mummichogs, dwelling, burrowing	Tattoo, regulations, pigments, ingredients, ban DNA, trigger allergic [E.U.], harmonizing

**1. What do analyses
of millions of texts
tell us about the
vocabulary students
encounter?**

Answers?



2. How can we support students' proficiency with critical vocabulary in specific texts and aid in their ability to generalize to other words and other texts?

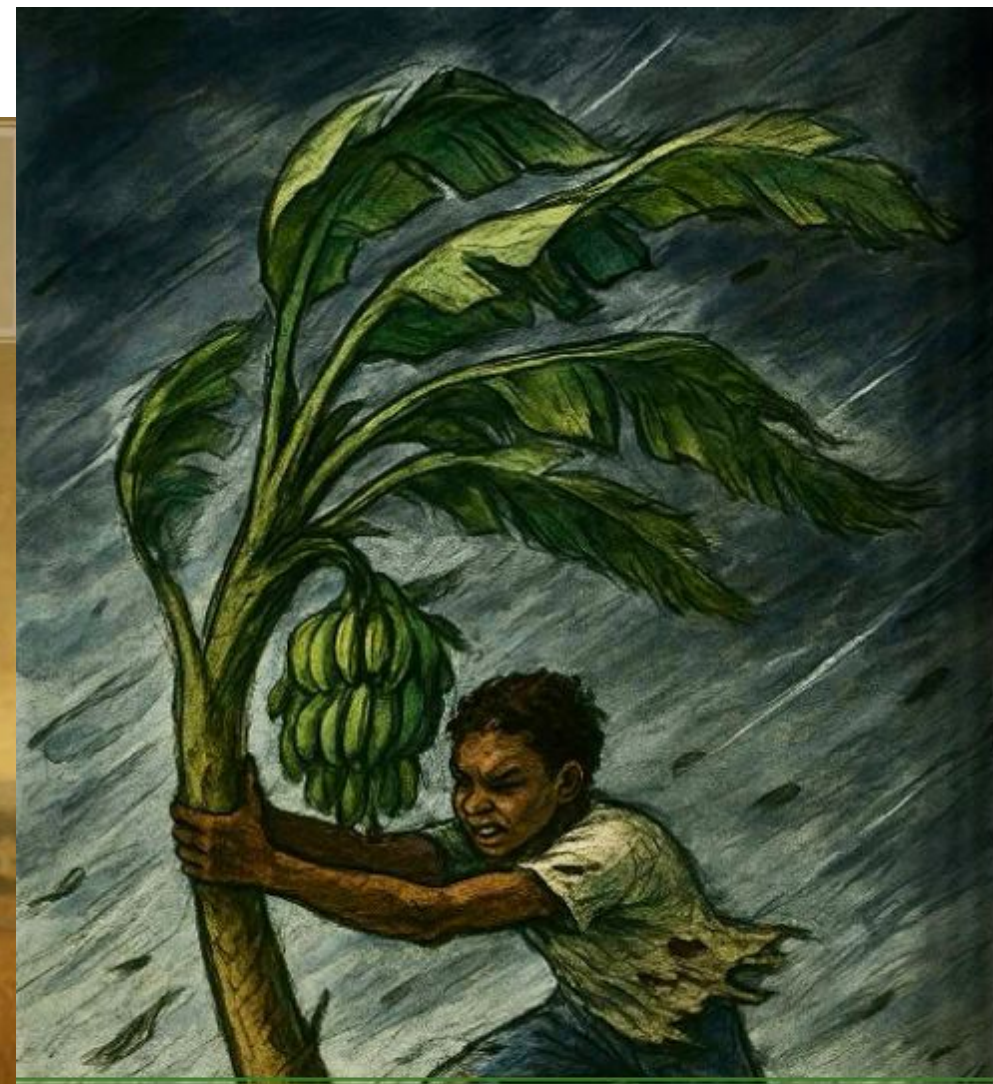
Friends Forever

Two childhood best friends, Mirabel and the narrator, gradually grow apart in middle school as they pursue different activities and make new friends, eventually peacefully accepting that some friendships simply aren't meant to last forever.



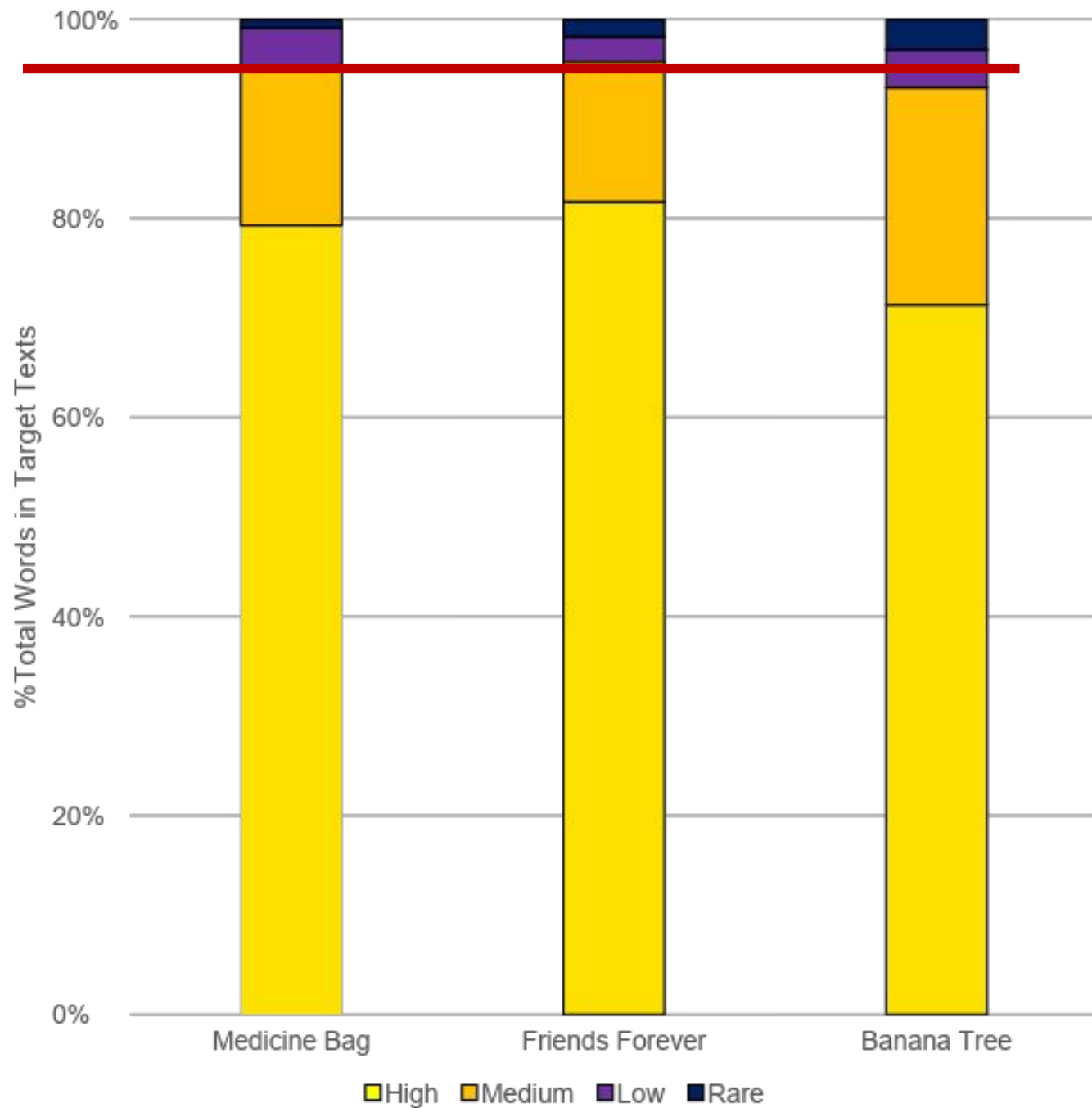
THE MEDICINE BAG

Teenage Martin is embarrassed when his elderly Sioux great-grandfather visits but learns to appreciate his heritage. Before dying, Grandpa passes the sacred family medicine bag to Martin, continuing an important cultural tradition across generations.



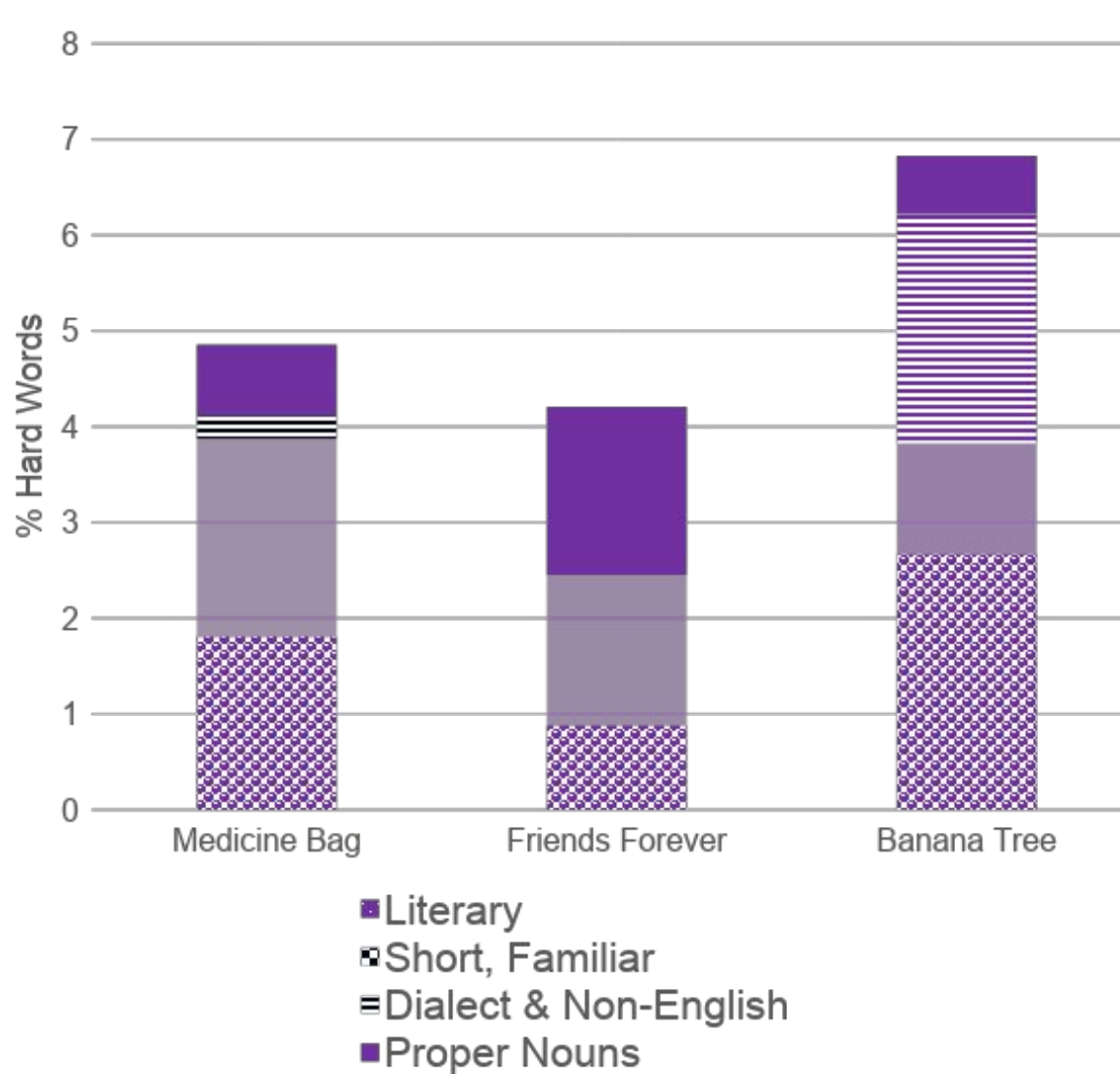
THE BANANA TREE

During a hurricane in Jamaica, young Gustus risks his life to save his beloved banana tree, which he hoped to harvest and sell for shoes. He's injured but survives, and his father finally understands his son's dreams.



Word Distribution in Target Texts

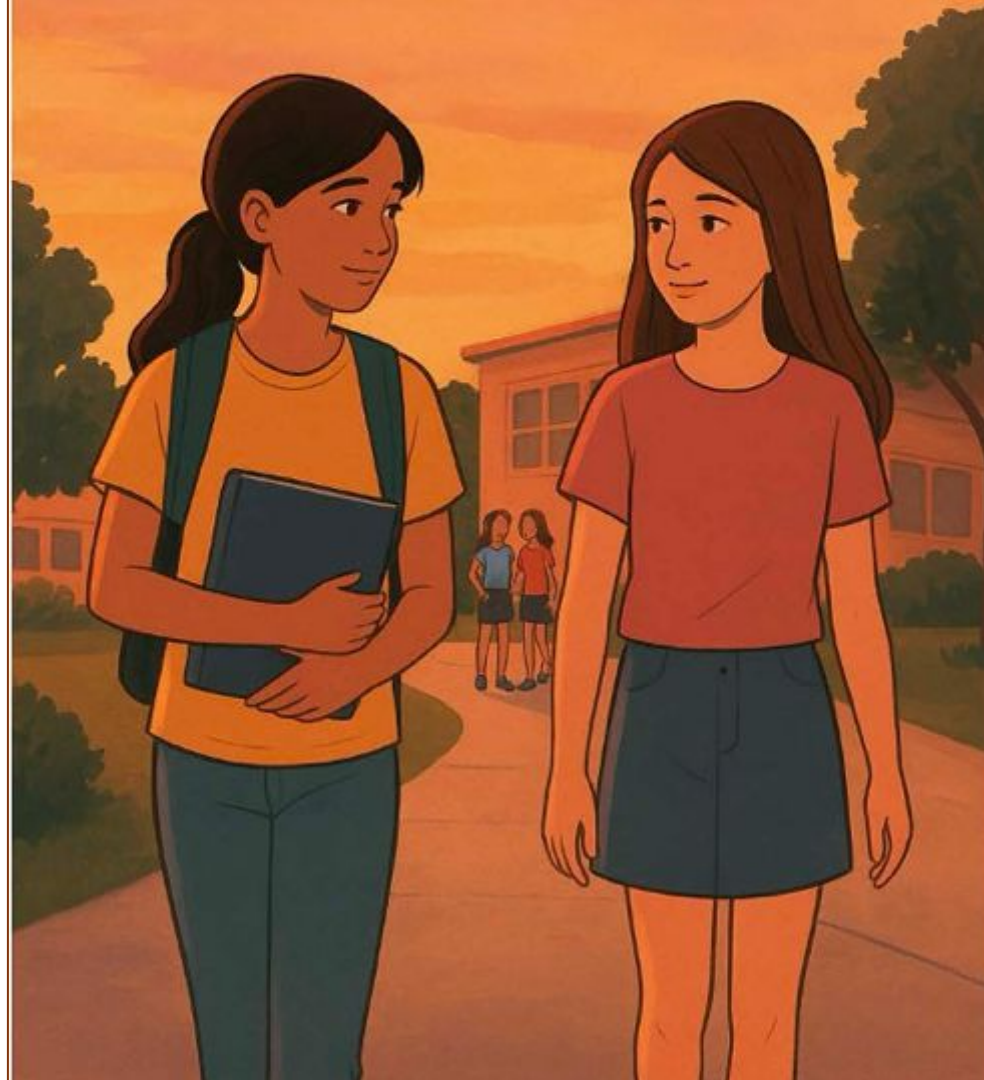
The “Purple” Vocabulary

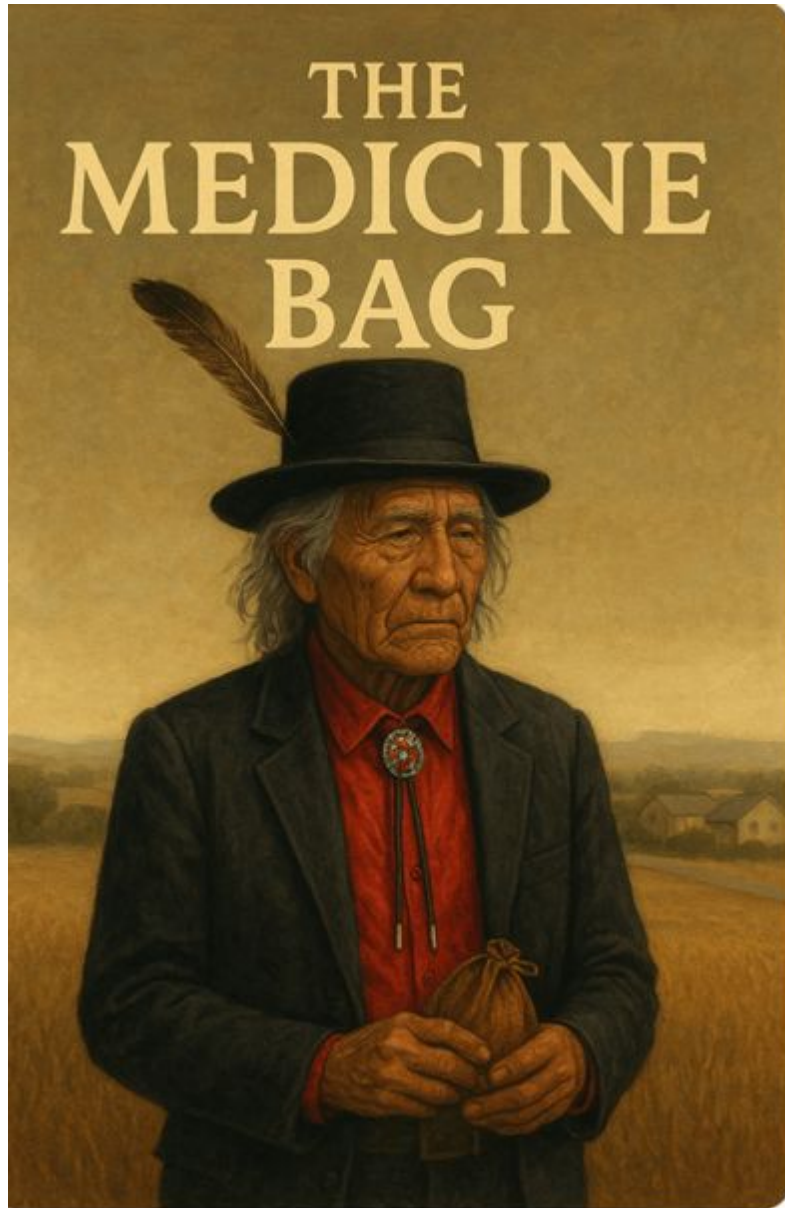


	Medicine	Friends	Banana
Proper nouns	Sioux Dakota	Mirabel Priya	Canerise Imogene
Dialect/ Other Languages	Hau Takoza		I sure somet'ing bodder you
Short, Familiar	sips mutts	gym panda	hugged humming
Literary & background knowledge	procession fatigue	patronizingly rehearsals	lacerated writhed

Friends Forever

Two childhood best friends, Mirabel and the narrator, gradually grow apart in middle school as they pursue different activities and make new friends, eventually peacefully accepting that some friendships simply aren't meant to last forever.





The Medicine Bag - Background Knowledge

Forced Cultural Change

Reservations

Government Boarding Schools

The Teton Sioux

Sioux Language

Traditional Practices

Vision Quest

Sweat Lodge Ceremonies

Medicine Bag

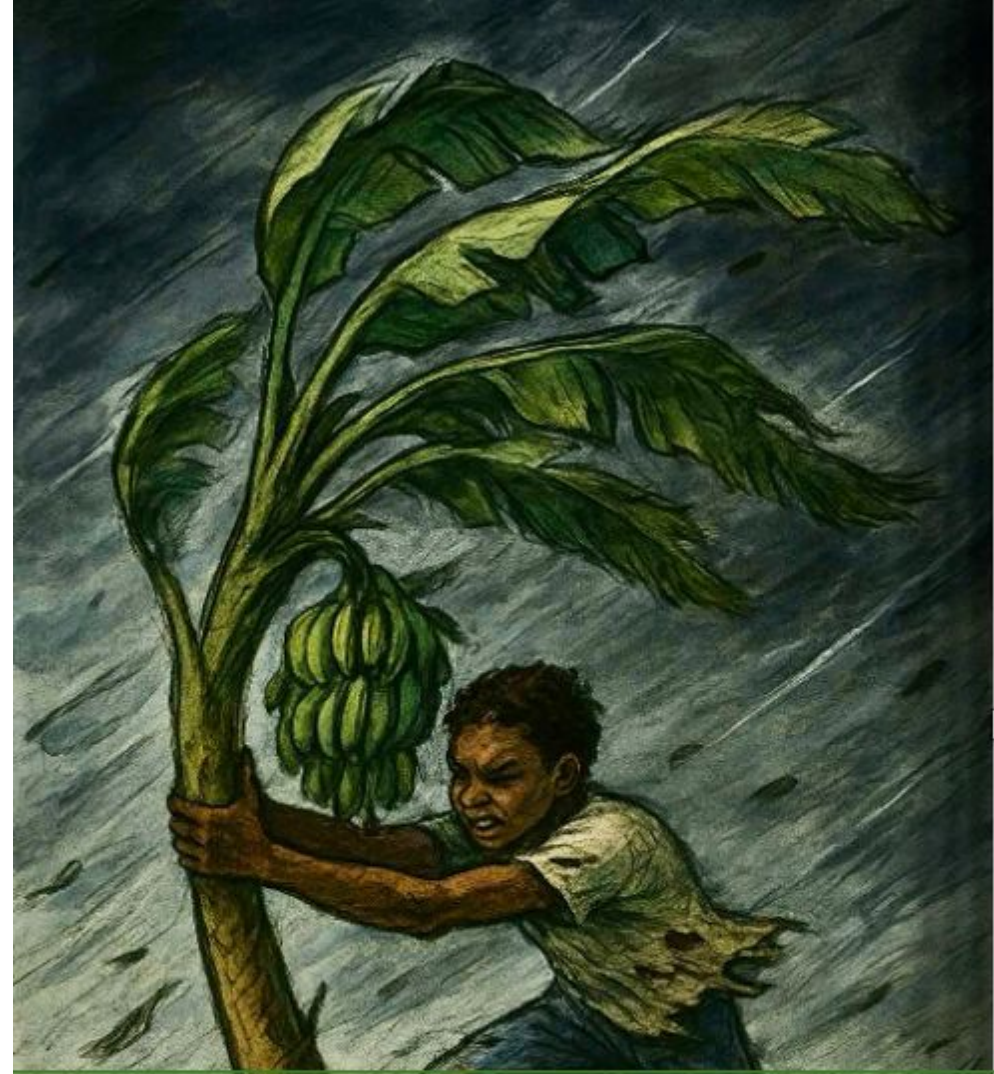
Sacred Sage

Blacksmith (Iron)

Working with iron as
medicine/protection

Connection to vision quest

- Two groups of words:
- Dialect
- Literary words



THE BANANA TREE

During a hurricane in Jamaica, young Gustus risks his life to save his beloved banana tree, which he hoped to harvest and sell for shoes. He's injured but survives, and his father finally understands his son's dreams.

FH These are words that fall into the category of dialect in The Banana Tree. Can you classify these words into the key features of the dialect?

Jamaican Patois Dialect Patterns

How James Berry represents Jamaican Creole in "The Banana Tree"

Dialect Features

Consonant Dropping

FINAL 'G' DROPPED:

somet'ing anything t'ing t'ings nothin feedin
tellin savin harborin spat'ing

OTHER FINAL CONSONANTS DROPPED:

groun ol almos depen befo hol spen han

'R' DROPPED OR REDUCED:

rememba memba ere

'th' → 'd' Sound Change

mudder bodder wid das

Contractions

couldn didn dohn needly wha's

Extreme Shortening

fo gl mi mek wha

Vowel Changes

bwoy

Other Patterns

chil'run nable comfo'ts

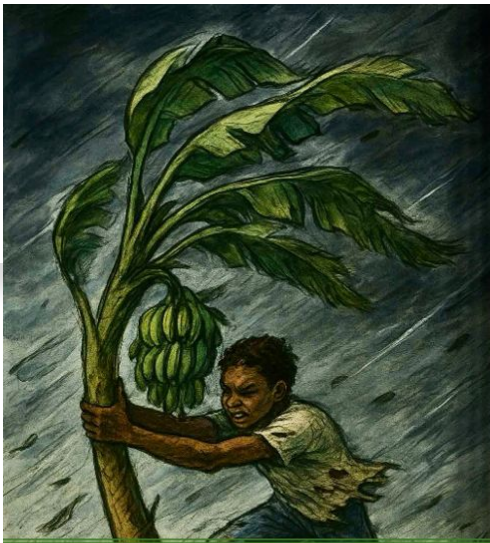
FH

Can you identify parallels between the conventions of Jamaican patois and texting used by teens currently?

What They Do	Jamaican Patois in "The Banana Tree"	Your Text Messages
1. Dropping Letters We Don't Need	somet'ingnothinfeedin (drops the 'g')	sthnthcomin (drops letters too)
2. Extreme Shortcuts	fo (for) gi (give) wha (what) mi (me)	4 (for) u (you) r (are) b (be)
3. Sound-It-Out Spelling	wid (with) mudder (mother) bwoy (boy)	luv (love) thru (through) nite (night)
4. Dropping Vowels	groun (ground) depen (depend)	pls (please) txt (text) msg (message)
5. Everybody Gets It	All Jamaican speakers understand the patterns—not random!	All your friends understand your texts—you follow rules!

FH

Can you generate a semantic map of the key clusters of literary words in The Banana Tree: 4 categories, each with 3 words: violent movement & physical collapse (writhed, paralyzed, collapsed); vocalizations & sounds (intoned, mocked, bleated); destruction & damage (lacerated, impeded, debris); emotional suffering (forlorn, futile, repressed).



THE BANANA TREE

During a hurricane in Jamaica, young Gustus risks his life to save his beloved banana tree, which he hoped to harvest and sell for shoes. He's injured but survives, and his father finally understands his son's dreams.

•Literary Words

The Banana Tree



Violent Movement & Physical Collapse

writhed

paralyzed

collapsed

Vocalizations & Sounds

intoned

mocked

bleated

Destruction & Damage

lacerated

impeded

debris

Emotional Suffering

forlorn

futile

repressed

FH Please make a semantic grid for the word writhed--7 words from the semantic family; include at least 2 to 3 words that students who aren't great or engaged readers at the seventh grade might know.

wiggled

squirmed

twisted

thrashed

writhed

convulsed

contorted

The Banana Tree



Violent Movement & Physical Collapse

writhed

paralyzed

collapsed

Vocalizations & Sounds

intoned

mocked

bleated

Destruction & Damage

lacerated

impeded

debris

Emotional Suffering

forlorn

futile

repressed

The Banana Tree



scratched

scraped

cut

gashed

lacerated

mangled

mutilated

Violent Movement & Physical Collapse

writhed

paralyzed

collapsed

Vocalizations & Sounds

intoned

mocked

bleated

Destruction & Damage

lacerated

impeded

debris

Emotional Suffering

forlorn

futile

repressed

The Banana Tree



Violent Movement & Physical Collapse

writhed

paralyzed

collapsed

Vocalizations & Sounds

intoned

mocked

bleated

Destruction & Damage

lacerated

impeded

debris

Emotional Suffering

forlorn

futile

repressed

said

spoke

recited

chanted

intoned

proclaimed

prophesied

The Banana Tree



Violent Movement & Physical Collapse

writhed

paralyzed

collapsed

Vocalizations & Sounds

intoned

mocked

bleated

Destruction & Damage

lacerated

impeded

debris

Emotional Suffering

forlorn

futile

repressed

sad

lonely

gloomy

dejected

forlorn

despondent

desolate



WORD VAULT

wiggled

scratched

said

sad

squirmed

scraped

spoke

lonely

twisted

cut

recited

gloomy

thrashed

gashed

chanted

dejected

writhed

lacerated

intoned

forlorn

convulsed

mangled

proclaimed

despondent

contorted

mutilated

prophesied

desolate

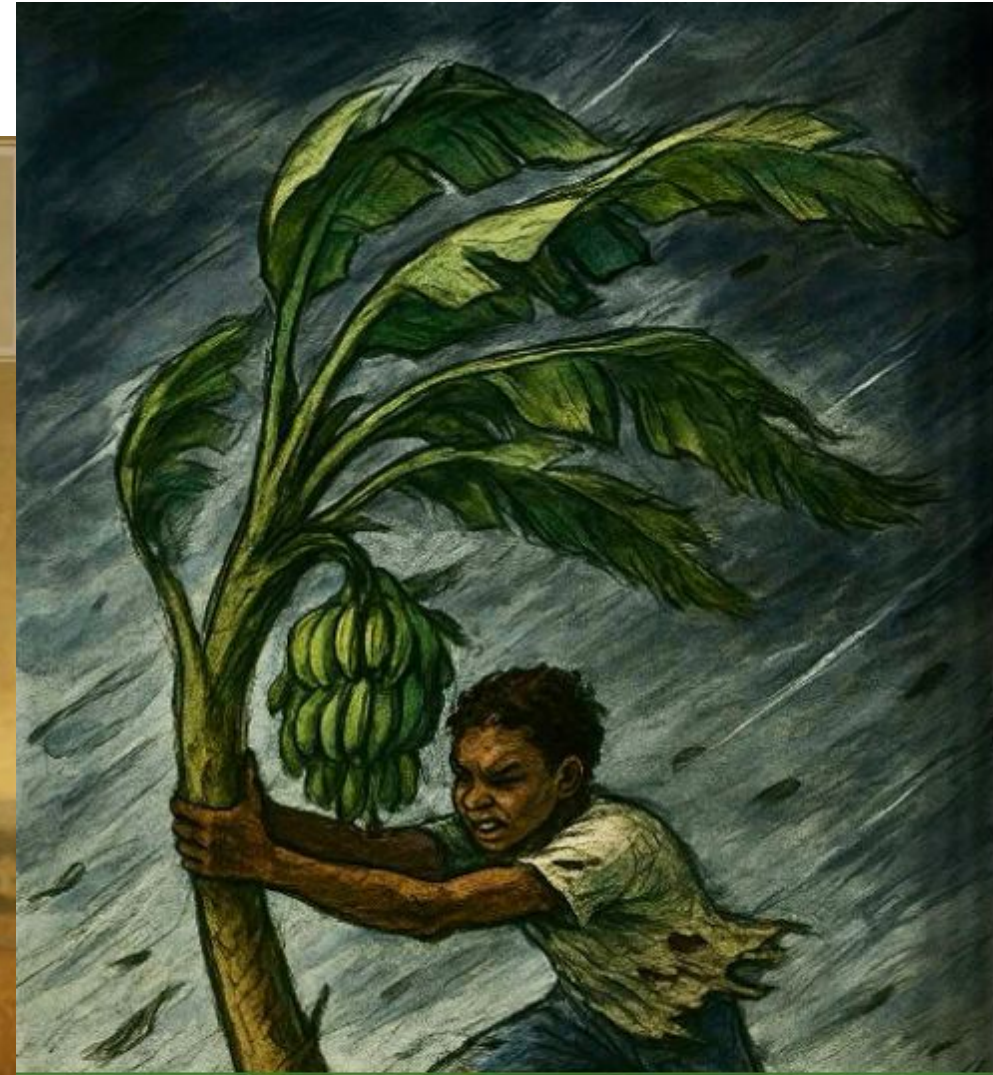
Friends Forever

Two childhood best friends, Mirabel and the narrator, gradually grow apart in middle school as they pursue different activities and make new friends, eventually peacefully accepting that some friendships simply aren't meant to last forever.



THE MEDICINE BAG

Teenage Martin is embarrassed when his elderly Sioux great-grandfather visits but learns to appreciate his heritage. Before dying, Grandpa passes the sacred family medicine bag to Martin, continuing an important cultural tradition across generations.



THE BANANA TREE

During a hurricane in Jamaica, young Gustus risks his life to save his beloved banana tree, which he hoped to harvest and sell for shoes. He's injured but survives, and his father finally understands his son's dreams.

Can you identify the three big themes shared across the three texts: Medicine Bag, Friends Forever, and Banana Tree?

Shared Themes Across Three Stories

COMING OF AGE & MATURITY

The Medicine Bag

Martin moves from embarrassment to pride in his heritage

The Banana Tree

Gustus shows determination and sacrifice for his goals

Friends Forever

Narrator accepts that change and growth are natural

CHANGING RELATIONSHIPS

The Medicine Bag

Connection with Grandpa evolves from shame to respect

The Banana Tree

Father finally sees and values what matters to his son

Friends Forever

Friendship fades as friends grow in different directions

UNDERSTANDING IDENTITY & VALUES

The Medicine Bag

Cultural heritage becomes more important than peer approval

The Banana Tree

Banana tree represents independence and self-worth

Friends Forever

Personal growth can mean outgrowing relationships

FH Please create a mind map of the key words associated with the second theme: Changing Relationships. You do not need to link the words to specific stories but rather identify words that are critical to understanding this theme across the three stories.

CHANGING RELATIONSHIPS

Words that describe how connections with others evolve, grow stronger, or grow apart over time

Evolution

Distance

Connection

Separation

Understanding

Communication

Conflict

Reconciliation

Trust

Loyalty

Drift

Recognition

Respect

Priorities

Bonds

Tension

FH

Can you identify the words identified for Changing Relationships that appear in one or more of the texts? Please provide the sentence(s) in which the words appear.

RESPECT

- **The Medicine Bag:** "Because their respect for him bordered on fear, his presence quietened all immediately."
- **The Medicine Bag:** "I was so proud of him and amazed at how respectfully quiet my buddies were."

That appears to be the only word from the list of 16 words that explicitly appears in the text.

FH Can you provide the contexts for the 15 theme-critical words for Changing Relationships that were not explicitly stated in the texts. Please provide quotes from the texts with the name of the text.

List 2: Words Not Explicitly in Texts (with Inferred Meanings)

DRIFT

- **Friends Forever:** "Our friendship was slowly fading away" and "we had just slowly grown apart from each other."

DISTANCE

- **Friends Forever:** "She started spending more time with her volleyball friends, and less time with me."
- **The Medicine Bag:** "I stood on the curb, unable to move even though I wanted to run and hide" (emotional distance from Grandpa)

SEPARATION

- **Friends Forever:** "our only interaction was saying hello when we passed in the halls"

CONNECTION

- **The Banana Tree:** "After his birth the umbilical cord was dressed with castor oil and sprinkled with nutmeg and buried, with the banana tree planted over it for him" and "it's you nable strings feedin' you tree"
- **The Medicine Bag:** The medicine bag itself represents cultural and ancestral connection

I can't teach my middle schoolers all 15 of these words. Can you identify the 4 words that are most critical for comprehending the texts and building background knowledge that will extend beyond these texts?

1. CONFLICT

- **For these texts:** Students need to recognize internal conflict (Gustus hiding his feelings, Martin's shame vs. pride) and external conflict (hurricane, friendship drift)
- **Transferable:** Fundamental literary element they'll analyze in every text for years to come
- **Accessible:** Middle schoolers can identify and discuss conflict relatively easily

2. DISTANCE

- d text
- **For these texts:** Visible in "Friends Forever" (physical and emotional separation) and "The Medicine Bag" (Martin's embarrassment creates distance from Grandpa)
 - **Transferable:** Helps students understand relationship dynamics in literature and life
 - **Accessible:** Concrete concept students can observe and relate to their own experiences

3. PRIORITIES

- **For these texts:** Explains WHY relationships change—new activities, peer pressure, family obligations, material desires (shoes)
- **Transferable:** Key to analyzing character motivation in any narrative
- **Accessible:** Middle schoolers are experienced characters, priorities, and their own lives

4. CONNECTION

- **For these texts:** The foundation—what's shared in each story (family bonds, friendship, cultural heritage, traditions, or connections)
- **Transferable:** Essential for understanding themes of belonging, identity, and relationships across all literature
- **Accessible:** Students intuitively understand connection even if they haven't named it

FH

Please make a study sheet for the 4 concepts on the attached sheet. Put the word concepts (conflict, priorities, distance, and connection) at the top of the study sheet in lower-case. Then put the 8 excerpts in the attached sheet in a randomized order (including the book from which the excerpt comes). Put these directions: Match the vocabulary word with the excerpt from our target stories.

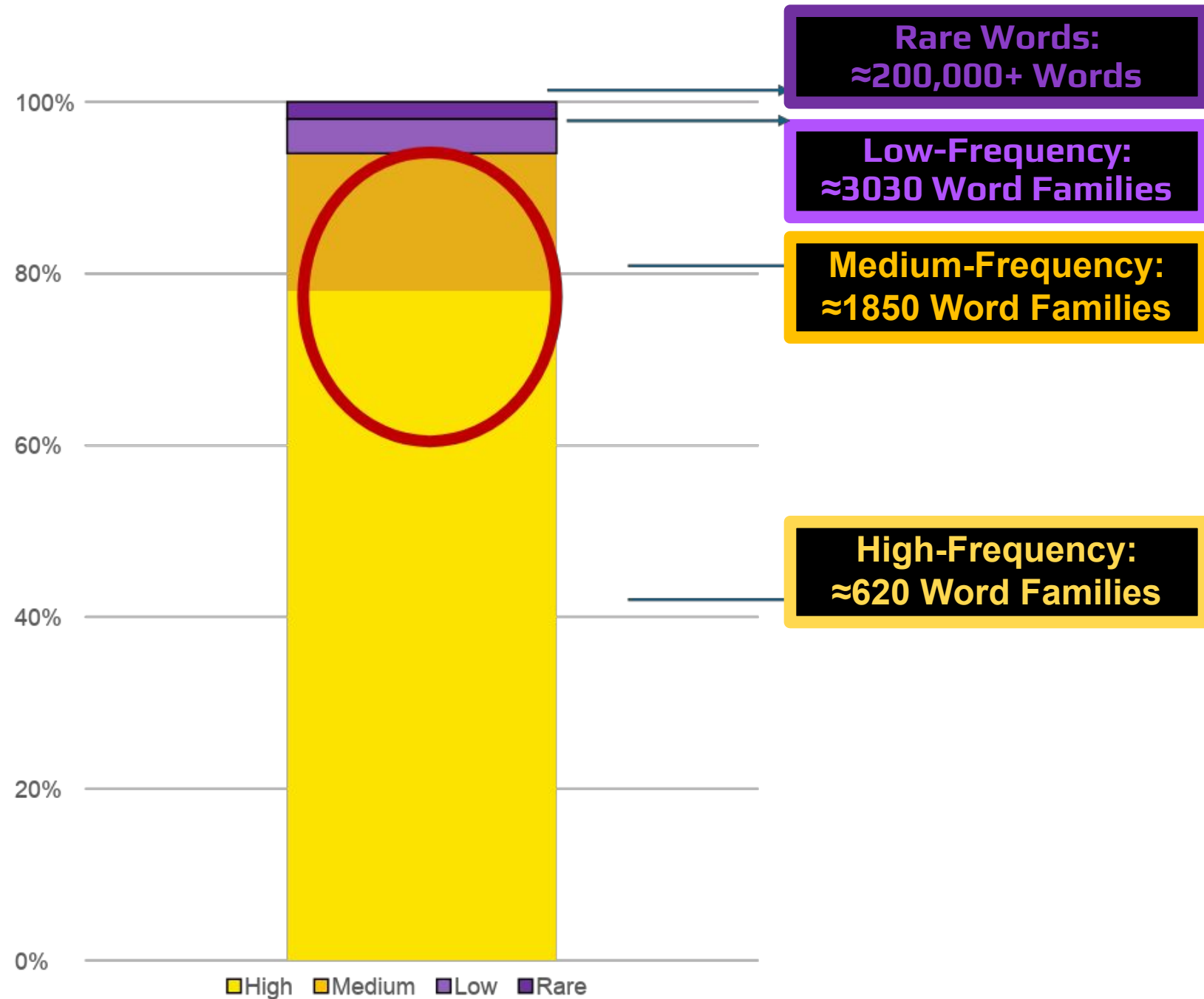
support students' proficiency with critical vocabulary in specific texts and aid in their ability to generalize to other words and other texts?

Answers?



3. How can we support capacity in foundational fluency?

- Text That Emphasizes the Core Vocabulary & Support Volume of Reading

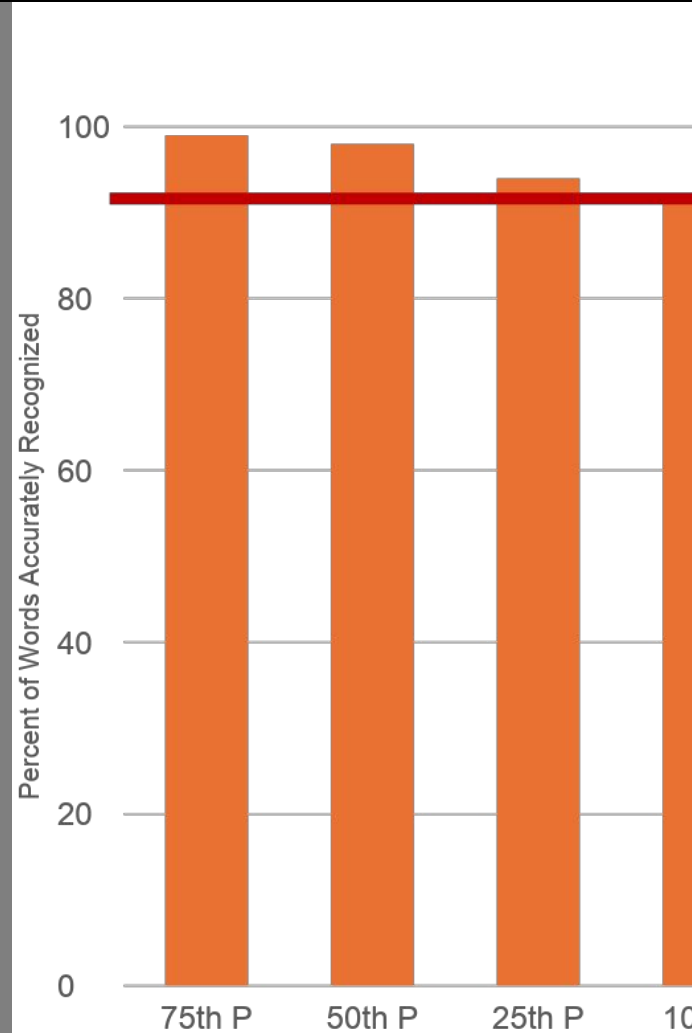


What can students read?

DIBELS (8th Grade): Spring Oral Reading Accuracy

Just a little over a century ago, the only way to enjoy music was to play it or listen to it in person. Then, with the discovery of radio waves and the invention of recording technology, people could enjoy music anytime. Today, digital recordings make enjoying music even easier and more portable than ever. However, the process of producing music has become more complex. Prior to the sale of the first compact disc, or CD, music was sold and listened to on wax cylinders, phonographs, vinyl records, or cassette tapes. Although most of these technologies are thought to be obsolete, you can still buy music in these formats.

Accuracy Percentages of Gr. 8



Grade 10—State Assessment

Tattoo artists in Europe are fighting a new ban on two commonly used green and blue pigments, saying that losing these ink ingredients would be a disaster for their industry and their art. Meanwhile, in the United States, where about a third of Americans have a tattoo, tattoo ink is almost completely unregulated and there's little known about what's in tattoo ink. For years, individual countries in Europe have required labeling of tattoo ink ingredients and have limited certain chemicals that are thought to cause cancer, damage DNA, or trigger allergic reactions. Now the European Union [E.U.] is harmonizing tattoo ink rules across the continent.

Open-Access Texts for Increasing Adolescents' Fluency, Vocabulary, and Background Knowledge

Coming Late
in 2025



STORYLAB

PRESENTS



TopicReads



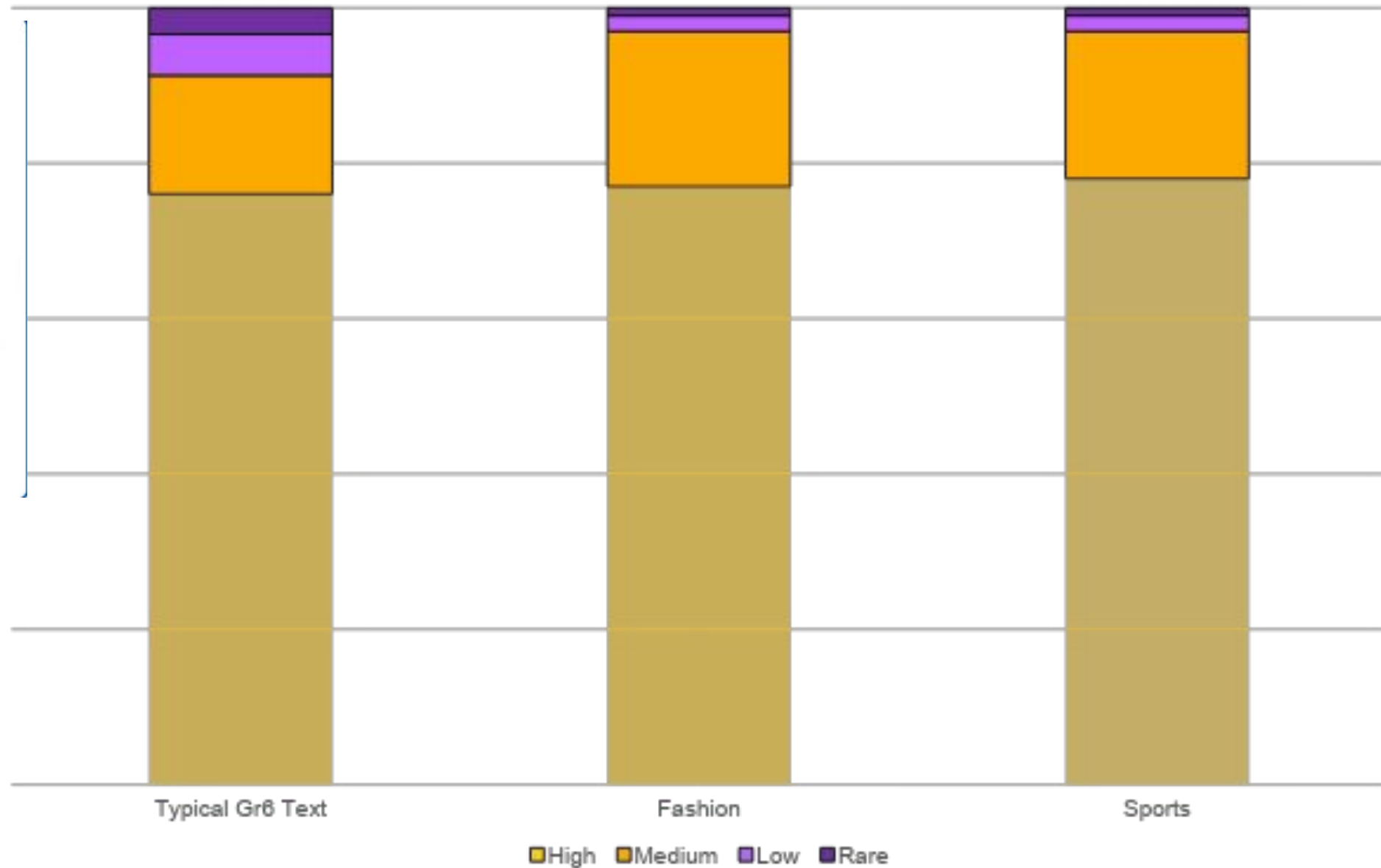
Background Builders



**READING
KICKSTART**

5 MINUTES A DAY

Open-Access Texts





The president of FUBU attends fashion and music shows.

For Us, By Us

In 1992, several childhood friends from New York City decided to start a clothing company. They were entrepreneurs—people who want to start a business. They wanted to design and sell clothing for people who wanted to look good in comfortable clothing. Their clothing line was called, “For Us, By Us” (FUBU). Today, FUBU helps set the style for hip-hop urban cool.

The first products the company made were hats. Then, it added shirts. The entrepreneurs continued hip-hop stars to wear FUBU clothing. They felt that big companies did not respect the urban market. FUBU understood that many people wanted to be part of that world, and the company’s clothing soon became popular.

At first, no big stores wanted FUBU’s clothes, but they sold well in small stores. Today, FUBU clothing is available in stores big and small all over the world.

Key Notes:

Why did FUBU choose that name for the company?



This fashion designer is sketching his designs.

The Fashion Designer

The figure in the fashion world that people hear about is the designer. People with this career decide the shape and look of clothing most of us wear.

First, a designer uses his or her imagination to come up with ideas for clothing designs. Ideas come from many places such as from the clothing of other countries and costumes in movies. Once the designer has an idea, he or she sketches the design for a piece of clothing.

The next step is for the designer to turn that sketch into the pattern from which the clothing can be made. Then, people whose career is sewing use the pattern to cut pieces of fabric and sew them into clothing. Finally, the clothing is ready to go to stores, where buyers finally see the result of the designer’s imagination.

Key Notes:

What does a fashion designer do?

Fashion



LEVEL D-12 • Written by Elfrieda H. Hiebert



Traditional styles and designs influence fashion.

4 Level D-12, Fashion

Where Fashion Comes From

Fashion designers get their ideas for new fashions from all over the world. In earlier centuries, for example, American designers copied the latest fashions from Paris. Today, designers find ideas in other countries like Japan.

One example of the worldwide trading of fashion ideas today is the influence of African style on designers from other parts of the world. Designers from around the world use African cloth in their designs because they love its bold colors and patterns. Some designers have copied traditional African draped clothing, including wrap skirts, and have designed jewelry that is influenced by African style.

Another example of the trading of fashion ideas is the influence of the Japanese kimono in the world of designers from Europe and the United States. Versions of the loose, flowing kimono can be seen in high fashion clothing designed today.

Key Notes:

Where does fashion come from?

What is Fashion?

Fashion is a popular style of clothing. The clothing that’s fashionable changes, though. Every year, designers sketch new clothing designs. Stores decide which designers’ clothes people might like. Then, people go out and buy what has become the latest style.

One example of how fashion catches on is the story of the T-shirt. It began in fashion as an undershirt for men in Europe. United States soldiers saw the comfortable shirts during World War I. T-shirts caught on as men’s underwear in the United States.

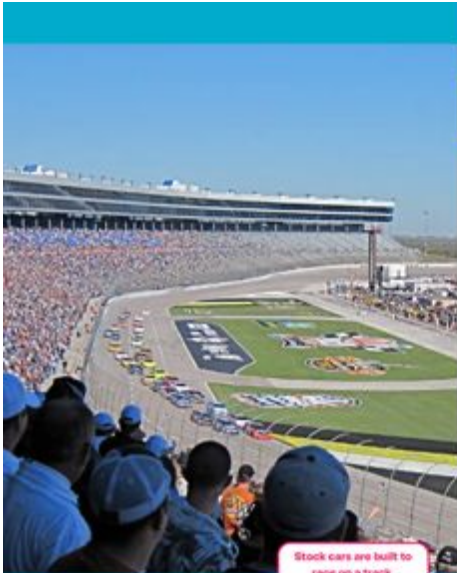
By the 1950’s, men were wearing T-shirts on the outside instead of in underwear. Movie stars started wearing them. Today, many people wear T-shirts. Sometimes the shirts have words that tell about those wearing them. Many fans of sports teams might wear shirts that tell which teams are those persons’ favorite.

Key Notes:

How did the T-shirt come into fashion?



Now clothing designs



Stock cars are built to race on a track.

Stock Car Racing

When World War II ended, U.S. carmakers turned their attention from tanks to cars. They made fast, powerful cars, and young men loved racing them.

People in different parts of the country raced different kinds of cars. In the South, people raced stock cars from a car dealer. In 1948, a racer named Bill France organized stock car racers into an association called the National Association for Stock Car Auto Racing, or NASCAR. Members raced stock cars on oval tracks.

From the time it was organized, NASCAR grew into a huge sport and a big business. Today, even though almost all the drivers and teams are in the South, millions of fans around the country watch NASCAR drivers race. These cars don't come from the dealer anymore. Instead, they're designed for one thing: going as fast as possible.

Key Notes:

What is stock car racing?



Streetball, a relaxed form of basketball, began in New York City.

Streetball

It was 1940 and another hot summer in New York City. That summer, a worker for the city began a street basketball tournament. That tournament was the origin of the sport that many people play today. Streetball, as it is called, is like basketball, but it is different, too, because the origins of streetball are in the street, not the gym.

Streetball is fast, and style counts more than it does in basketball. There is no net because most baskets have no nets. In streetball, a group of people decide the rules and play. Most streetball is played without refs.

Like many games, streetball comes from a particular place. Streetball was born because New York City had basketball hoops and hard surfaces on which to bounce basketballs. New York City still has these, and streetball is still played off and on its streets.

Key Notes:

What is streetball?

The Origins of Sports



LEVEL D-10 • Written by Elfrieda H. Hiebert



Rhymes and two twirling ropes are part of Double Dutch jump rope.

Double Dutch Jump Rope

Jump rope made its way across the ocean with Europeans who settled on the east coast of North America. Although many children in Europe jumped rope, Dutch children played the game in a different way.

Two children held the ends of two ropes and turned them in different directions. Another child stood within the twirling ropes, jumping over and under them. When English children saw jump rope played this way, they named it double Dutch.

The game was always common in New York City, but in the 1930s, a double Dutch craze began. Children said rhymes as they jumped to the difficult beat of the twirling ropes.

In the 1970s, the game became a sport, with teams saying rhymes as they competed to show their speed and skill. Today, double Dutch jumpers compete in events around the world.

Key Notes:

How is double Dutch jump rope different from other kinds of rope jumping?

© Level D-10, The Origins of Sports



Snowboarders use their arms for balance.

Snowboarding

In the snowy hills of Michigan in 1965, a father made a toy for his daughter. He put together two skis with a rope at the tip so the rider could hold the toy as it went down hills. His daughter's friends loved it, so the Michigan man made more. By 1966, more than half a million of these toys were sold.

The new sport got the name snowboarding, and soon many people were making snowboards. One was a young man who rode trays down the hills at his school. The young man started a business called Waterstick to make his snowboards. Unlike the ones first made in Michigan, these snowboards did not have a rope. Instead, snowboarders used their arms for balance.

The sport has grown. At first, many ski areas did not allow snowboarders, but not almost all do.

Key Notes:

What is snowboarding?

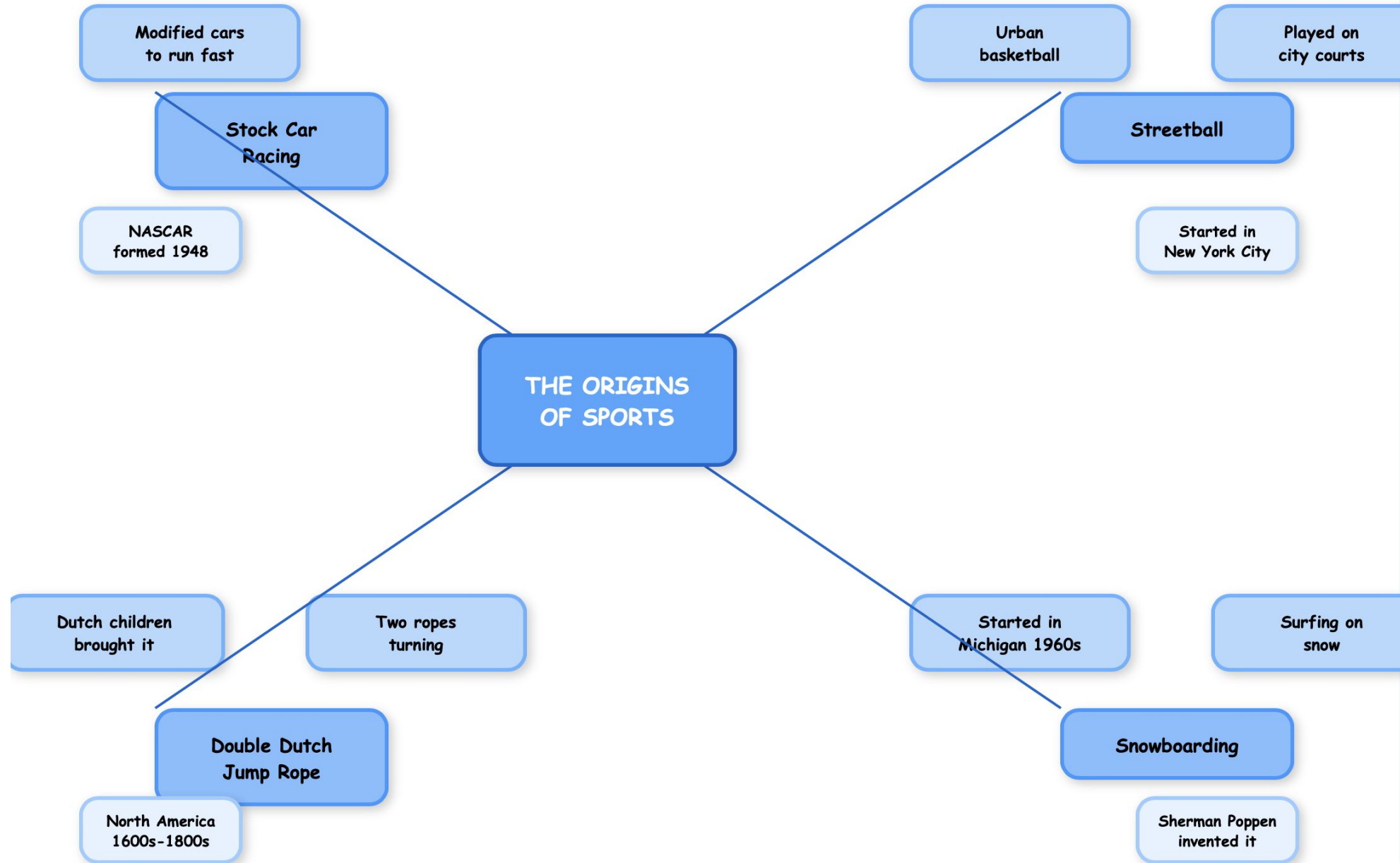
© Level D-10, The Origins of Sports



© Level D-10, The Origins of Sports



The Origins of Sports: Semantic Map



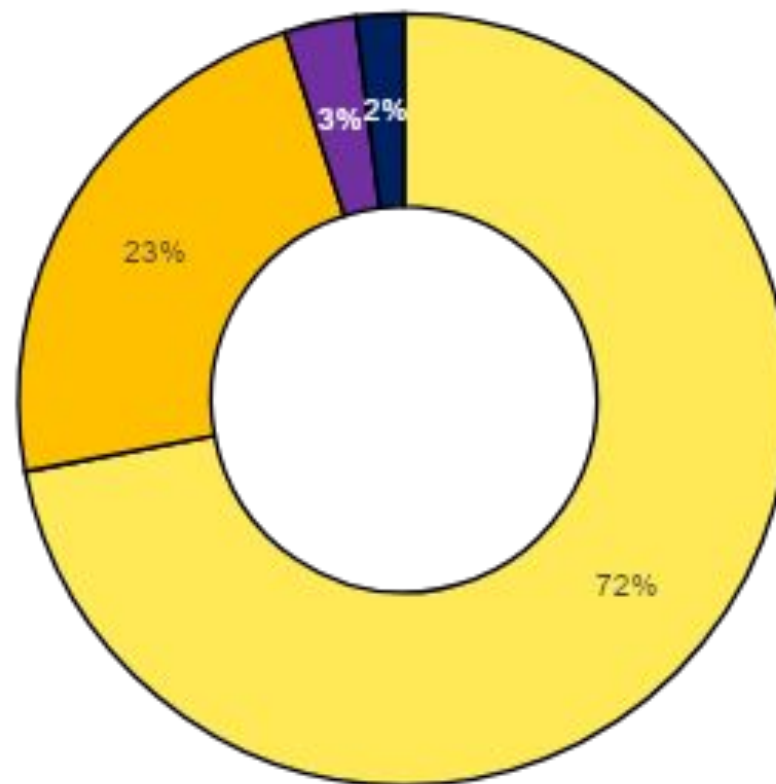
Coming Late
in 2025

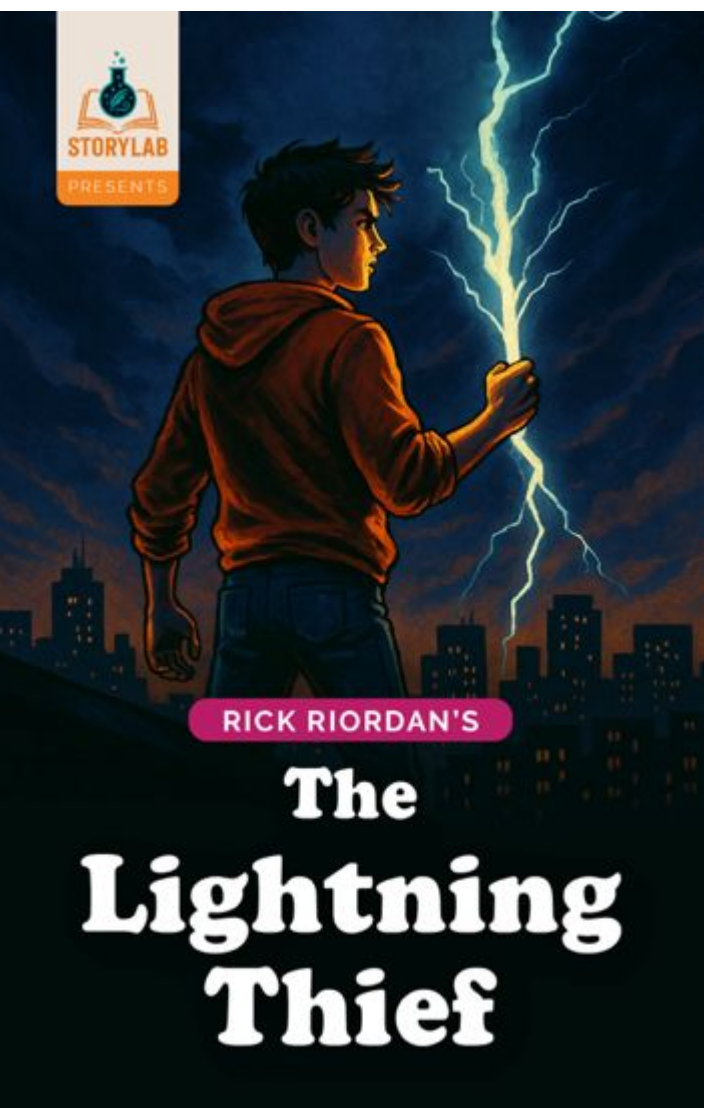


STORYLAB

PRESENTS

Highly Frequent Moderately Frequent Relatively Rare Very Rare





WHAT YOU NEED TO KNOW AN EXCERPT FROM CHAPTER 8:

ABOUT THE AUTHOR
Rick Riordan

TEXT CONNECTION

TEXT REFLECTION

Percy's Most Dangerous Challenges Define Him



A fan of the movie version of *The Lightning Thief* pretends he is Percy Jackson.

Percy Jackson's quest to find Zeus's lightning bolt and save his mom is more than a road trip. It is a test of courage, loyalty, and identity. The journey is filled with impossible situations, but Percy handles each challenge and grows because of them.

From the very start of the trip, Percy must fight for his life. Percy, Grover, and Annabeth board a bus in New York.

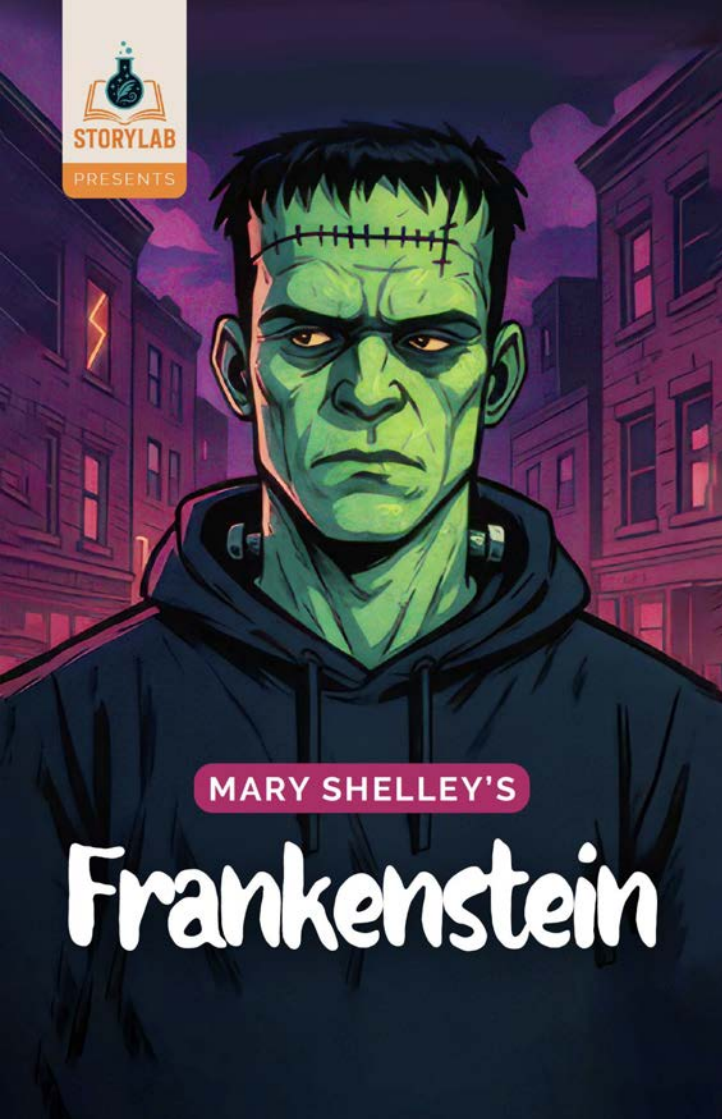
They encounter the Three Furies, winged demons. With the help of Grover's magic and Annabeth's quick thinking, Percy escapes. This moment shows that Percy isn't just running toward a goal. He must also figure out who he is under pressure.

Driving out west, Percy and his friends stop at a garden shop. Too late, they realize the shop is run by Medusa, the snake-haired monster who turns people to stone with just a look. Percy figures out how to kill Medusa. He proves to himself he can use his brain as well as his sword.

Percy and his friends get to Las Vegas and check into the Lotus Hotel and Casino. They hang out for what seems like a few hours but is really five days. They have been trapped by time-bending lotus flowers. Percy finally comes to his senses and becomes a true leader.

The final challenge comes in the Underworld. Percy faces Hades, the god of the dead. He realizes someone else put the lightning bolt in his backpack. Yet Percy is able to stay calm and prove his innocence to Hades.

By the end of the journey, Percy has faced gods, monsters, and his own doubts. Each time, he has chosen to stand up for what is right. His journey is not just about saving his mom or stopping Zeus. It is about discovering the hero he is meant to be.



WHAT YOU NEED TO KNOW

Mary Shelley's *Frankenstein*

corpses. Working alone in his lab, Victor stitches together body parts from different corpses.

A DETAILING FROM *FRANKENSTEIN*

ABOUT THE AUTHOR TEXT REFLECTION

Are Modern Scientists Like Victor Frankenstein?

When people compare cloning and artificial intelligence to Victor Frankenstein's experiment, they're asking an important question. Are today's scientists making the same dangerous mistakes as Mary Shelley's fictional character?

The similarities are obvious. Victor Frankenstein created artificial life from dead tissue. Today, scientists clone animals by copying their genes. Tech companies build AI systems that can learn like humans. In both cases, humans are trying to create something that acts alive or intelligent.

But the differences are big. Frankenstein worked alone in secret, driven by his obsession. He never considered the results of his actions or what his creature might need.



Computers might be able to mimic human behavior. But they do not have feelings like Frankenstein's creation.

In contrast, modern scientists follow strict safety rules. They work in teams and publish their research. They think about the rights and wrongs of their work.

Furthermore, real cloning isn't about bringing dead things back to life. Scientists use cloning to help endangered species survive, develop medical treatments, and understand diseases. Cloned animals are born naturally and live normal lives. There's no stitching together of body parts!

Artificial intelligence is also different from Frankenstein's creation. AI systems are computer programs, not physical creatures. Frankenstein's creature experienced emotions, while today's computers only mimic human emotions.

However, the comparison isn't completely unfair. Like Victor Frankenstein, some modern scientists worry about losing control of their creations. AI researchers debate whether super-intelligent machines could become dangerous. These concerns echo Shelley's warning about the dangers of unchecked power.

The real lesson from Frankenstein is not that we should stop scientific progress. It's that we need to be responsible in how we use our power to create. Victor's biggest mistakes were in failing to consider the consequences of his creation while obsessively pursuing it and, then, abandoning what he had created. Modern scientists understand that with great power comes great responsibility. That's what separates real science from horror stories.

FRANKENSTEIN

(THE STORY THAT KINDA FREAKED ME OUT NGL)

WHAT HAPPENS 🦴

Victor (the scientist dude)

- genius but also kinda obsessed
- works alone at night (creepy!)
- stitches dead body parts together 🤢
- makes 8 ft tall creature
- freaks out & RUNS AWAY (bad move bro)

The Creature

- actually smart & learns to read!
- watches ppl through windows to learn
- everyone's scared of him tho 😬
- just wants a friend
- gets SUPER mad when Victor says no

How it ends (SAD)

- creature kills Victor's family & wife
- Victor chases him to the Arctic
- Victor dies
- creature is sad & wants to die too
- ← nobody wins in this story omg

ABOUT MARY SHELLEY ✍️

She was literally 18!!!

- younger than my sister lol
- her parents were famous writers
- ran away w/ Percy at 16 🤯
- ppl were NOT happy about it

How she got the idea

- stuck inside bc of rain in Switzerland
- Lord Byron = "lets write ghost stories!"
- Mary had a nightmare about a scientist
- woke up scared but EXCITED
- wrote for a whole year

Fun Facts

- published in 1818
- ppl thought Percy wrote it at first
- one of the FIRST sci-fi novels ever!

BIG IDEAS/THEMES 💡

Playing God = bad idea

- Victor tries to create life
- doesn't think about what happens after
- loses control of his creation

Don't abandon what u create!

- Victor just LEAVES the creature
- creature needed help & guidance
- this is Victor's biggest mistake!!!

Rejection hurts

- creature is smart but ppl only see looks
- everyone runs away or attacks
- this is why he turns mean
- ← kinda feel bad for the creature tbh

Science w/o responsibility

- Victor works in SECRET
- no one to stop him or help
- doesn't think about consequences

WHY IT MATTERS TODAY 🦋

How ppl use the word now

- things that get out of control
- something meant to help but becomes dangerous
- btw most ppl think Frankenstein = monster but it's the scientist!

Tech examples

- social media = connects ppl but also spreads hate
- AI might become too powerful?
- video games, plastic surgery

Sports

- "Frankenstein team" = bunch of stars who don't work together
- like when they trade for ppl but still lose lol

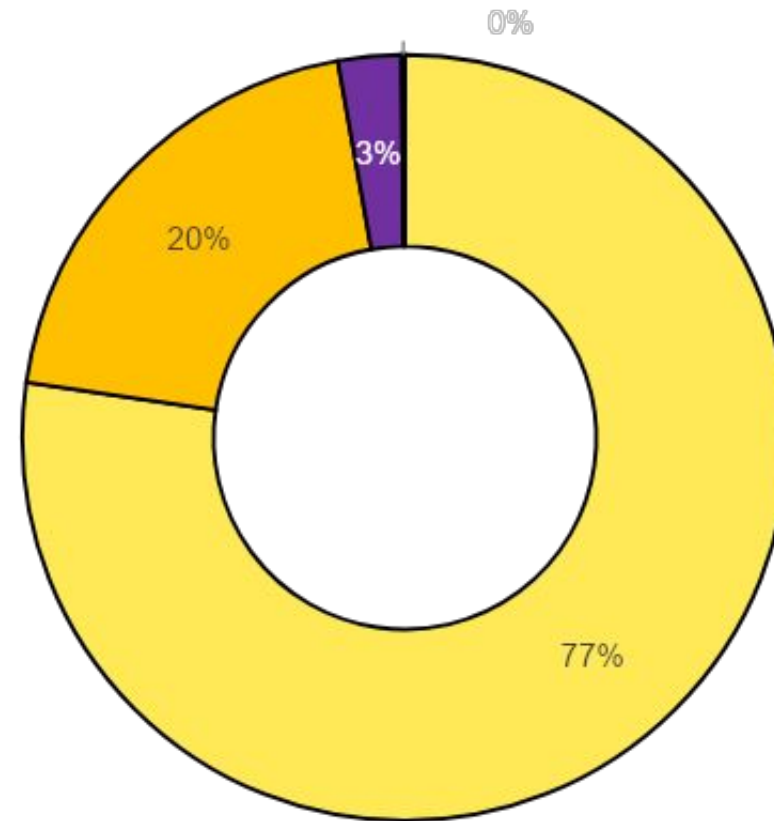
Real Science

- cloning animals
- genetic engineering
- AI that learns like humans
- ← kinda scary but also cool?



Texts generated with
AI-assistance that support
background knowledge for
specific texts and topics

■ Highly Frequent ■ Moderately Frequent ■ Relatively Rare ■ Very Rare



Please write 4 different texts, each of around 175 words. All of the texts deal with indigenous Americans.

The topics of the 4 unique texts should be:

The Medicine Bag for holding sacred objects.

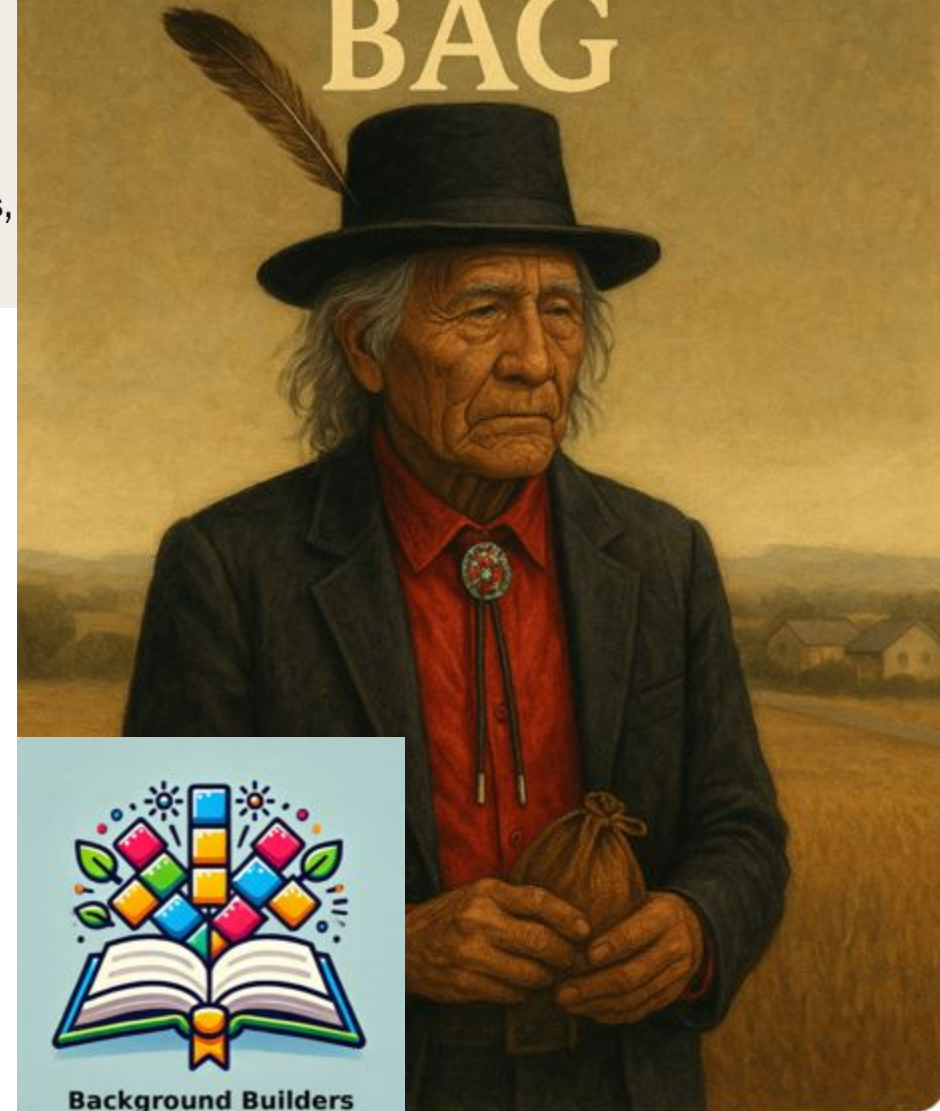
Hollywood Indians vs. Real Native Americans

Forced removal to reservations and boarding schools

Vision quests

The texts are for a reading fluency program aimed at middle schoolers. The target population is neither enthusiastic nor highly proficient at reading. Hence, the number of hard words in the texts should be small, used for key concepts such as reservations, traditions.

THE MEDICINE BAG



Background Builders



This medicine pouch contains sage, a special plant that people have used for centuries to cleanse spaces and offer prayers.

The Medicine Bag: A Sacred Pouch

A medicine bag is not what you might think. It's not filled with pills or bandages. For many Native Americans, a medicine bag is a small leather pouch that holds sacred objects—things that have spiritual power and meaning. Each family passes down their medicine bag from father to son, generation after generation.

The bag might look old, dirty, or worn out to outsiders, but that's because it has been treasured and carried for many years, sometimes over a century. Inside are special items like stones from holy places, pieces of plants used in ceremonies, or objects from important family stories.

The bag connects the person wearing it to their ancestors and their tribe's spiritual beliefs. It's one of the most important things a Native American family can own.

Hollywood Indians vs. Real Native Americans

If you've seen Native Americans in movies or TV shows, you probably have the wrong idea about how they really live. Hollywood usually shows Native Americans wearing feathered headdresses, living in tepees, and riding horses across the plains while shooting arrows.

The reality is much different. There are over 570 different Native American tribes in the United States, each with their own languages, traditions, and ways of life.

Most Native Americans today live in regular houses and work just like everyone else. Some live on reservations, others live in cities. For those who live on reservations, life can be challenging. Limited jobs on the reservation mean that rates of poverty are high. But Native communities are working hard to improve their lives and preserve their culture.

However challenging the context, many Native American groups celebrate special events. At these events, community members wear beautiful traditional costumes that connect them to their ancestors. While



The Rosebud Reservation in South Dakota has brought back buffalo herds.

Iron Shell's Vision Quest



These remains of an iron cooking pot are like one that Martin's great-father have found on his quest.

Long ago, young Native American men went on vision quests to find their life's purpose. On a vision quest, a young man went alone to a high place like a mountaintop, fasted for days without food, and prayed until he received a sacred dream or vision.

Martin's great-grandfather went on such a quest during a very difficult time. The U.S. government had forced his people onto reservations, and many young men felt hopeless about their futures.

During his three-day quest, Martin's great-father had a vision about finding "the white man's iron." When he came down from the mountain, he found the broken pieces of an iron cooking pot left by white travelers. He took a piece of this iron for his medicine bag, believing it would protect him.

The tribal elders gave him the name "Iron Shell" because of this vision. Later, when he was forced to go to a government boarding school, he understood his vision's meaning when he learnt to work with iron iron by becoming a blacksmith. The vision helped him survive and find purpose even in terrible circumstances.



The Native American children in the boarding schools had to work hard, including building and repairing the places where they lived.

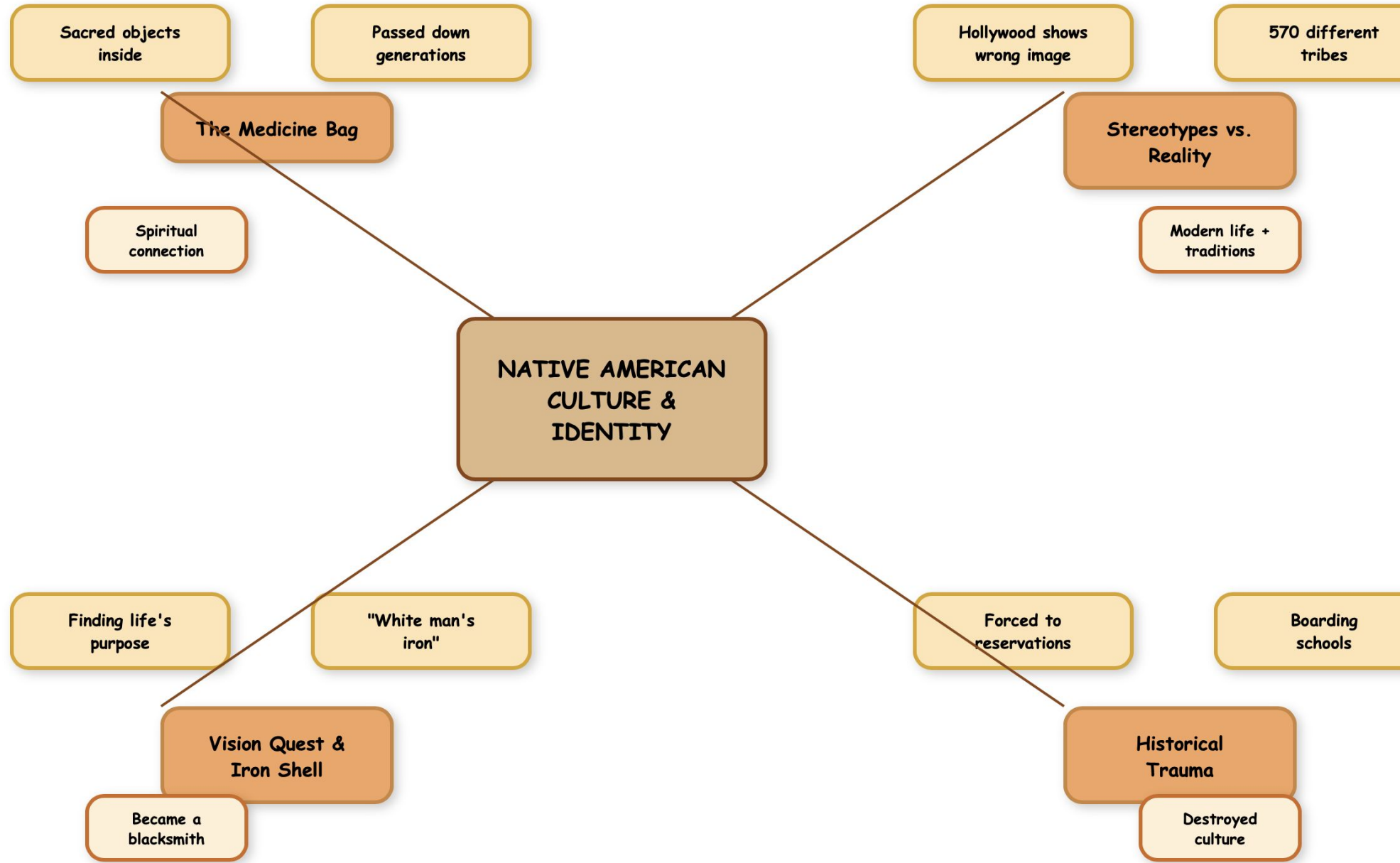
Forced Removal to Reservations and Boarding Schools

In the late 1800s, the U.S. government forced Native Americans to leave their traditional lands and move to reservations—small areas of land set aside for them. This wasn't their choice. The government wanted the good farmland and gold that was found on Native lands. Laws were made that forced tribes to relocate, sometimes hundreds of miles away.

Life on reservations was hard. The land was often poor for farming. They couldn't hunt or live the way their ancestors had for thousands of years.

To make things worse, the government also created boarding schools far from the reservations. Native American children were taken away from their families and forced to attend these schools. At the schools, children had to cut their hair, wear uniforms, and speak only English. The government wanted to destroy Native American culture completely. Many children didn't see their families for years. This caused much pain and trauma that has affected generations of Native American families.

The Medicine Bag: Semantic Map



**3. How can we
support capacity in
foundational fluency?**

Answers?



1. What do analyses of millions of texts tell us about the vocabulary students face?

2. How can we support students' proficiency with critical vocabulary in specific texts and aid in their ability to generalize to other words and other texts?

3. How can we help students who need additional support become more fluent with vocabulary?



[TEACHING TOOLKIT](#) ▾

[FREE TEXTS](#) ▾

[VOCABULARY RESOURCES](#) ▾

[RESEARCH](#) ▾

[NEWS](#) ▾

[ABOUT](#)



Building Better Readers

Free, evidence-based texts for supporting beginning and struggling readers.

[FREE TEXTS](#)

Summary of efficacy of Scaffolded Texts on Automaticity and Comprehension

- Albay, M. (2017). The benefits of graded reading. *International Journal of Social Sciences & Educational Studies*, 3(4), 177–180.
- Hadley, G., & Charles, M. (2017). Enhancing extensive reading with data-driven learning. *Language Learning & Technology*, 21(3), 131–152.
- Hiebert, E. H., & Fisher, C. W. (2005). A review of the National Reading Panel's studies on fluency: The role of text. *The Elementary School Journal*, 105(5), 443–460.
- Huxley, A. B. P. (2006). *A text-based intervention of reading fluency, comprehension, and content knowledge* (Unpublished dissertation). University of Michigan.
- Jeon, E., & Day, R. R. (2016). The effectiveness of ER on reading proficiency: A meta-analysis. *Reading in a Foreign Language*, 28, 246–265.
- Madden, N. A., Neitzel, A. M., & Storey, A. (2023). *Tutoring with ThemeReads: Early outcomes of an adaptation of a proven literacy tutoring model for middle grades students* Report to the Abell and Shelter Foundations. Johns Hopkins University.
- Masrai, A. (2019). Vocabulary and reading comprehension revisited: Evidence for high-, mid-, and low-frequency vocabulary knowledge. *SAGE Open*, 9(2), 2158244019845182.
- Nakanishi, T. (2015). A meta-analysis of extensive reading research. *TESOL Quarterly*, 49, 6–37.
- Reed, D. K., Zimmermann, L. M., Reeger, A. J., & Aloe, A. M. (2019). The effects of varied practice on the oral reading fluency of fourth-grade students. *Journal of School Psychology*, 77, 24–35.
- Schmitt, N., Jiang, X., & Grabe, W. (2011). The percentage of words known in a text and reading comprehension. *The Modern Language Journal*, 95(1), 26–43.
- Tozcu, A., & Coady, J. (2004). Successful learning of frequent vocabulary through CALL also benefits reading comprehension and speed. *Computer Assisted Language Learning*, 17(5), 473–495.
- Trainin, G., Hayden, H. E., Wilson, K., & Erickson, J. (2016). Examining the impact of QuickReads' technology and print formats on fluency, comprehension, and vocabulary development for elementary students. *Journal of Research on Educational Effectiveness*, 9(sup1), 93–116.
- Vadasy, P. F., & Sanders, E. A. (2008). Benefits of repeated reading intervention for low-achieving fourth-and fifth-grade students. *Remedial and Special Education*, 29(4), 235–249.