

At the Heart of Words are Ideas

A row of ten books with colorful spines (yellow, orange, red, green, blue) and decorative patterns, standing upright against a blurred background of warm, bokeh lights.

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Santa Cruz

Small Changes



Knowledge in the Digital Age

1986

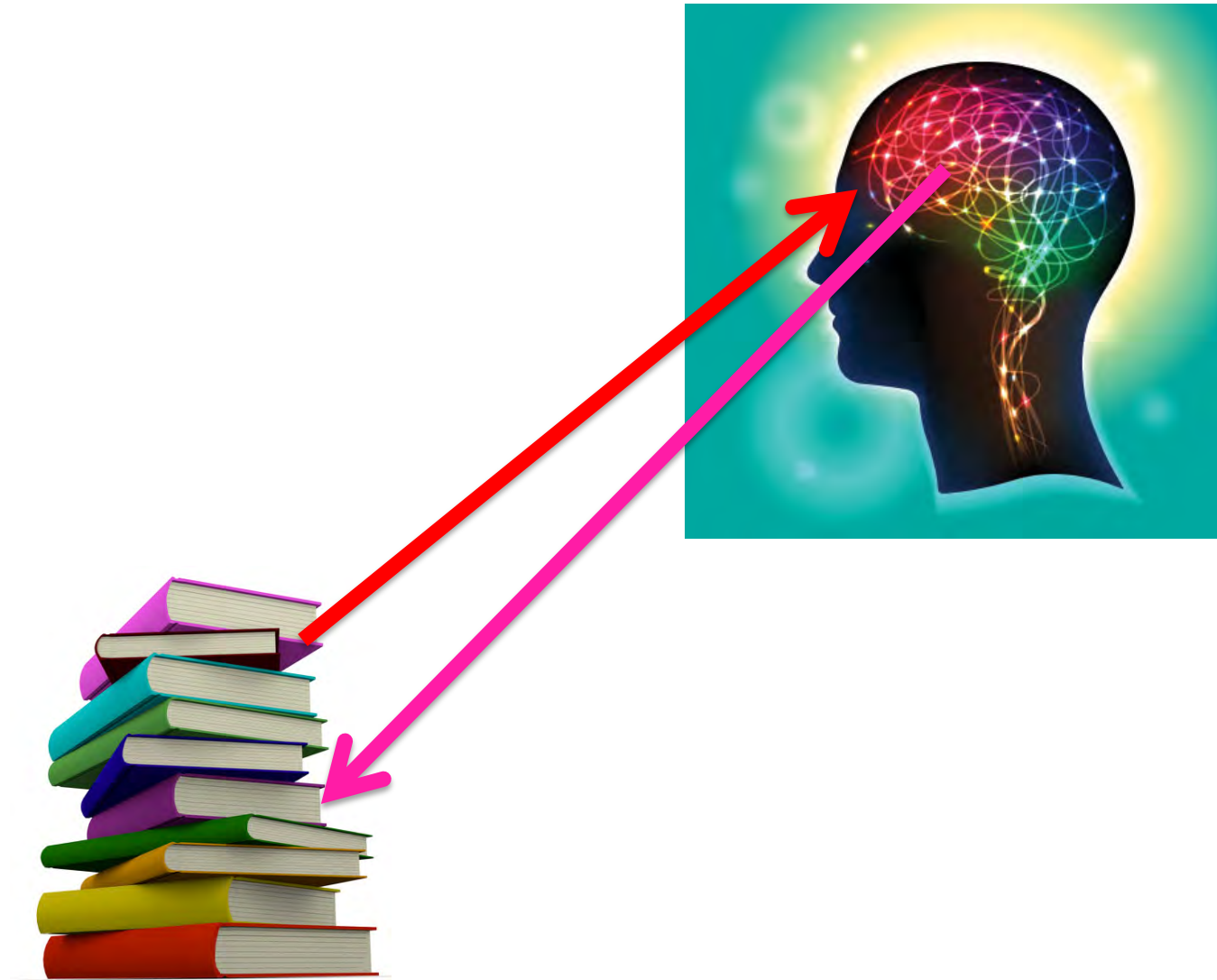


2007

2019







Discussion #1:

1. How many words do you estimate you teach in English/Language Arts instruction in a year?
2. What percent of the English vocabulary is this?



Idea 1: You can't teach all English words but you can teach students about the underlying systems.

ENGLISH HAS THREE DISTINCT MORPHOLOGICAL SYSTEMS.



Small Changes for Understanding the English Lexicon



**GREEK/
LATIN**

Technical words
New words by com-
pounding: graph, para-
graph (s), photograph (s),
telegraph

ROMANCE

Most literacy and academic words
New Words through derivations:
separate, separates, separating, separ-
ated, separation, separately, separable

ANGLO-SAXON

Common, everyday, down-to-earth words
New words through compounding:
field (s), airfield (s), battlefield (s), cornfield (s)

Idea	Action	Open-Access Resource
1. English has more words than can be taught.	1. Teach students to expect new words in texts.	1. Vocabulary Triangle
2. A small group of words does the heavy lifting in English.	2. Increase volume of reading	2. •FYI for Kids •ReadWorks.org
3. Rare words in narrative texts belong to synonym networks; those in informational texts in topic networks.	3. Teach students prolific synonym networks & organize topics into networks.	3. •Super Synonym Sets for Stories (S4) •Exceptional Expressions in Everyday Events (E4)

DISCUSSION 2

1. What percentage of the vocabulary is the same across end-of-year texts for Grades 3, 5, & 7?

FL—Grade 3

What a tangle of ants! But it's just what the ants need to save their colony from drowning. As the ants weave themselves together, they don't even get their antennae wet.

Once the raft is in place, one by one and two by two, more ants march out of the nest and onto the ant raft. They carry ant eggs, ant babies, and, of course, the queen. (Some ants may even pack a bit of food for the trip.)

Up and out the ants march until the entire nest of ants is on the raft. An average sized nest is made up of 100,000 fire ants.

FL—Grade 5

In the nearby South Orchard, he grew 130 varieties of fruit trees like peach, apple, fig and cherry. All the time, he carefully documented planting procedures, spacings of rows, when blossoms appeared, and when the food should come to the table. Behind Jefferson's "zeal to categorize the world around him" was a patriotic mission, Hatch says.

Jefferson wrote, "The greatest service which can be rendered any country is to add a useful plant to its culture."

Lots of things failed in the garden. His entries from 1809 show the carrots, beets, sorrel and okra, the cauliflower, tarragon and Chinese melons missing the mark.

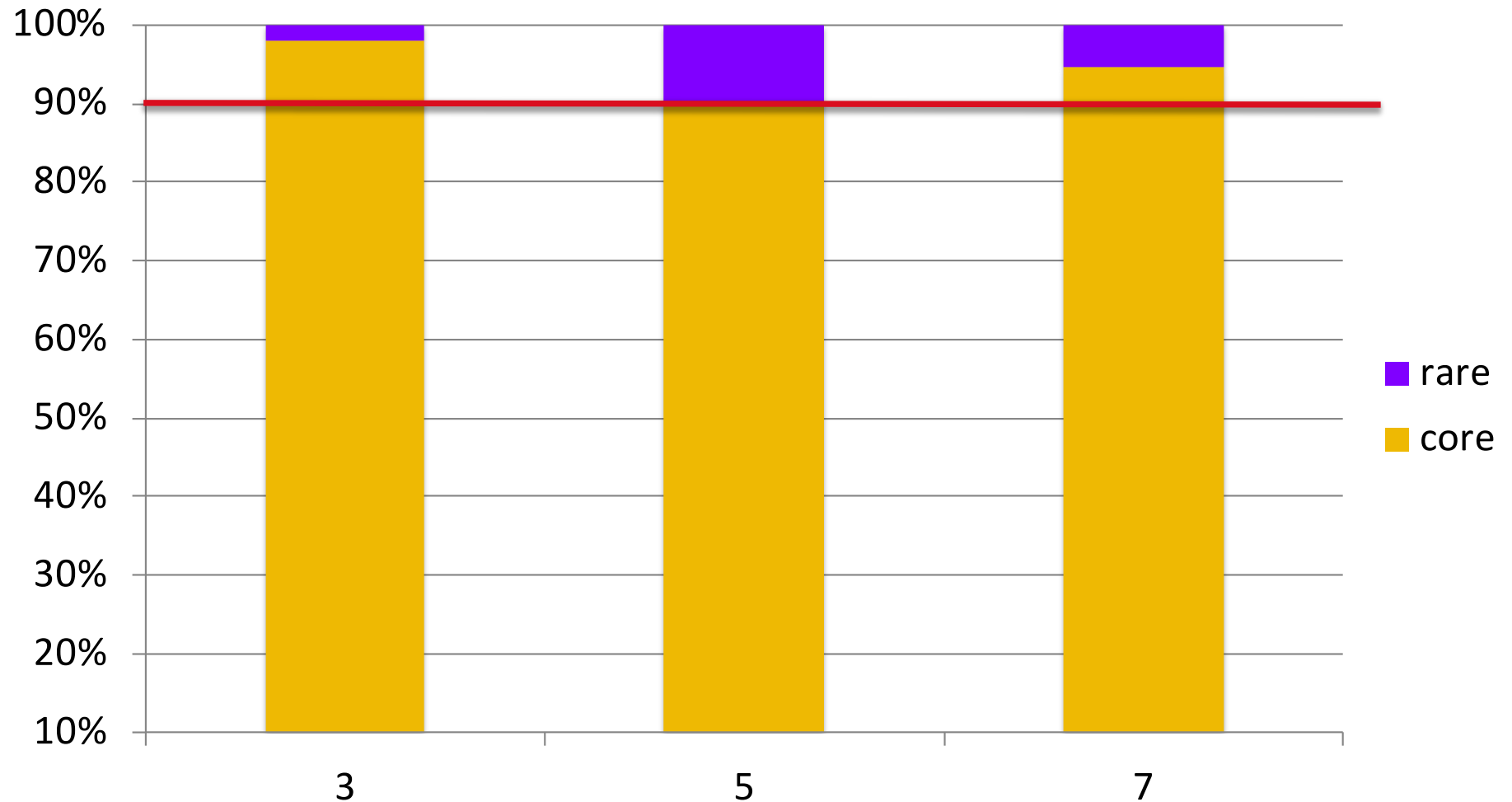
FL—Grade 7

Imagine you are Percy Spencer in the brand-new world of electrical engineering. So much to discover! And so many mistakes to make!

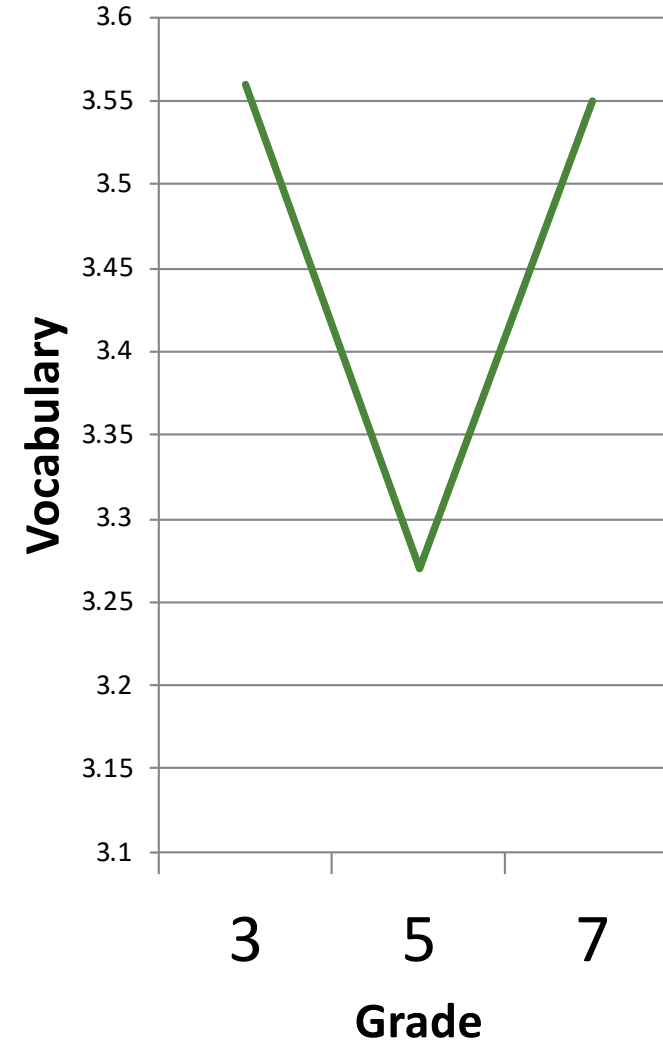
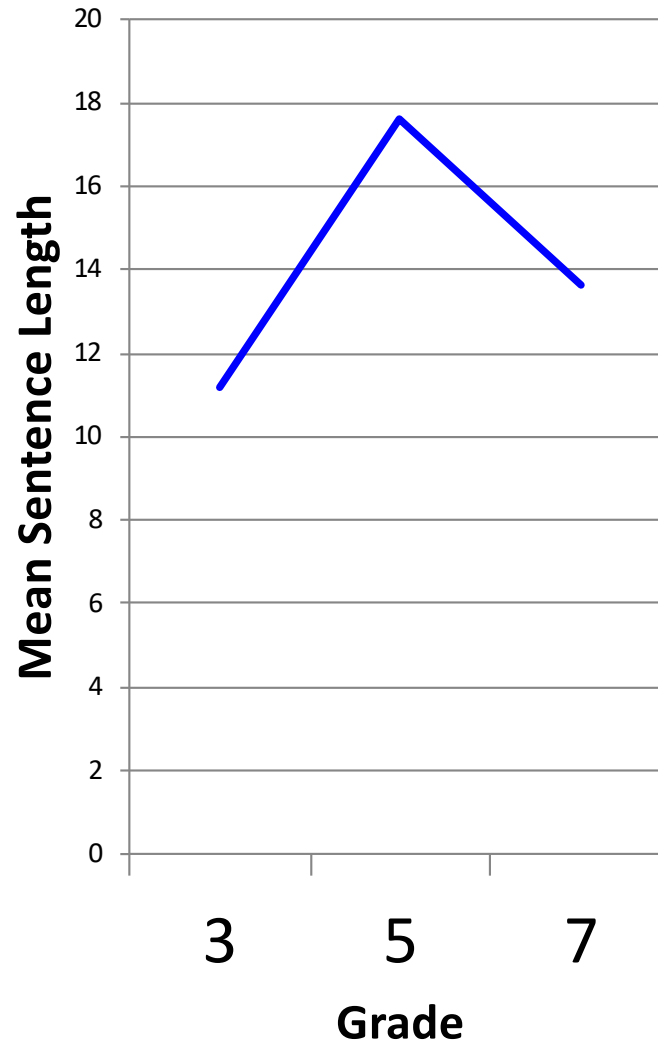
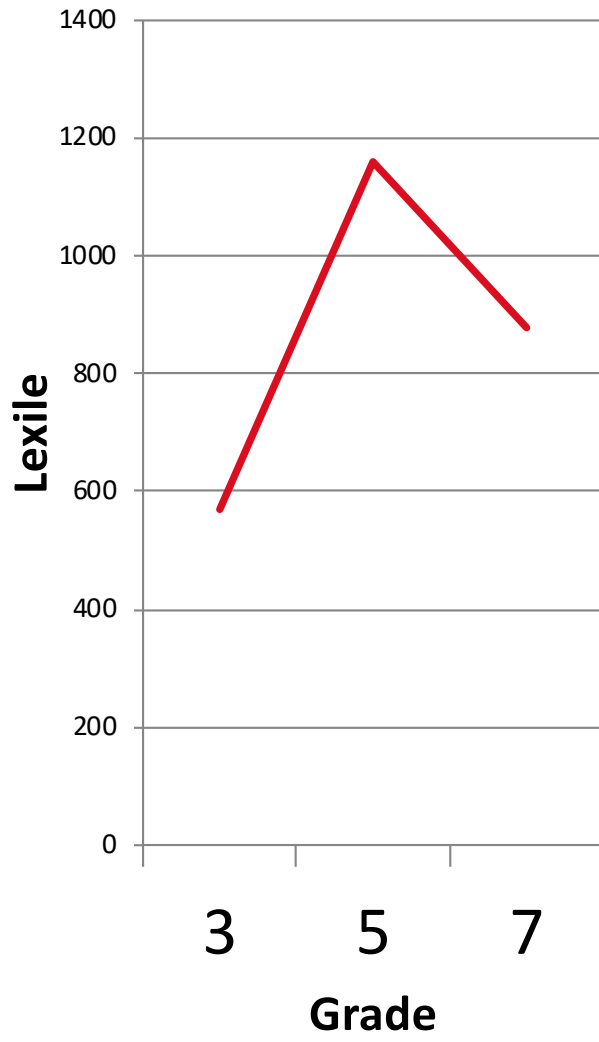
In everything he did from then on, Percy Spencer seemed to run toward discovery and take the chance of making mistakes. He joined the navy to become a telegraph operator. Once again, he did not know much about this type of work. He taught himself what he needed at night, while he was standing watch on the ship.

By the time he was in his early 20s, Percy Spencer had taken another big leap. He was only the fifth employee of the new company Raytheon.

Word Patterns in FL Texts



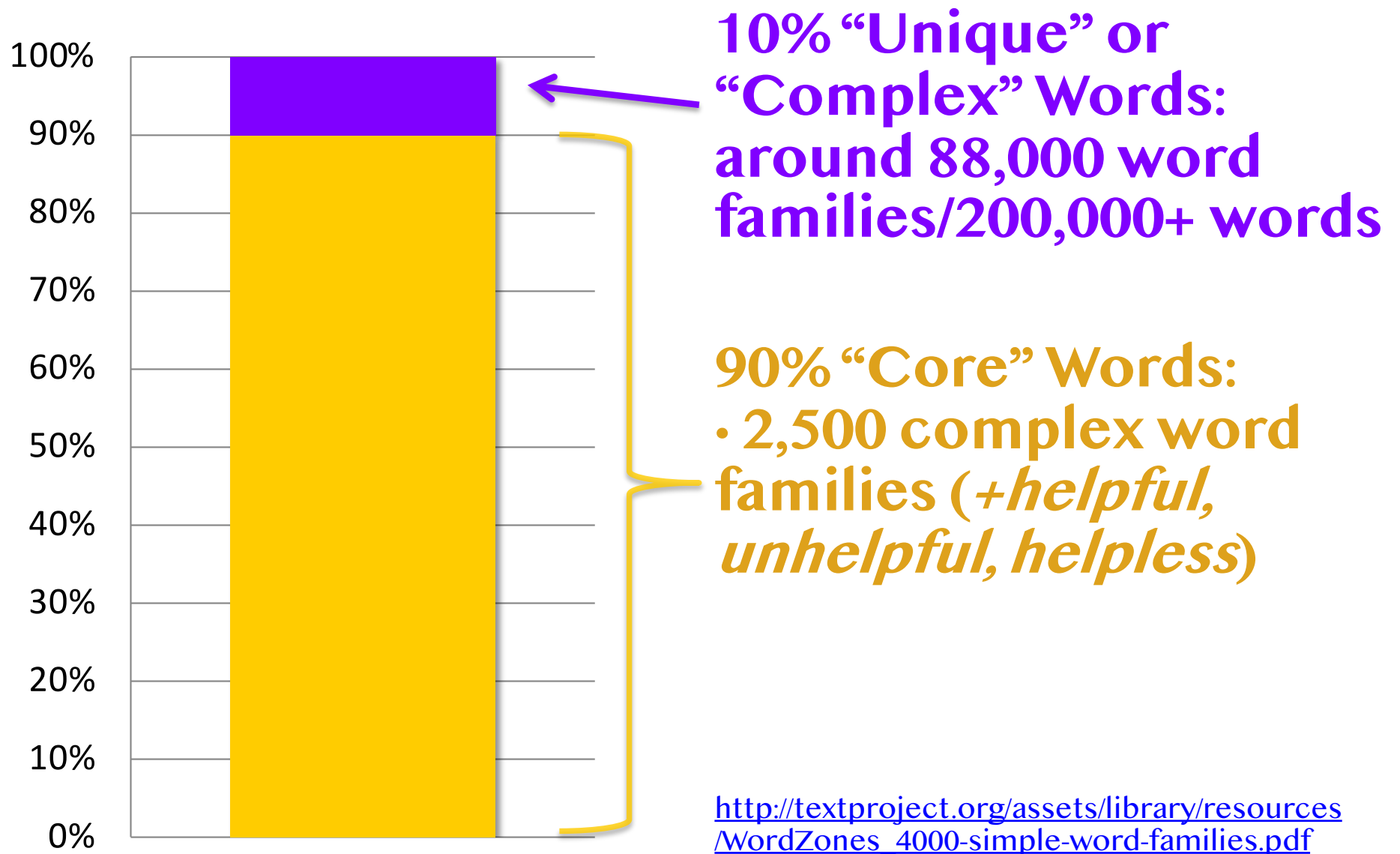
Lexiles of FL Texts





Idea 2: A small group of words does the heavy lifting in English.

The distribution of words in written English

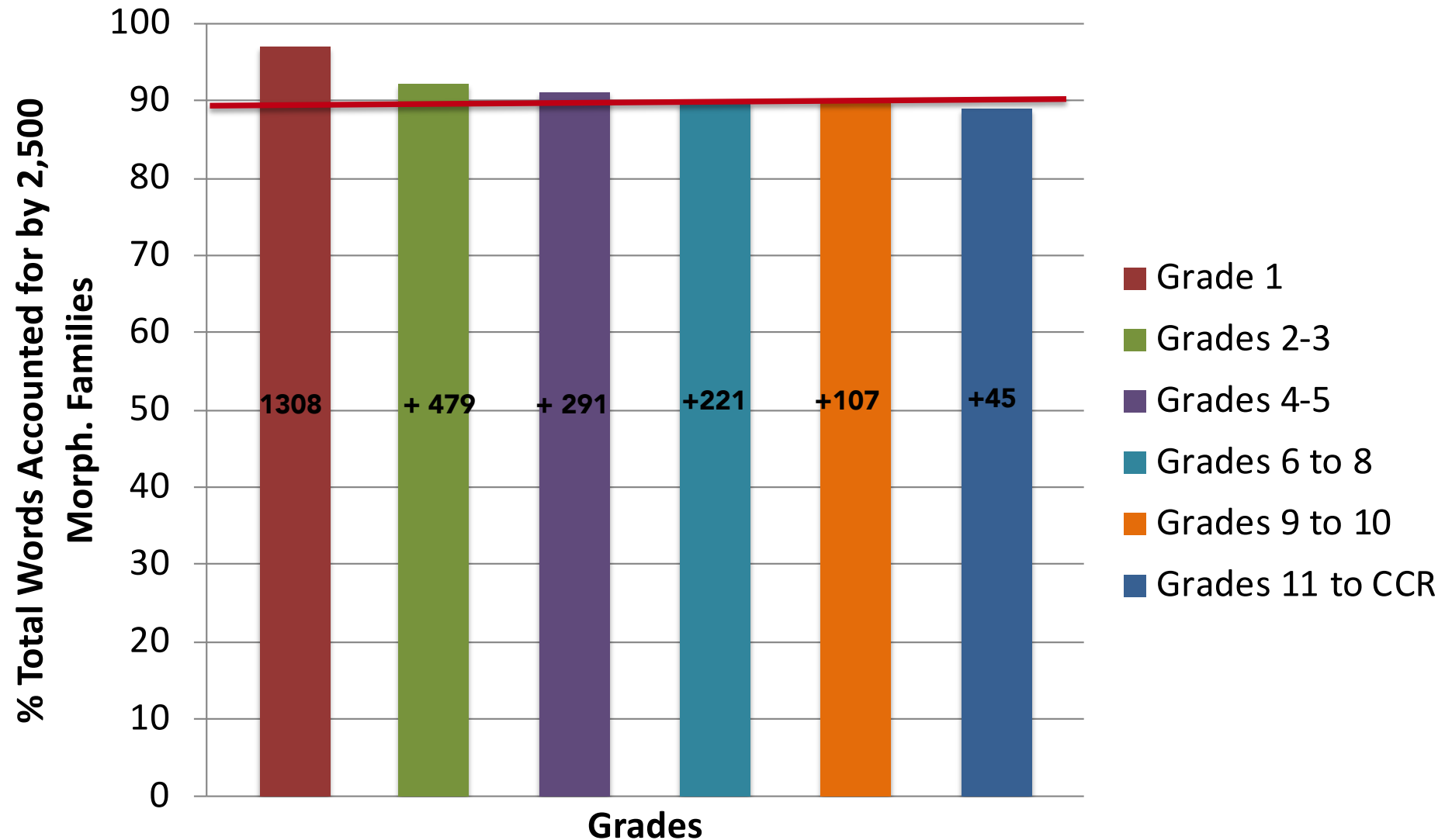


Examples of the Words in the Core Vocabulary

	words
1st 100	the, by, no, through, must
101-300	long, great, put, last, family
301-1,000	power, north, story, strong, answer
1,001-1,500	valley, imagine, motion, nearby, importance
1,501-2,000	character, responsible, design, presence, trail
2001-2,500	mixture, discovery, civilization, attitude, assume

Analysis of a Million Word Corpus

(Exemplars from Common Core State Standards)



Small Changes for Supporting students' core vocabulary



Talking
Points

For
Teachers

2a. Hold Conversations About Ratio of Rare to Core Words in Texts

Why?

- Develop the understanding that every complex text has new, challenging vocabulary. Vocabulary instruction gives students the means for figuring out new words in text, not instruction in every single word that might appear in new texts.

When?

- Talks about the vocabulary of new texts need to occur across a school year (with extra doses prior to assessment periods).

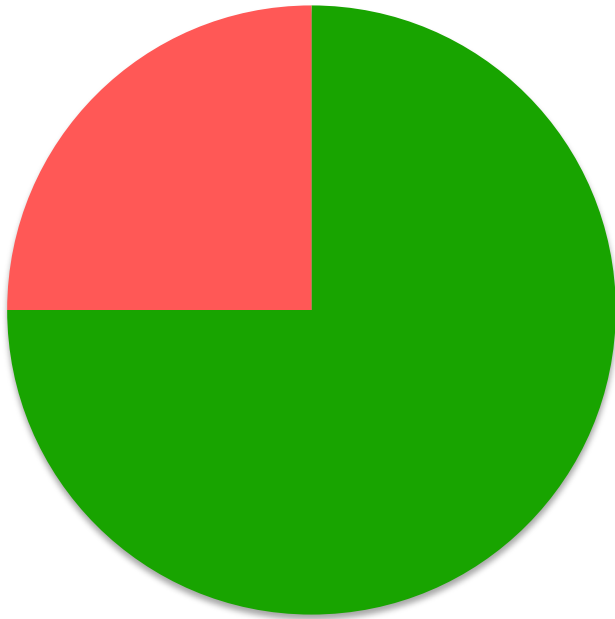
How?

- Demonstrate the nature of vocabulary with texts.

When 10-year old Amelia Mary Earhart saw her first plane at a state fair, she was not impressed. “It was a thing of rusty wire and wood and looked not at all interesting,” she said. It wasn’t until Earhart attended a stunt flying exhibition, almost a decade later, that she became seriously interested in aviation.

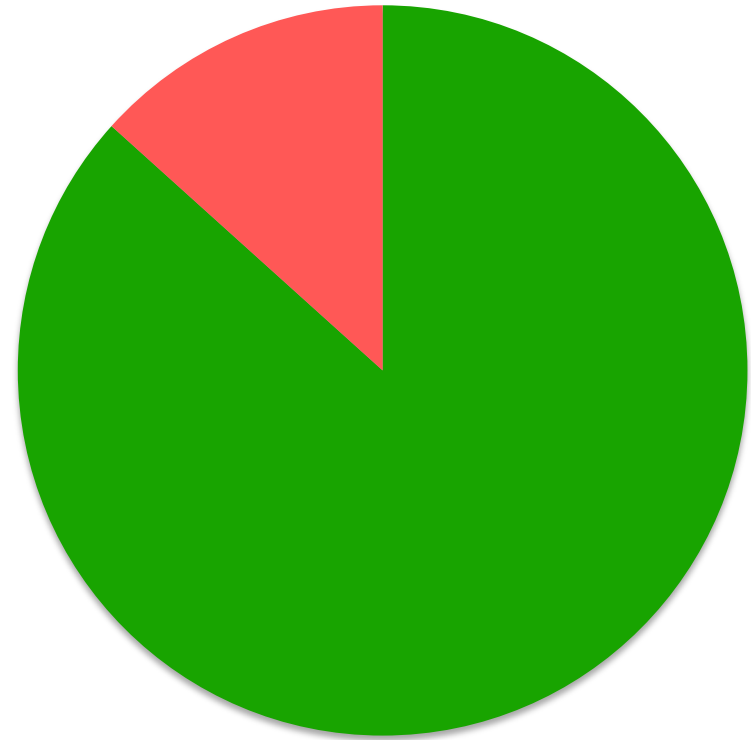
2b. Increase students' RESPONSIBILITY FOR READING text

**Reading Instruction (1970s
to late 1980s)**



■ Instruction ■ Time Spent reading

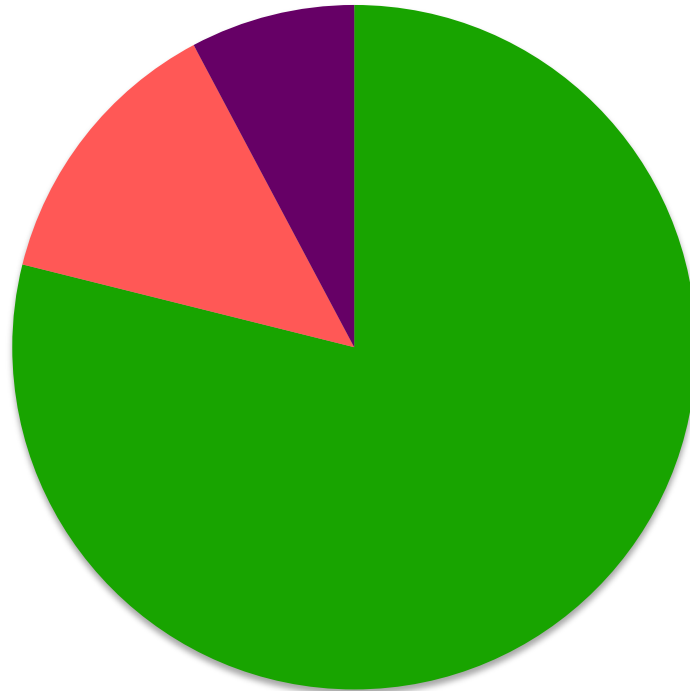
Reading Instruction (late 1990s -)



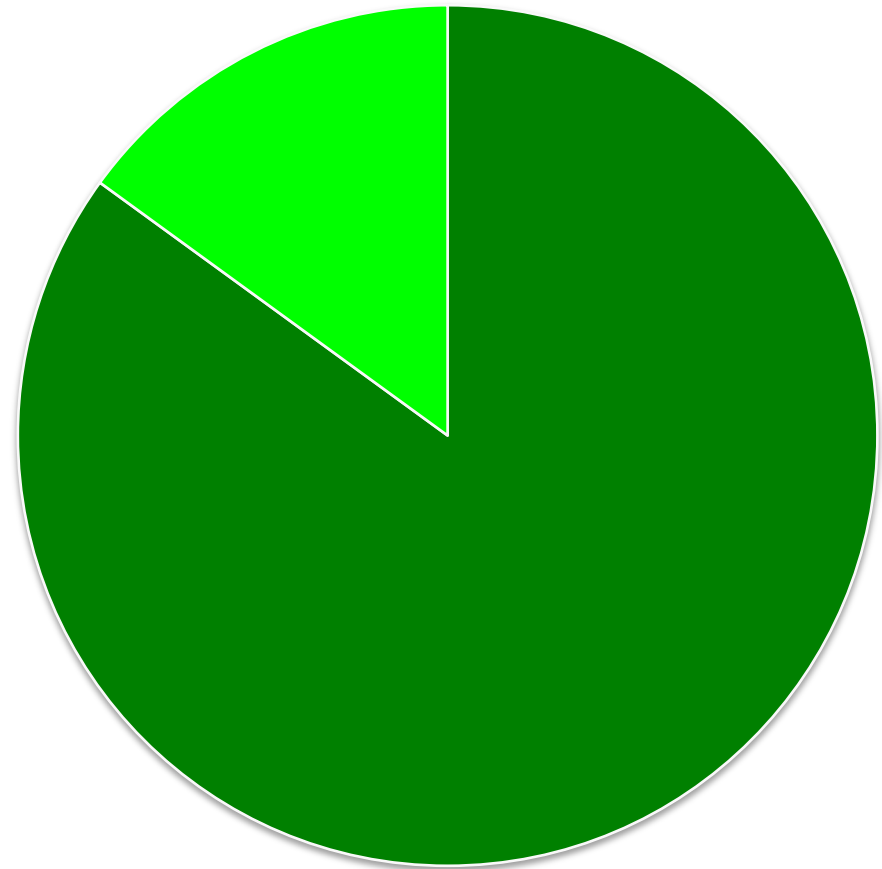
■ Instruction ■ Time Spent reading

7 Minutes of Additional Reading

**Reading Instruction
(w/ 7 additional minutes)**

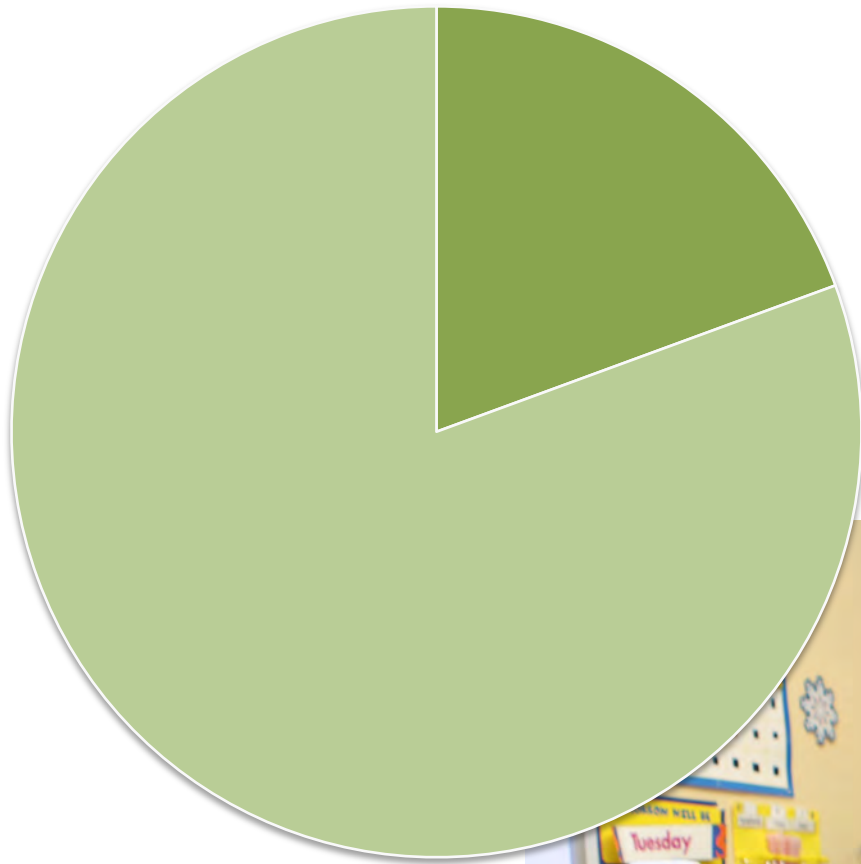


■ Instruction ■ Time Spent reading ■ Additional 7 minutes



■ Other activities ■ Reading

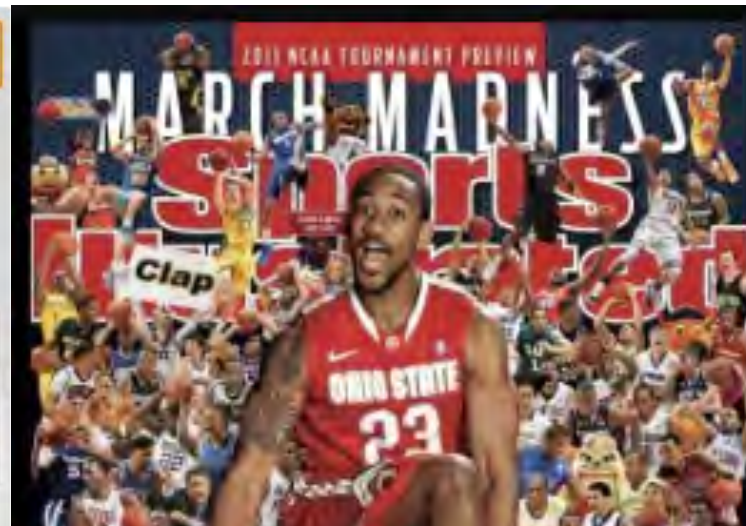
Swanson, Wanzek, McCulley, Stillman-Spisask, Vaughn, Simmons, Fogarty, & Hairrell, 2015.



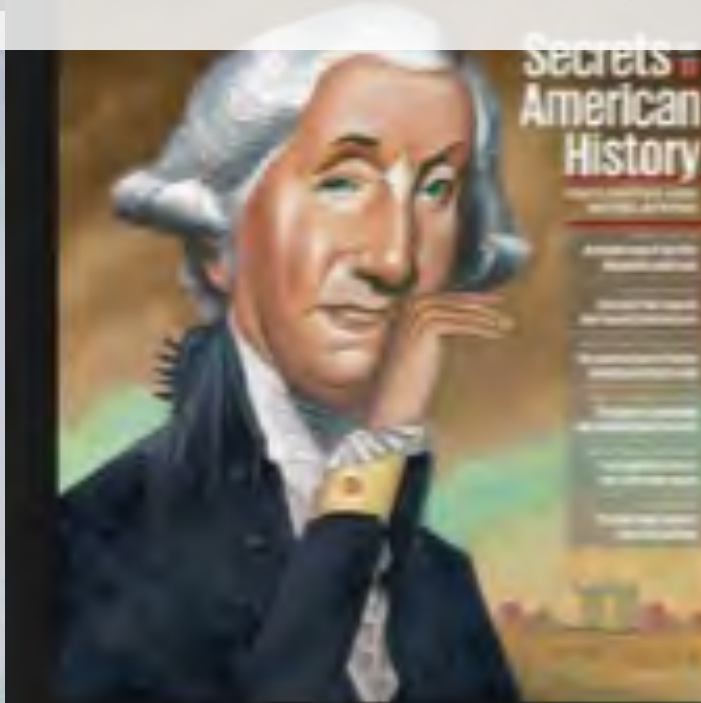
■ Silent Reading

■ Listening, Following Along to Oral Reading





2c. Increase students' reading: Topically connected articles



**Readworks.org has
approximately 4,500 free
passages for Grades 1-High
School—including 450
curated sets of articles in the
Read-an-Article-a-Day
initiative**



Clouds and Rain

ARTICLE-A-DAY SET

Earth & Space Science

1st Articles range from 220L to 790L Informational



Animals from Different Places

ARTICLE-A-DAY SET

Sports, Health & Safety, Life Science, Earth & Space Science

1st Articles range from 300L to 540L Informational



Jobs and Careers

ARTICLE-A-DAY SET

Geography & Societies, Sports, Health & Safety, School & Family Life, Arts & Culture, Technology & Engineering

2nd Articles range from 270L to 650L Informational



Health and Body

ARTICLE-A-DAY SET

Sports, Health & Safety, School & Family Life, Life Science

2nd Articles range from 480L to 710L Informational



Animal Senses, Safety, and Homes

ARTICLE-A-DAY SET

Geography & Societies, Life Science

2nd Articles range from 500L to 630L Informational

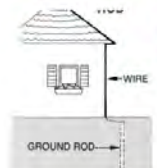


Exploring Continents

ARTICLE-A-DAY SET

World History, Geography & Societies, Life Science, Earth & Space Science

2nd Articles range from 530L to 710L Informational



Inventions

ARTICLE-A-DAY SET

Winter Season, Technology & Engineering

1st Articles range from 250L to 570L Informational



Amphibians and Reptiles

ARTICLE-A-DAY SET

U.S. History, Geography & Societies, Life Science, Earth & Space Science

2nd Articles range from 430L to 760L Informational

The Article-a-Day Initiative: Sets of articles for a week around a topic; articles cover a range of complexity levels

Illustration: Article-a-Day

Dances around the World

ARTICLE-A-DAY SET

[Articles](#)

Book of Knowledge

[China's Lion Dance](#)

Hawaii's Traditional Hula Dance

The Argentine Tango

India's Classical Dance: Bharatanatyam

The Traditional Irish Step Dance

Gumboot Dance from South Africa

China's Lion Dance

356 words



Lion dance performed in Singapore

If you have ever seen a celebration of the Chinese New Year, you may have seen a large, colorful creature dancing to the sounds of drums, cymbals, and gongs. Of course, this is not a real beast. It's actually skilled dancers in costume, performing a lion dance. When these dancers come together, they form the colorful dancing creature!

The lion dance is a traditional part of Chinese culture. It is often performed on the eve of the Chinese New Year (or Spring Festival). It's also performed for other special occasions, like weddings. The dance is thought to bring good luck, and prosperity, or success.

While there are many different tales of how lion dance began, one legend traces it back to a village in China hundreds of years ago. The legend says that the people of the village were attacked by a monster called a nien. A lion chased the nien away. But a year later, the nien returned, and this time the lion was unable to help. So the people of the village created a lion costume of their own. Their fake lion danced, pranced, roared, and chased the nien away. For this reason, people perform the lion dance on the night before the Chinese New Year – they chase evil away for another year.

The lion dance is performed by two dancers. One dancer performs as the lion's head and front legs, and the other performs as the body and back legs. The head of the lion costume is made out of materials like papier-mâché and bamboo. The body of the costume is a long cloth attached to the head.

There are two different styles of lion dance. In a southern lion dance, the dancers base their performance on a lion's behavior. Their lion may scratch or shake its body. The dance can even be funny.

The other style is the northern lion dance. This style is closely related to the martial art form kung fu. It can involve rolling, leaping, and jumping.

Both styles require skill and practice to perform. And both are very entertaining to watch!

Hawaii's Traditional Hula Dance

300 words



Dancers performing hula dance

The Hula is a traditional Hawaiian dance. It is known partly for its smooth and graceful movements of the arms, hands, and hips. Hula dancers often mimic movements from nature. Their movements may look like trees in the wind or waves in the water. The dancers also tell a story with their movements. Chants, or *mele*, go along with the movements to help tell the story.

There are many myths as to how the hula dance originated. One legend says that Pele, the volcano goddess, danced the first hula dance. According to this myth, Pele was running from her sister, the goddess of the oceans. She was trying to find a place where she couldn't be touched by the ocean waves. She finally found such a place. It was a chain of craters on the island of Hawaii. There, Pele danced the first hula to show that she had beaten her sister!

Although people today dance the hula freely, the dance was actually banned during part of the 1800s. It was banned by Christian missionaries who arrived in Hawaii in 1820. Before then, the hula was used in religious ceremonies. But the missionaries did not approve of the religious ceremonies the people of Hawaii were holding, or the dancing that went with them. After it was banned, the dance continued to be taught and danced secretly. But as more Hawaiians started becoming Christians, the dance became a dying part of Hawaiian culture.

All of this changed during the reign of Hawaii's last king, David Kalakaua. He was the king from 1874 to 1891. He encouraged hula dancing to come back out into the open. As a result, the dance resurfaced, now with new movements, costumes, and song. Today, the hula tradition lives on in Hawaii.

India's Classical Dance: Bharatanatyam

287 words



Bharatanatyam dancer

India is home to many different classical dance styles. One of the oldest classical dances of India is Bharatanatyam (Ba-ra-tha-NAA-tium).

The name Bharatanatyam comes from the language Sanskrit. "Bha" is short for *bhava*, the Sanskrit word for feeling. "Ra" comes from the word *raga*, which means music or melody. "Ta" comes from *taala*, or rhythm. And finally, "natyam" is the word for dance. So the name Bharatanatyam speaks for itself! It is a dance that includes music, rhythm, and emotion.

People first began dancing Bharatanatyam in the Hindu temples of southern India many centuries ago. Only women dancers performed the dance style. The dance expressed the religious themes of Hinduism, one of India's main religions and one of the oldest religions in the world. Much later, in the 1900s, the dance style began to be performed on stages and in theaters.

Bharatanatyam dance often involves telling a religious story. The dancer uses hand movements to tell a tale. Certain hand positions and gestures have certain meanings in the dance style. But the dancer's facial expressions are important to the tale, too. Along with eye and neck movements, facial expressions can affect the meaning or mood of the story a dancer is trying to tell.

This dance style also involves complex rhythms. The dancer's feet beat out different patterns that go along with the music. Often, the dancer wears bells around his or her ankles. These bells jingle along with the beat, too.

Today, Bharatanatyam is one of the most popular Indian dance styles. It is performed all over India by both men and women. And now, this beautiful and powerful dance style is taught, learned, and performed all over the world!

2d. Sorting Texts by Topic

Texts of a *Typical*/Literacy Program*

[Grade 2]



*Texts from Leveled Literacy Intervention, Heinemann

Texts of a *Knowledge* Literacy Program*

[Grade 2]



*Texts from W.O.R.D., Scholastic



Typical

- 704 Word Families¹, 225 of which include more than one family member in texts
- 6% words outside 2,500 Word Families



Knowledge

- 800 Word Families¹, 501 of which include more than one family member in texts
- 4% words outside 2,500 Word Families

¹analysis of word families in Word Zones 3-5

Jobs:
astronaut
captain
clerk
doctor
nurse



Stories:
strangers
robber
king
giant

People in Typical Program

Age & Gender:
adults
babies
boy
female
...

Groups & General:
team
students
human

Families & Friends:
brother
cousins
wife
uncle
sister
son
parents
friend

Groups & Organizations:
crew
crowd
navy
army

School
teacher
student
pupil
class
scientist

Stories:
characters
giant
king
queen
fan*
hero

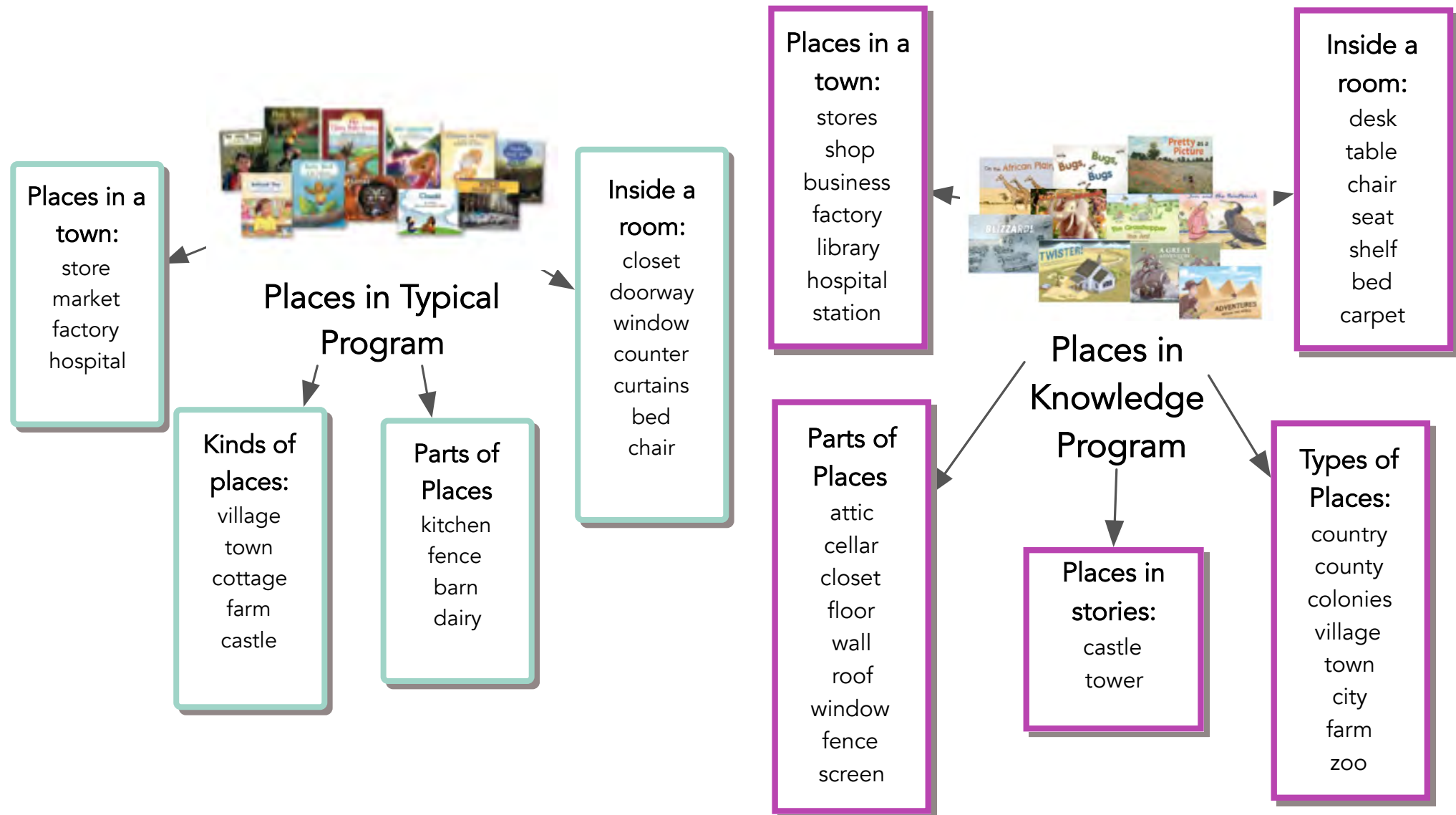


People in Knowledge Program

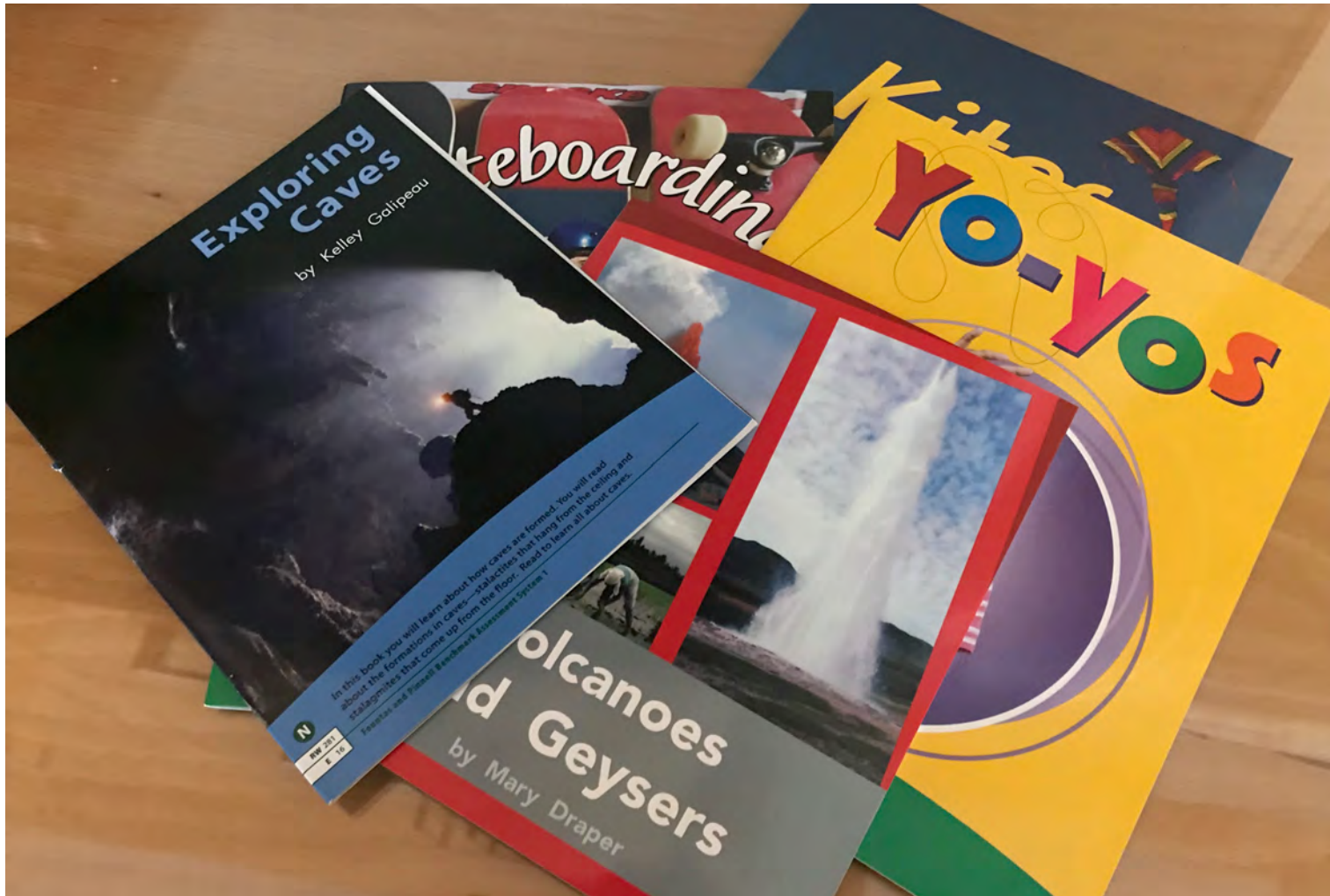
Jobs:
artist
captain
explorers
guards
minister
photographer
policeman
cowboy
doctors
reporter

Families & Friends:
friend
son
uncle
auntie
guest

Age & Gender:
adults
babies
boy
female
girl
infant
kids
elderly
male
woman
man

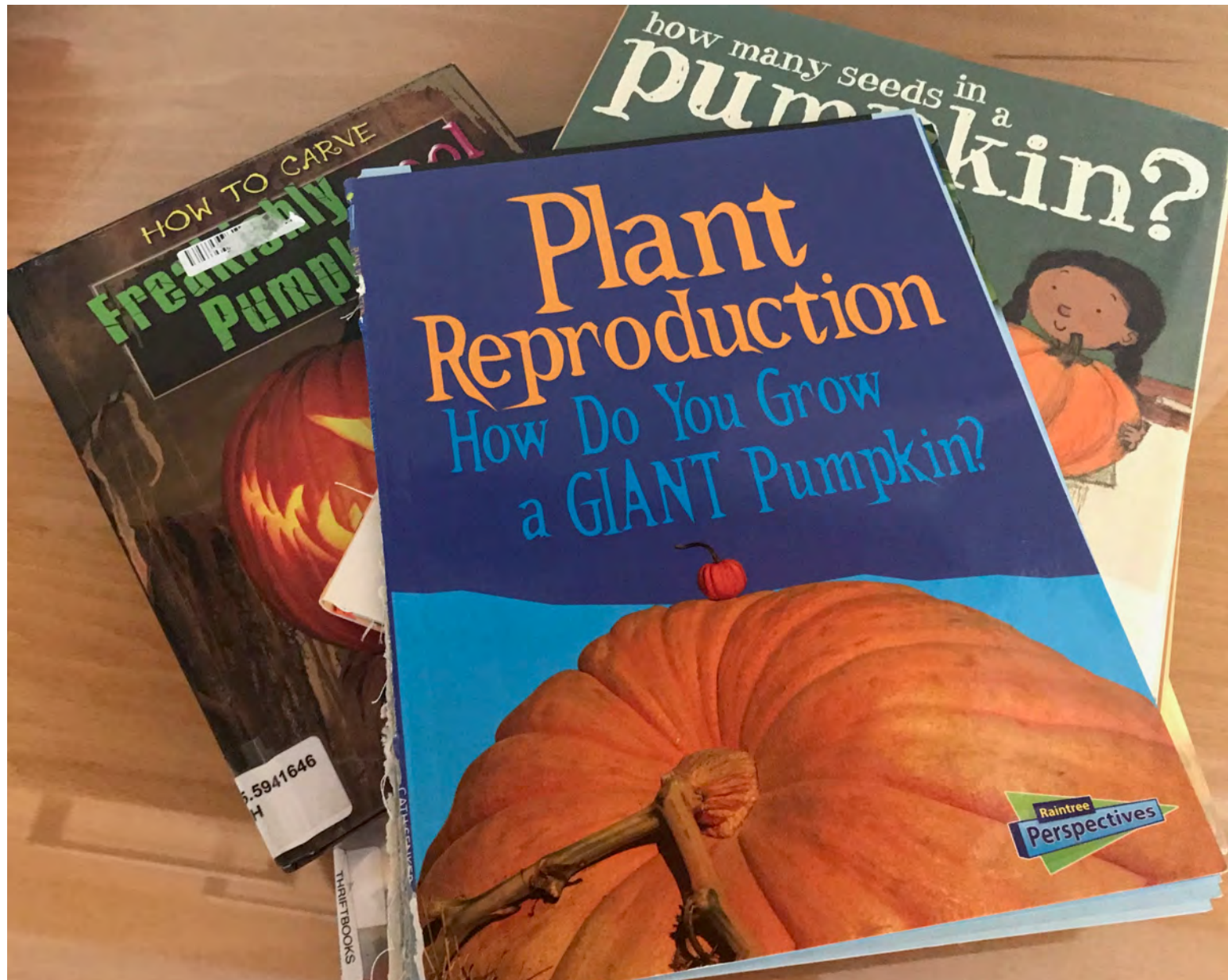


Texts Leveled by Text Complexity [Grade 3]



*Texts from Leveled Literacy Intervention, Heinemann

Texts Selected for Topic & Text Complexity [Grade 3]



Text Complexity	Topic + Text Complexity
anaconda 4	adult 4
arson 3	carving 9
backpack 3	competition 4
chemicals 3	counting 5
competitions 7	create 4
creativity 3	dangerous 3
dormant 3	fertilized 3
double 4	flowers 6
erupted 4	fruits 6
explorers 5	gardeners 6
freestyle 3	giant 15
journey 4	lanterns 6
kakapo 8	meters 3
melted 4	nutrients 4
meters 3	paddles 3
music 6	patch 6
palace 3	perfect 3
potatoes 8	pollination 5
protect 3	pruning 3
safety 5	pumpkins 123
scarf 4	rotten 3
scents 4	taste 3
sculpture 3	transported 3
skateboarding 7	trucks 4
skates 16	varieties 5
<u>snarks</u> 5	vegetables 9
sniffer 6	weighed 5
toothpicks 6	witch 3
trained 4	
tricks 5	
volcanoes 8	
wharf 4	

¹Proper names and words with 4 or fewer letters excluded

Idea	Action	Open-Access Resource
1. English has more words than can be taught.	1. Teach students to expect new words in texts.	1. Vocabulary Triangle
2. A small group of words does the heavy lifting in English.	2. Increase volume of reading	2a. Hold conversations about rare:core ratio in texts 2b. 7 minutes of additional reading daily 2c. Increase magazine reading 2d. Organize texts by topics, not just text complexity
3. Rare words in narrative texts belong to synonym networks; those in informational texts in	3. Teach students prolific synonym networks & organize topics into networks	3. Super Synonym Sets for Stories (S4) Exceptional Expressions in Everyday Events (E4)

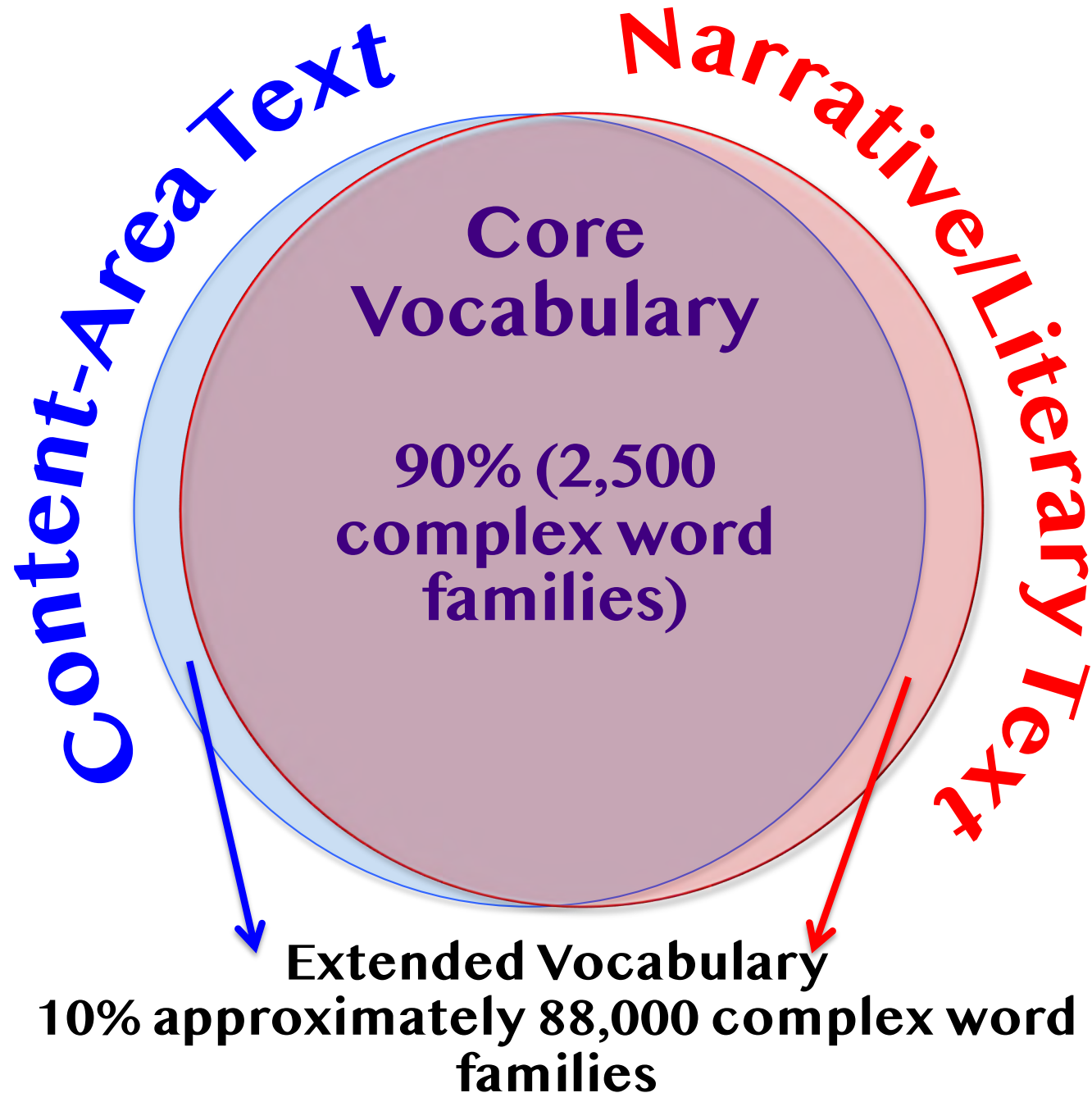
Discussion 3

- 1. How do you teach rare vocabulary in narrative texts? In expository texts?



**Idea 3: Rare words are part
of networks**

The Other 10%: Rare Words in Writing



Narrative Text

Even with eyes protected by the green spectacles, Dorothy and her friends were at first dazzled by the brilliancy of the wonderful City. The streets were lined with beautiful houses all built of green marble and studded everywhere with sparkling emeralds. They walked over a pavement of the same green marble, and where the blocks were joined together were rows of emeralds, set closely, and glittering in the brightness of the sun. The window panes were of green glass; even the sky above the City had a green tint, and the rays of the sun were green.

From *The Wonderful Wizard of Oz* Frank Baum)

(a)
Networks in
narratives
are
synonyms
related to
story
elements.

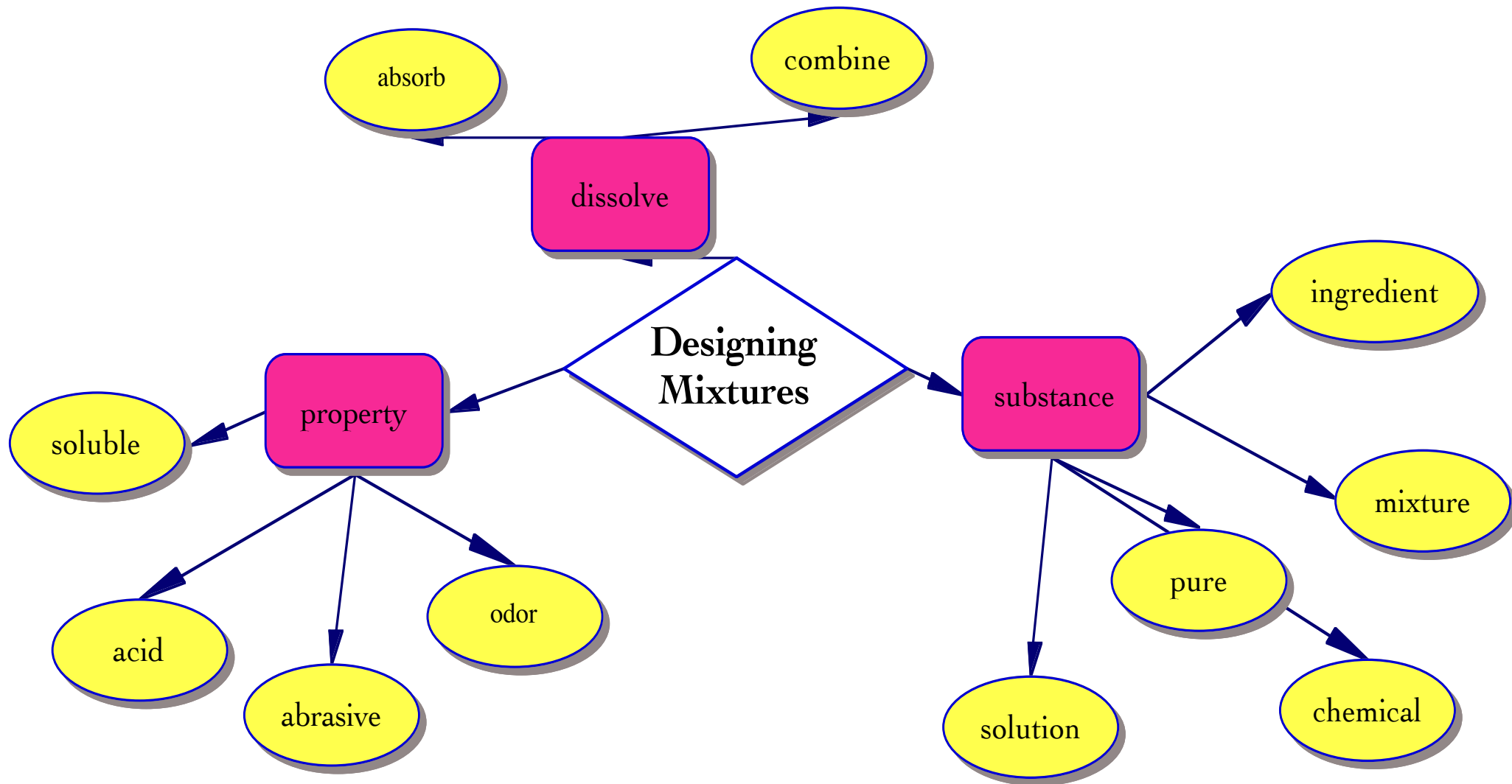
Story Word	Other Possibilities
dazzled	hypnotized awed
brilliancy	effulgence luminosity
glittering	shimmering radiance

(b) The rare words in
informational texts
belong to topical
networks.

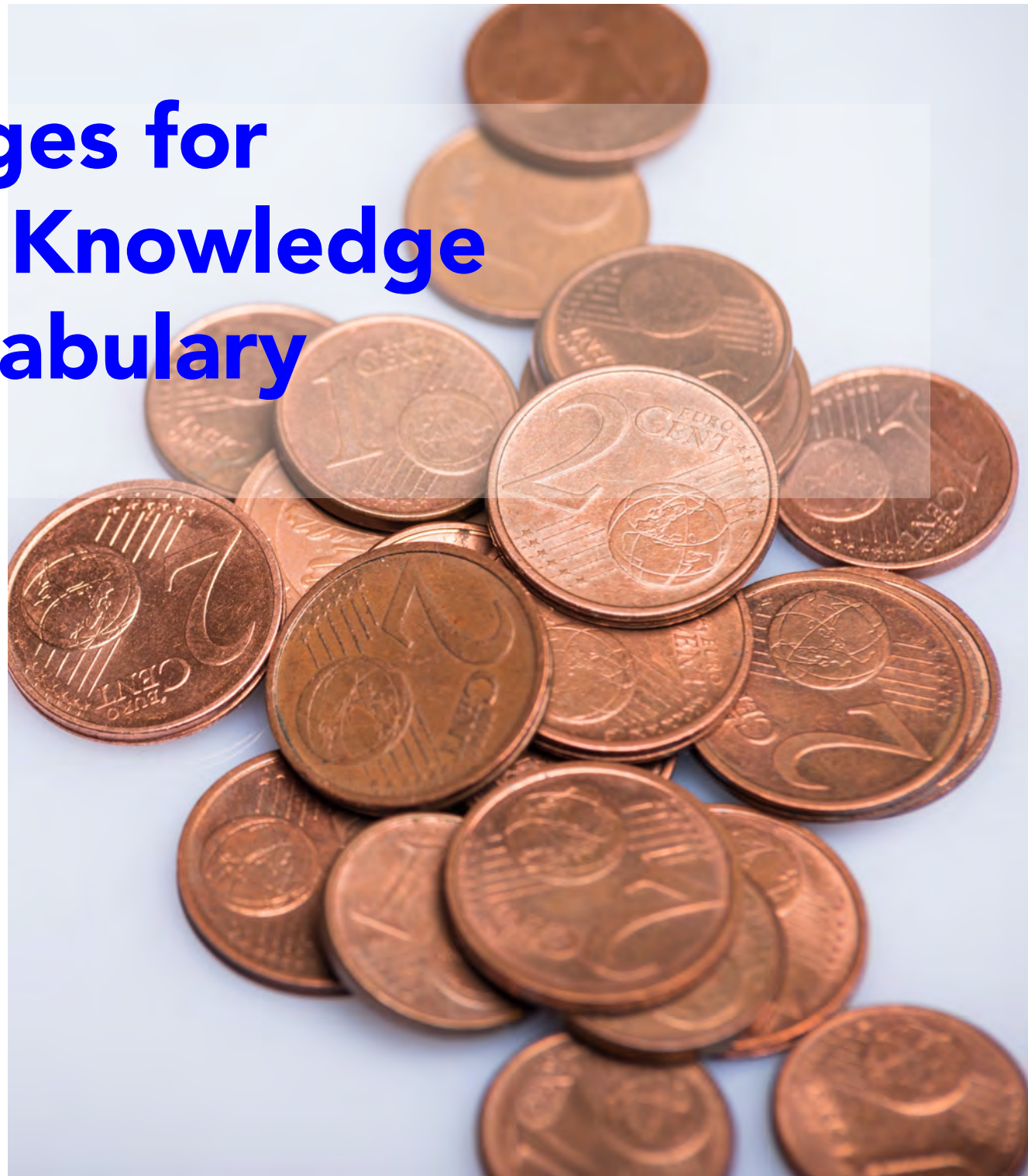
Informational Text

A simple solution is basically two substances that are evenly mixed together. One of them is called the **solute** and the other is the **solvent**. A solute is the substance to be dissolved (sugar). The **solvent** is the one doing the dissolving (water). As a rule of thumb, there is usually more **solvent** than **solute**. The amount of **solute** that can be dissolved by the **solvent** is defined as **solubility**.

An Example of a Topical Network



Small Changes for Supporting Knowledge of Rare Vocabulary





Synonym Networks in Narrative Texts

Prolific Groups of Synonyms

Communication /Internal Processes (verbs)	Emotions (adjectives)	Movement (verbs)	Traits (adjectives)
think	happy	go	funny
argue	sad	send	smart
look	mad	start	brave
guess	hope	stop	selfish
said	fear	stay	shy



Guess as in to give an unsure reply (verb):

- suppose
- reckon
- judge
- gauge
- approximate

Guess as in to give an unsure reply (verb):

- theorize
- estimate
- surmise
- speculate

Guess as in a response that is based on opinion, not fact (noun):

- assumption
- opinion
- conjecture
- speculation
- supposition
- surmise

??
Guess

COMMON PHRASES

- Keep them guessing
- Guess what
- Anyone's guess
- Take a guess
- Educated Guess

SPANISH CONNECTIONS

- theorize / teorizar
- estimate / estimar
- speculate / especular
- conjecture / conjetura

IDIOMS

- Take a stab in the dark
- Wild guess
- Take a gander



Guess





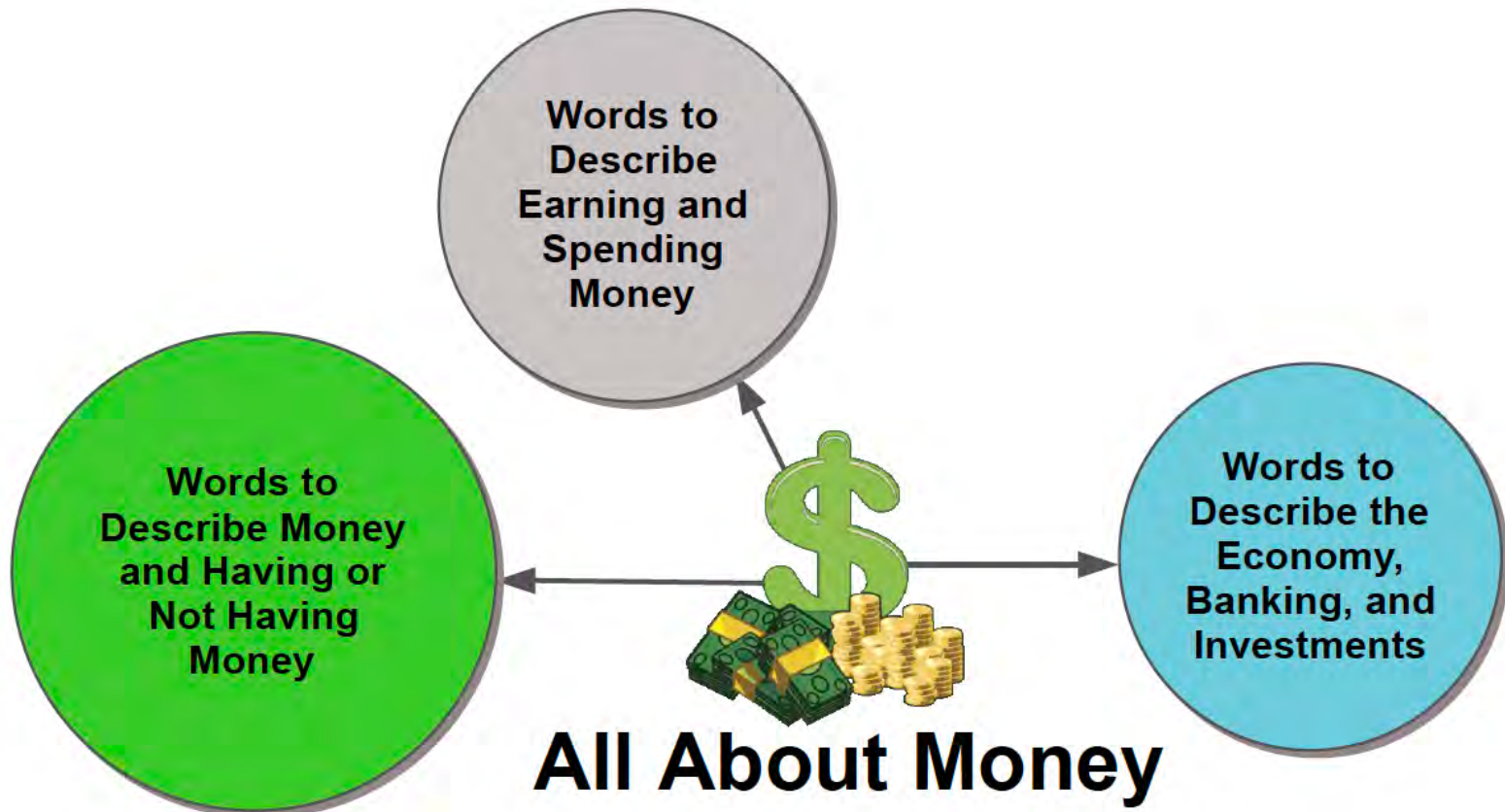
All About Money—

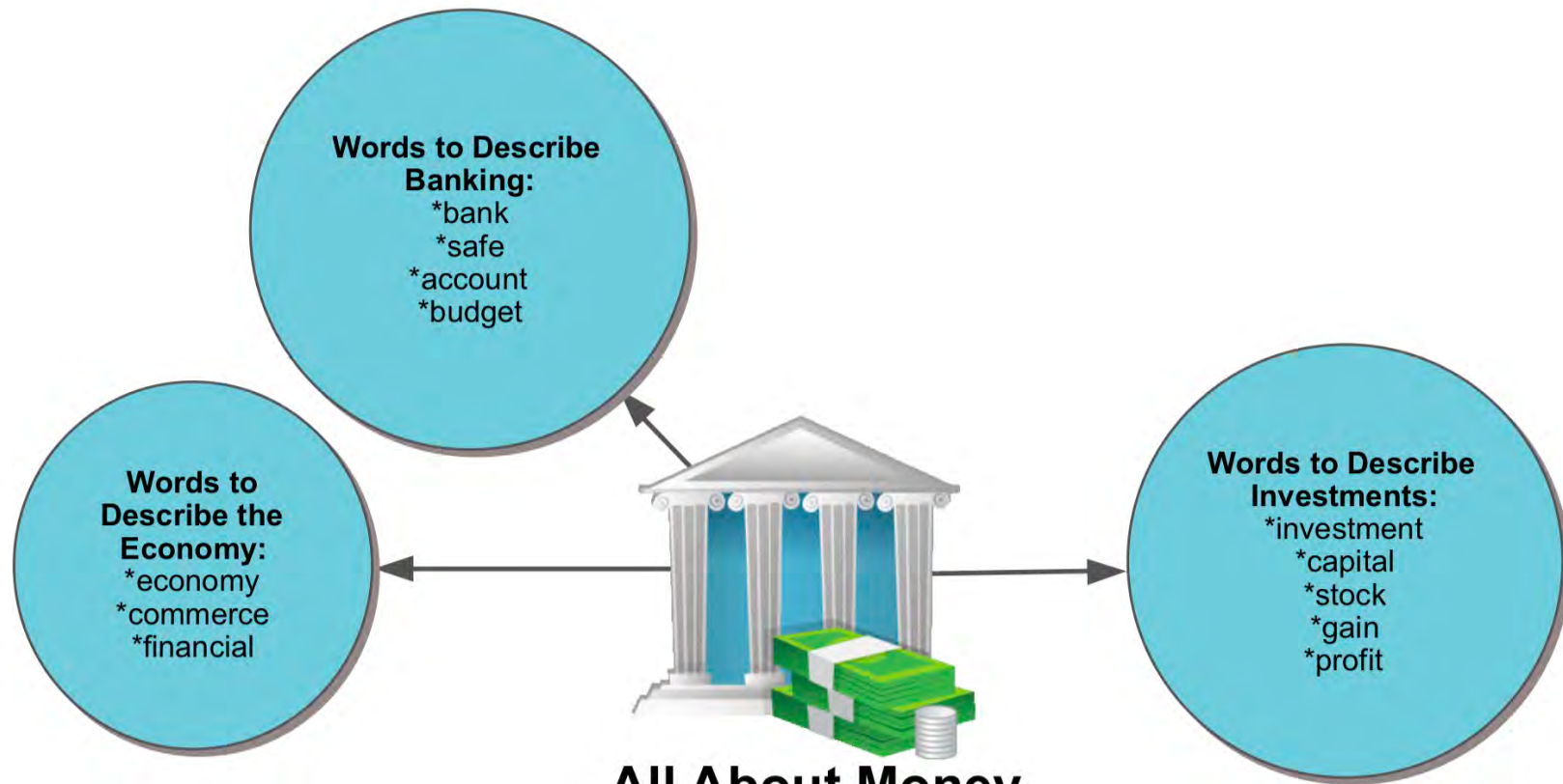
Words to Describe Money and Having
or Not Having Money



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**All About Money—
Words to Describe the Economy, Banking,
and Investments**

commerce

(com·merce)

Commerce describes the buying and selling of goods.



account

(ac·count)

An *account* is an arrangement made with a bank where you may deposit (put in) and withdraw (take out) money.



gain (gain)

A financial *gain* is an increase in money.



profit (prof·it)

Profit is an increase in money after all expenses are subtracted.

capital (cap·i·tal)

Capital is money that is made by using other money.





The Arts— About the Arts



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Elements, Minerals, and Rocks

Elements and Minerals



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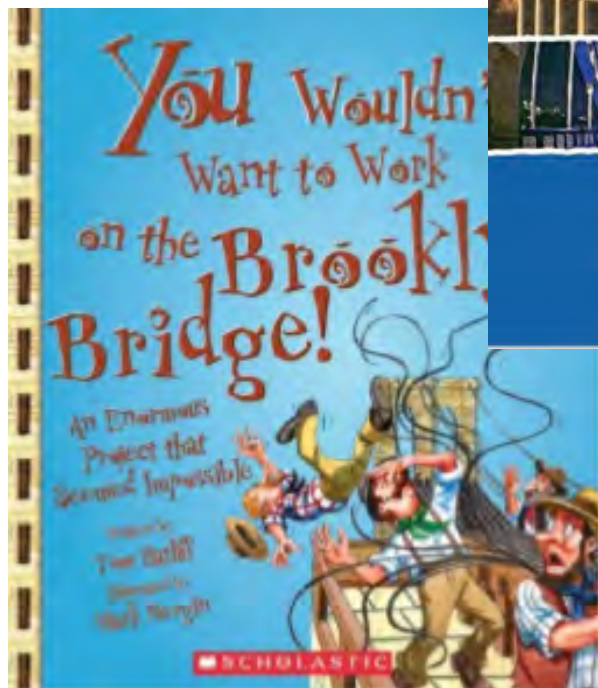
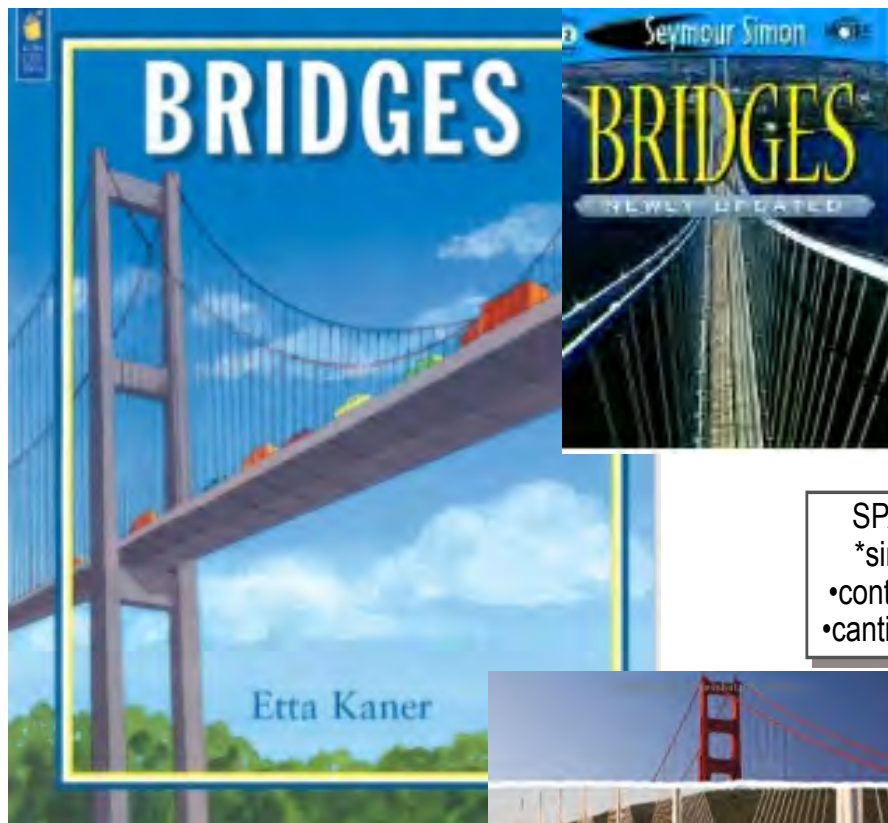
Fashion and Design—

General and Specific Fashion and Design Terms



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SPANS:
 *simple
 •continuous
 •cantilevered

FEATURES
 OF SITES:
 •bedrock
 •tides
 •currents

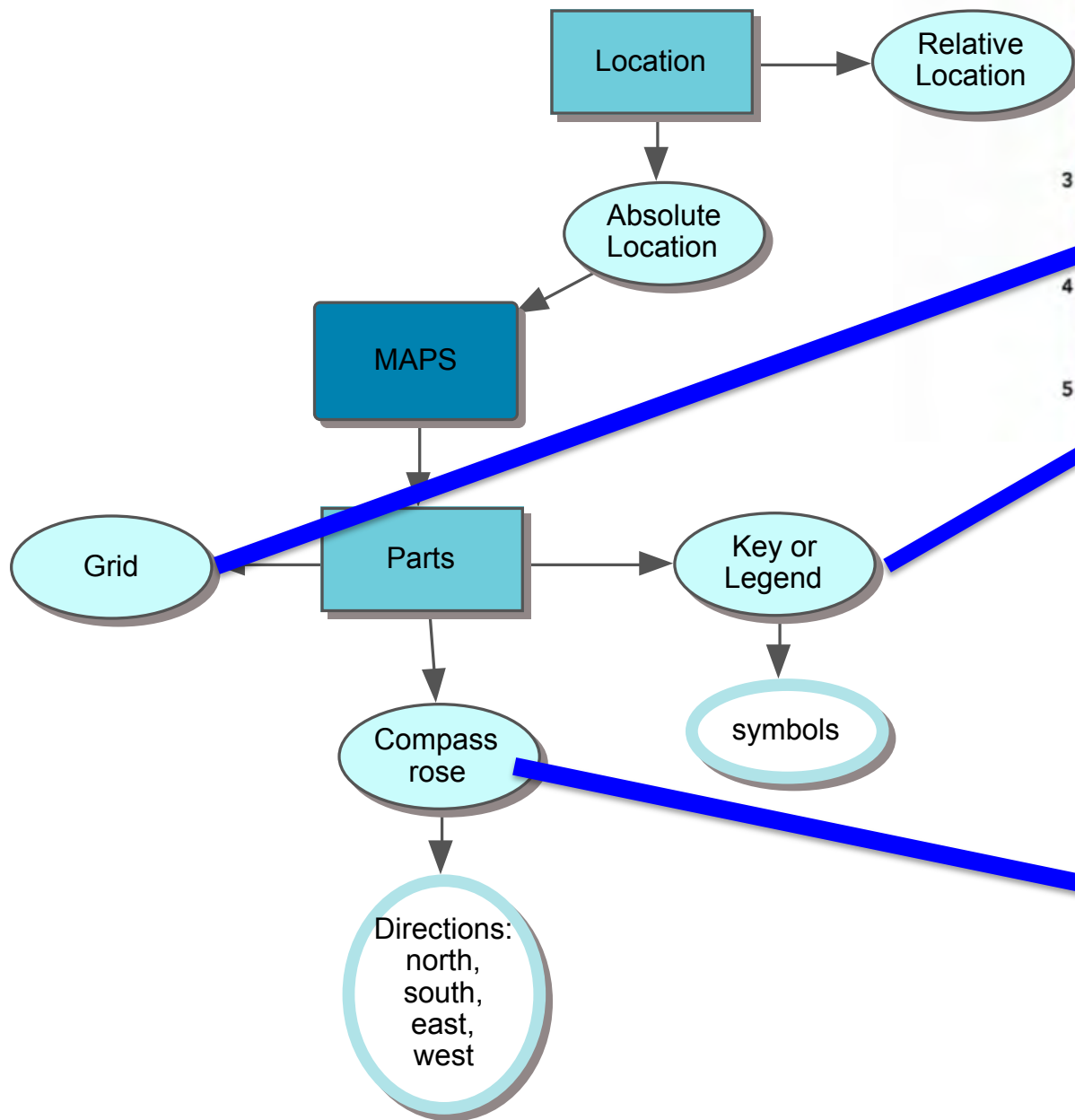
KINDS:
 •beam
 •arch
 •suspension

VARIATIONS:
 •truss
 •bascul/swing
 •semicircular
 •segmental
 arch

BRIDGES

COMPONENTS:
 •pier
 •tower
 •pylon
 •cables
 •girder

LOADS &
 FORCES:
 •compression
 •tension
 •torsion
 •shear forces



Idea	Small Change	Open-Access Resource
1. English has more words than can be taught.	1. Teach students to expect new words in texts.	1. Vocabulary Triangle
2. A small group of words does the heavy lifting in English.	2. Increase volume of reading	2a. Hold conversations about rare:core ratio in texts 2b. 7 minutes of additional reading daily 2c. Increase magazine reading 2d. Organize texts by topics, not just text complexity
3. Rare words in narrative texts belong to synonym networks; those in informational texts in topic networks.	3. Teach students prolific synonym networks & organize topics into networks.	3. Super Synonym Sets for Stories (S4) for narrative texts • Use semantic maps for informational texts, such as those in Word Pictures



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