

BUILDING KNOWLEDGE THROUGH VOCABULARY ACQUISITION

Elfrieda H. Hiebert

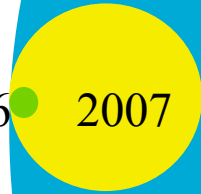
TextProject & University of California, Santa Cruz

Knowledge & Text

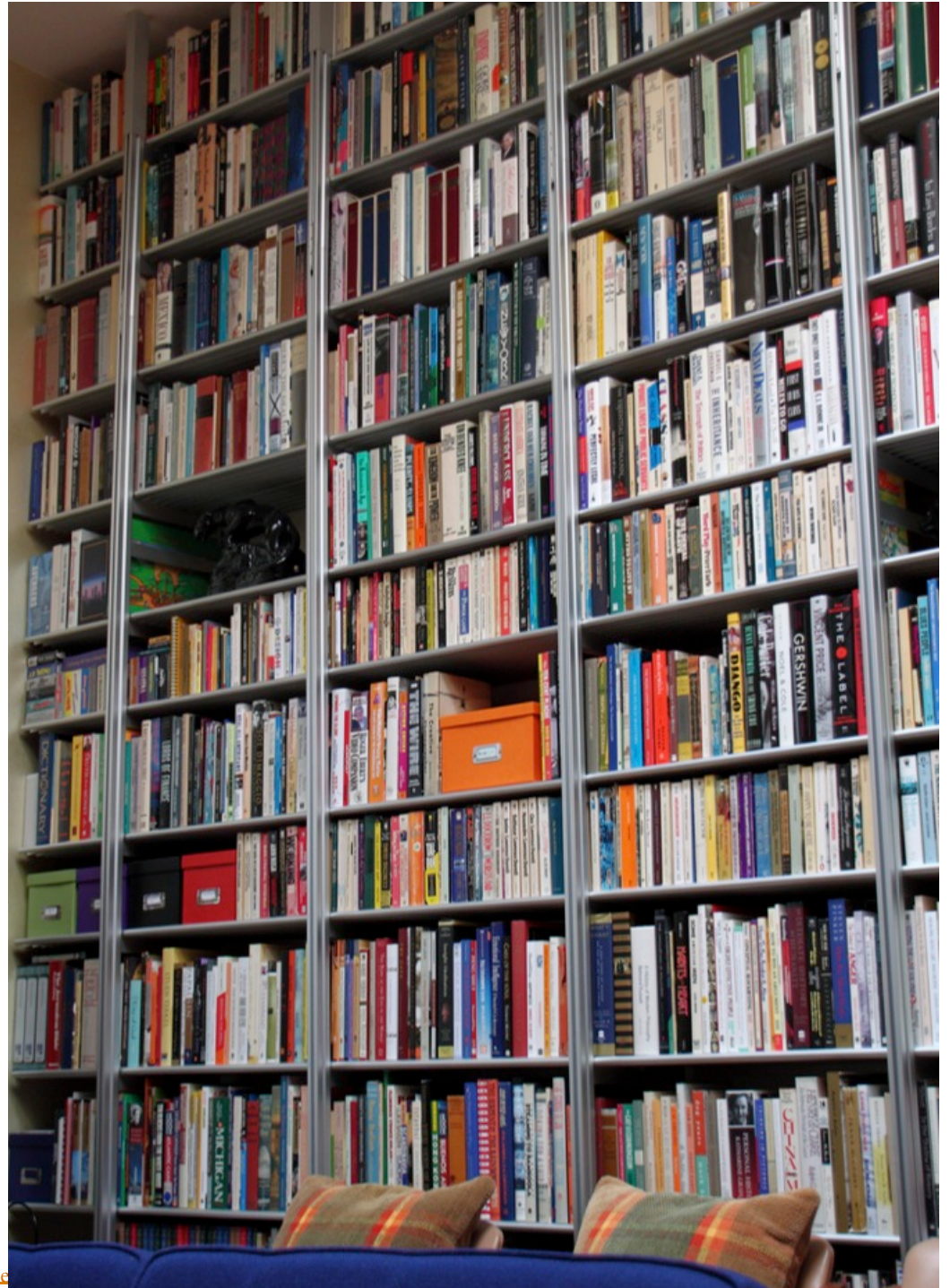
1986

2007

2014



**Knowledge is
“stored” in
texts and...**



**texts typically
have more
rare words
than
conversations
/oral
language.**



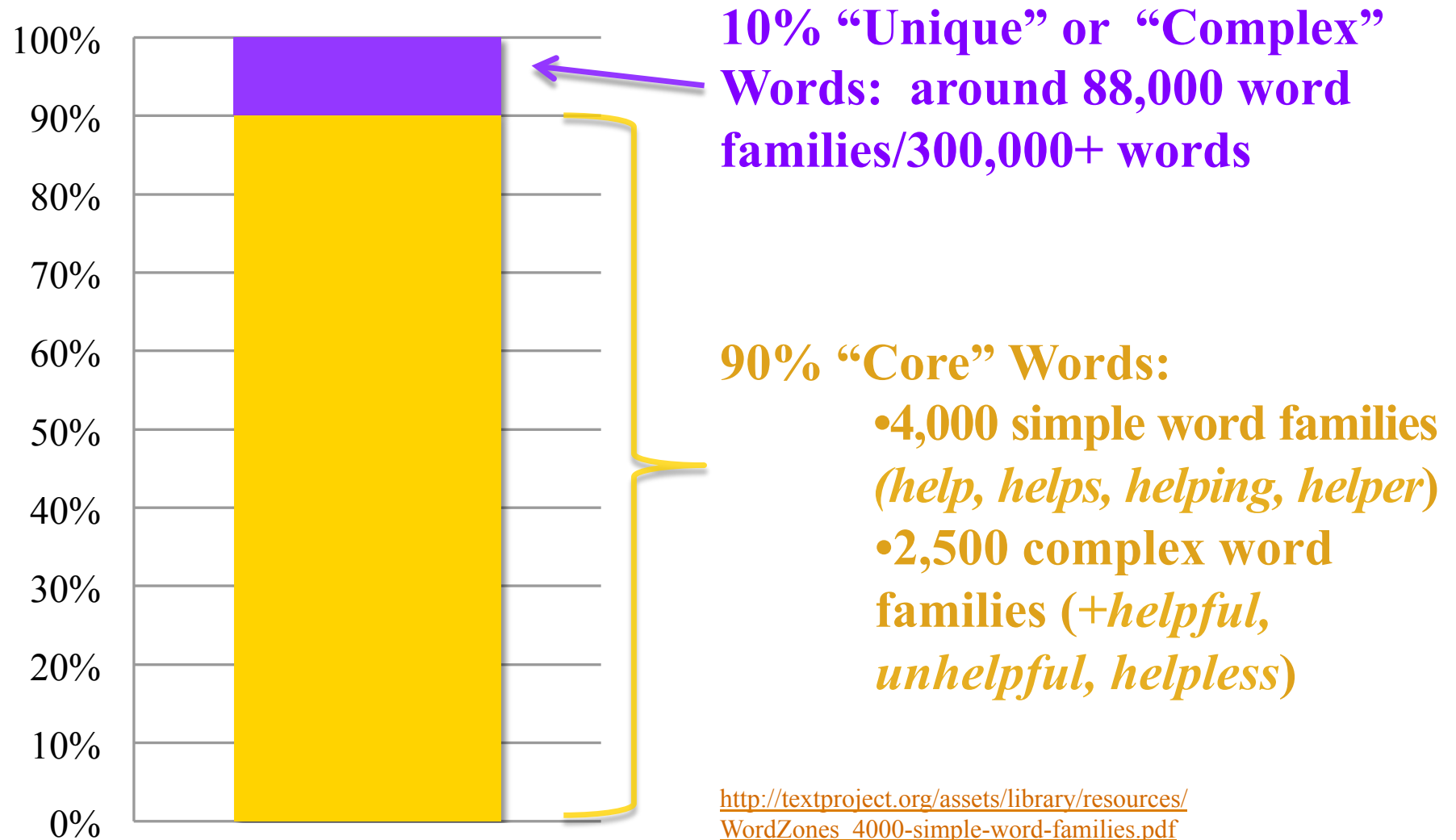


FACTS ABOUT LANGUAGE & READING

Rare words account for about 10% of the words in written language. This 10% represents around 95%+ of all words in English.

Fact 1: English has many rare words.

The distribution of words in written English



Blue crabs are very strong. Their big claws can make a painful pinch. When cornered, the crabs boldly defend themselves. They wave their outstretched claws and are fast and ready to fight. Keith and I had to be very careful to avoid having our fingers pinched.

Crabs are arthropods, a very large group of animals that have an external skeleton and jointed legs.

Spider was a hungry one, he always wanted to eat. Everybody in Ashanti knew about his appetite. He was greedy, too, and always wanted more than his share of things. So people steered clear of Spider.

But one day a stranger came to Spider's habitation out in the back country.

A red sky at night does not usually cause wonder. But on the evening of April 26, 1777, the residents of Ludingtons' Mills were concerned. The crimson glow was in the east, not from the west where the sun was setting. The Ludington family sat at supper, each one glancing now and again toward the eastern window.

Jason heard his mom calling him. Instead of answering her, he slipped deeper into the tall weeds behind his house. He closed his eyes, thinking of what he had done.

He had gotten up that morning in a good mood. Raspberry pancakes were on the table when he walked into the kitchen rubbing his eyes and yawning.

Imagine shivering on a cold winter's night. The tip of your nose tingles in the frosty air. Finally, you climb into bed and find the toasty treat you have been waiting for—your very own hot brick.

If you had lived in colonial days, that would not sound as strange as it does today.

It was a hot Sunday afternoon in Hawarden, a small town in western Iowa. Amanda Clement was sixteen years old. She sat quietly in the grandstand with her mother, but she imagined herself right out there on the baseball diamond with the players. Back home in Hudson, South Dakota, her brother Hank and his friends often asked her to umpire games.

Wide and extensive reading allows for flexibility in understanding nuanced and multiple meanings of known words and exposure to new words.

Fact 2: Reading volume matters.



Alice

Abby

Alex

After one
day of
school (one
penny=
500 words of
reading



After
one
week of
school



After
one
month
of
school



After
one
year of
school



Quarters
= 500
new
words
gained
through
reading



New
words
learned
over 5
years of
school



NAEP 2013 Grade 4 (Reading)



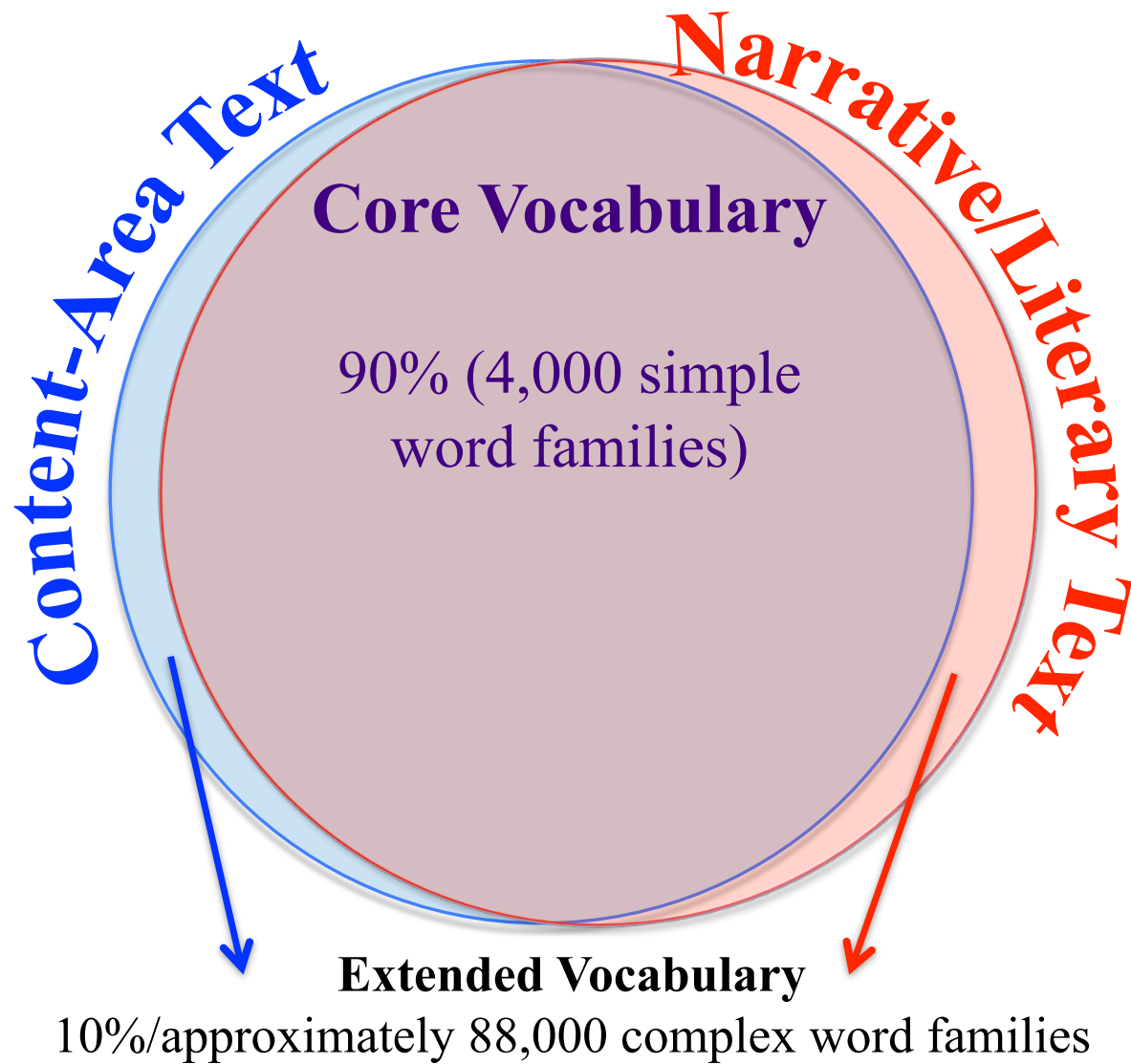
Below Basic Basic Advanced/Proficient

Words represent interrelated concepts. Words are part of idea networks and families of similar words.

Fact 3: Words are in networks & families.

The month of picking heartberries went by. Little Pinch jumped off a low branch and made a huge gash just over his eye. Blood came pouring down and he seemed both proud of himself and sorry for himself, and he selfishly hogged attention for his injury to the point where Omakayas could hardly bear it. Mama was constantly preoccupied with him. Of course, that left Neewo more and more to Omakayas's hands, and she didn't mind that.

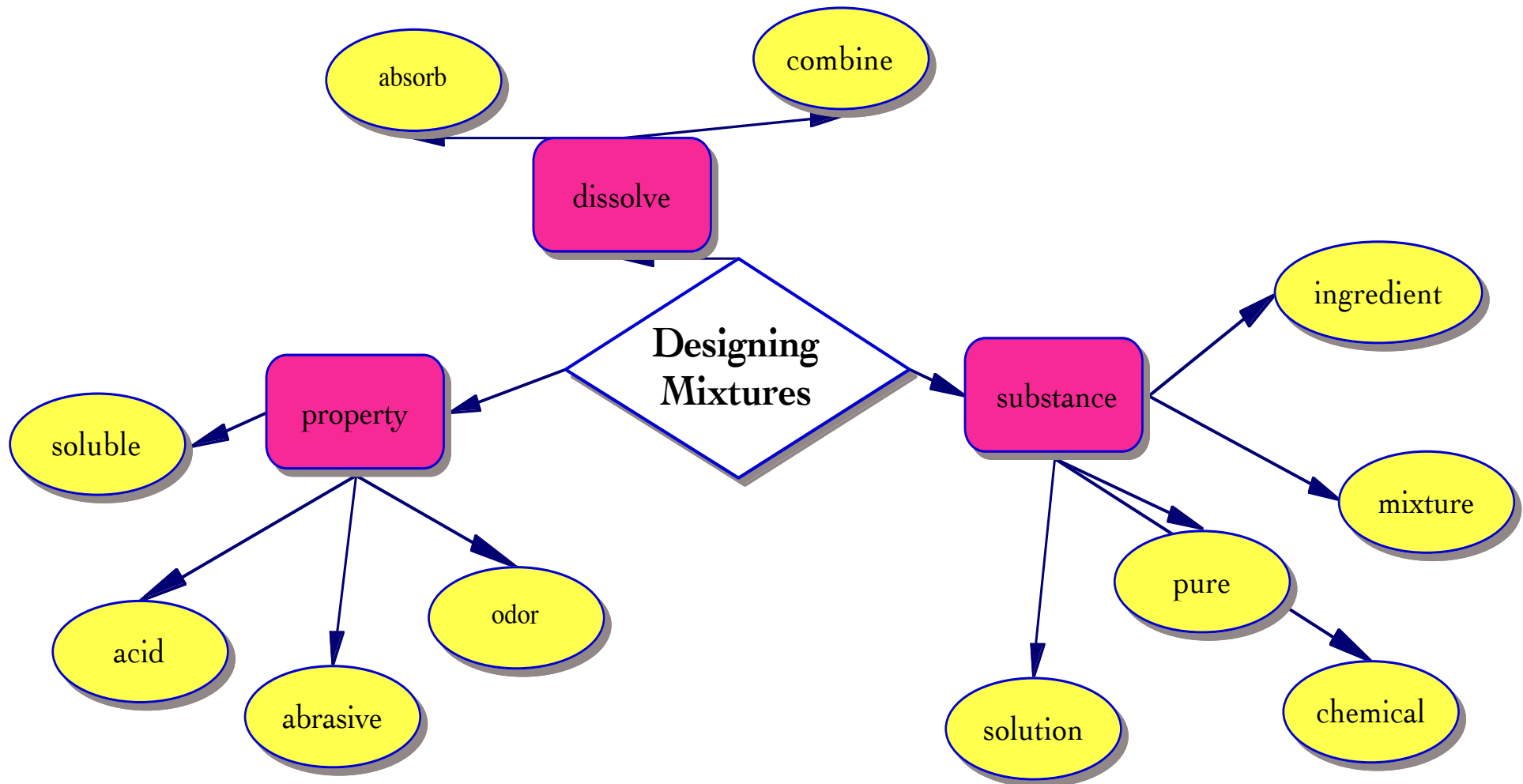
Embryological studies show that each batch of four is the result of a single fertilized egg, which divides twice. Each of the four resulting cells develops into a miniature armadillo which is born in early spring some six months after the adults have mated. All members of a young brood are of the same sex. Young armadillos have their shell covering complete, but it remains soft until they become adults, thus allowing for growth.



The networks in narrative texts are synonyms related to story elements such as traits & emotions.

Story Word	Beyond Story
amazed	enchanted enthralled spellbound captivated transfixed
fascinated	
marveled	
baffled	confused mystified perplexed confounded
bewildered	
stumped	

The networks in informational texts are topical.



Words are part of *morphological families*.

- relate
- related
- relates
- relating
- relative
- relatable
- relation(s)
- relatedness
- relationship
- interrelated
- interrelation
- correlate
- correlation
- interrelationship
- age-related

Knowledge about an array of topics and themes underlies proficient comprehension.

Fact 4: Knowledge predicts comprehension.

Correlation between Background Knowledge & Comprehension = .94

Reading for Understanding Network Study of Comprehension in Grades 7-12

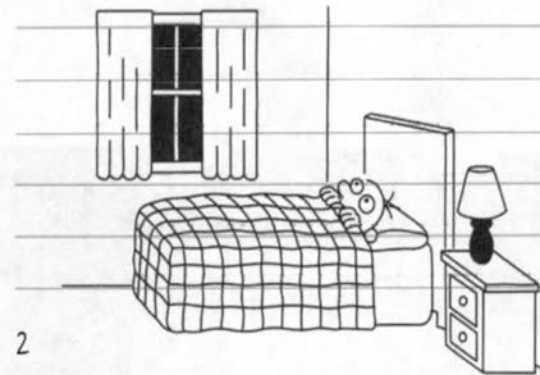
Slide is from the presentation of David Francis (April 19, 2013). CCSS Assessments and Students with Disabilities and English Language Learners. Plenary session at Institute on Assessment in the Era of the Common Core State Standards, International Reading Association.

Most widely read
book by 4th graders
on Renaissance
learning's
Accelerated Reader
in 2013 (boys & girls)
[*Diary of a Wimpy Kid: Cabin Fever*]

Kids whose families don't celebrate Christmas are lucky because they don't have to stress out whenever they do something wrong at this time of year. In fact, I have a few friends in that category who I think act a little extra jerky around now just because they can.



The thing that REALLY makes me nervous is this whole Santa issue. The fact that he can see you when you're sleeping and knows when you're awake really creeps me out. So I've started wearing sweatpants to bed because I really don't need Santa seeing me in my underwear.



A hungry falcon soars high above Earth. Its sharp eyes scan the ground. Suddenly, it spies something moving in the grass. The falcon dives toward it.

Far below, a gray field mouse scurries through the grass. Its dark, beady eyes search constantly for danger. With eyes on either side of its head, the mouse can see almost everything around it.

Will the mouse see the falcon in time to escape? Or, will the speedy falcon catch the prey it spied from far above? Whatever happens, one thing is clear: Without eyes, neither animal has a good chance.

Why? Eyes help many animals make sense of the world around them and survive. Eyes can guide the falcon to dinner or help the mouse see a perfect place to hide.

Animal eyes come in many different shapes, sizes, colors, and even numbers. Yet they do the same job. They all catch light. With help from the brain, eyes turn light into sight.

Eyes work in the same way for people. Look at this page. You may think you see words and pictures. Believe it or not, you don't. All you see is light bouncing off the page. How is this possible? The secret is in the rules of light.

Light is a form of energy, like heat or sound. It can come from a natural source, like the sun, or artificial sources, like a lamp or a flashlight.

Common Core: Seeing Eye to Eye (Grs. 4-5 Informational



Common Core: Grs. 4-5 Narrative

'Please would you tell me,' said Alice, a little timidly, for she was not quite sure whether it was good manners for her to speak first, 'why your cat grins like that?'

'It's a Cheshire cat,' said the Duchess, 'and that's why. Pig!'

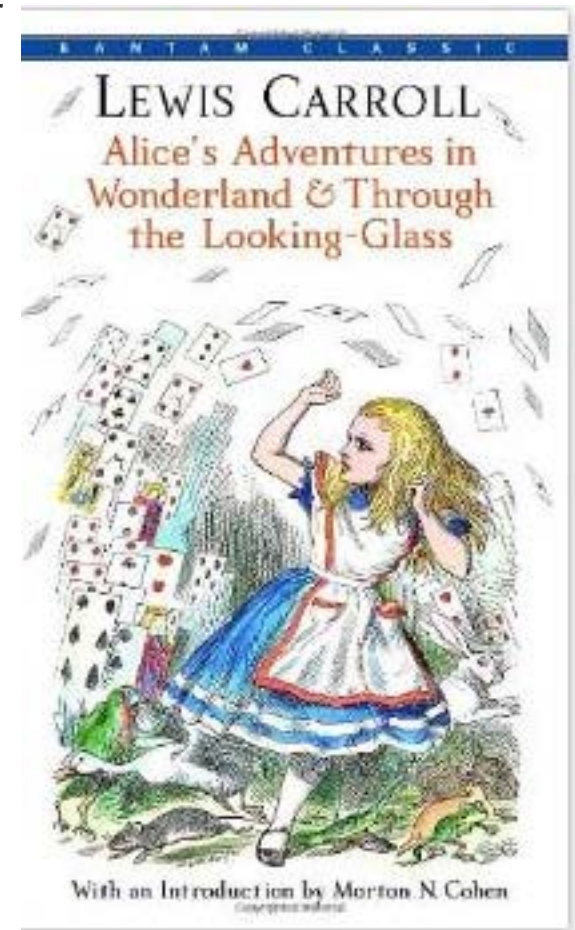
She said the last word with such sudden violence that Alice quite jumped; but she saw in another moment that it was addressed to the baby, and not to her, so she took courage, and went on again:-

'I didn't know that Cheshire cats always grinned; in fact, I didn't know that cats COULD grin.'

'They all can,' said the Duchess; 'and most of 'em do.'

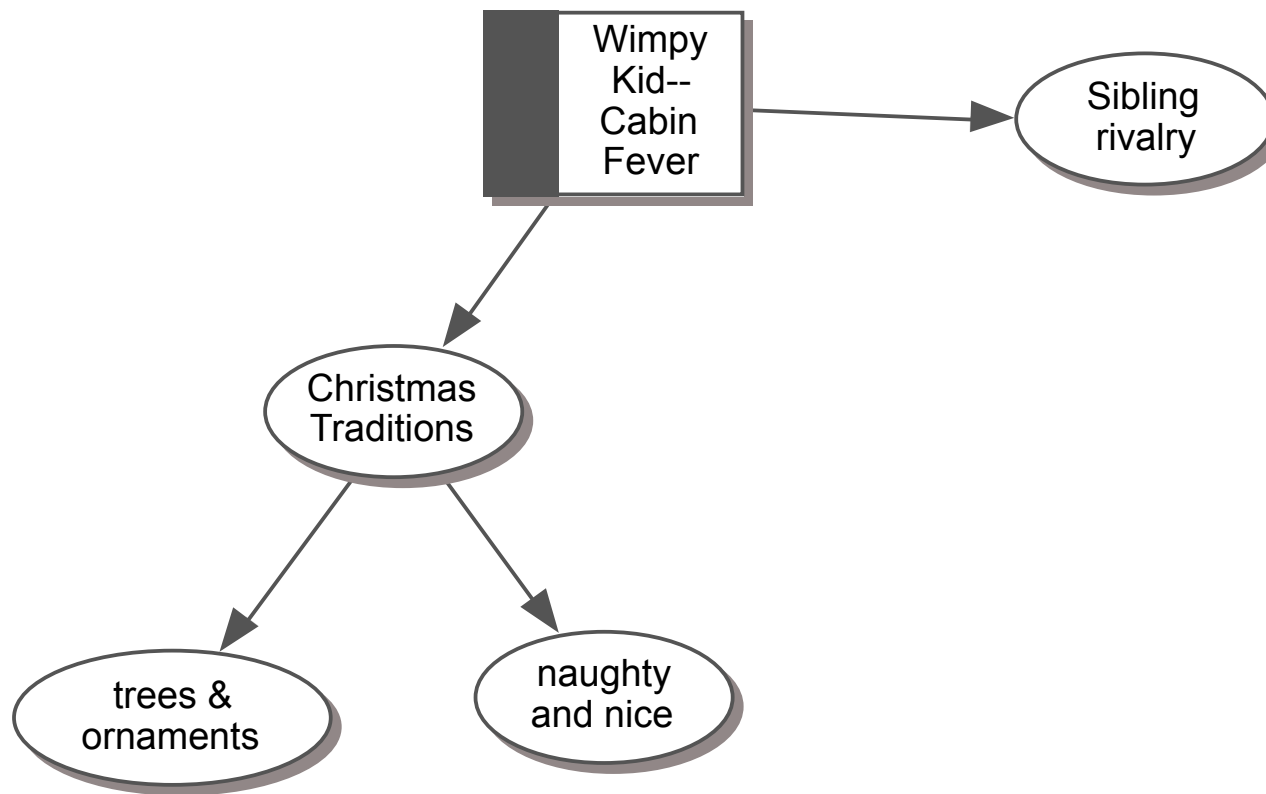
'I don't know of any that do,' Alice said very politely, feeling quite pleased to have got into a conversation.

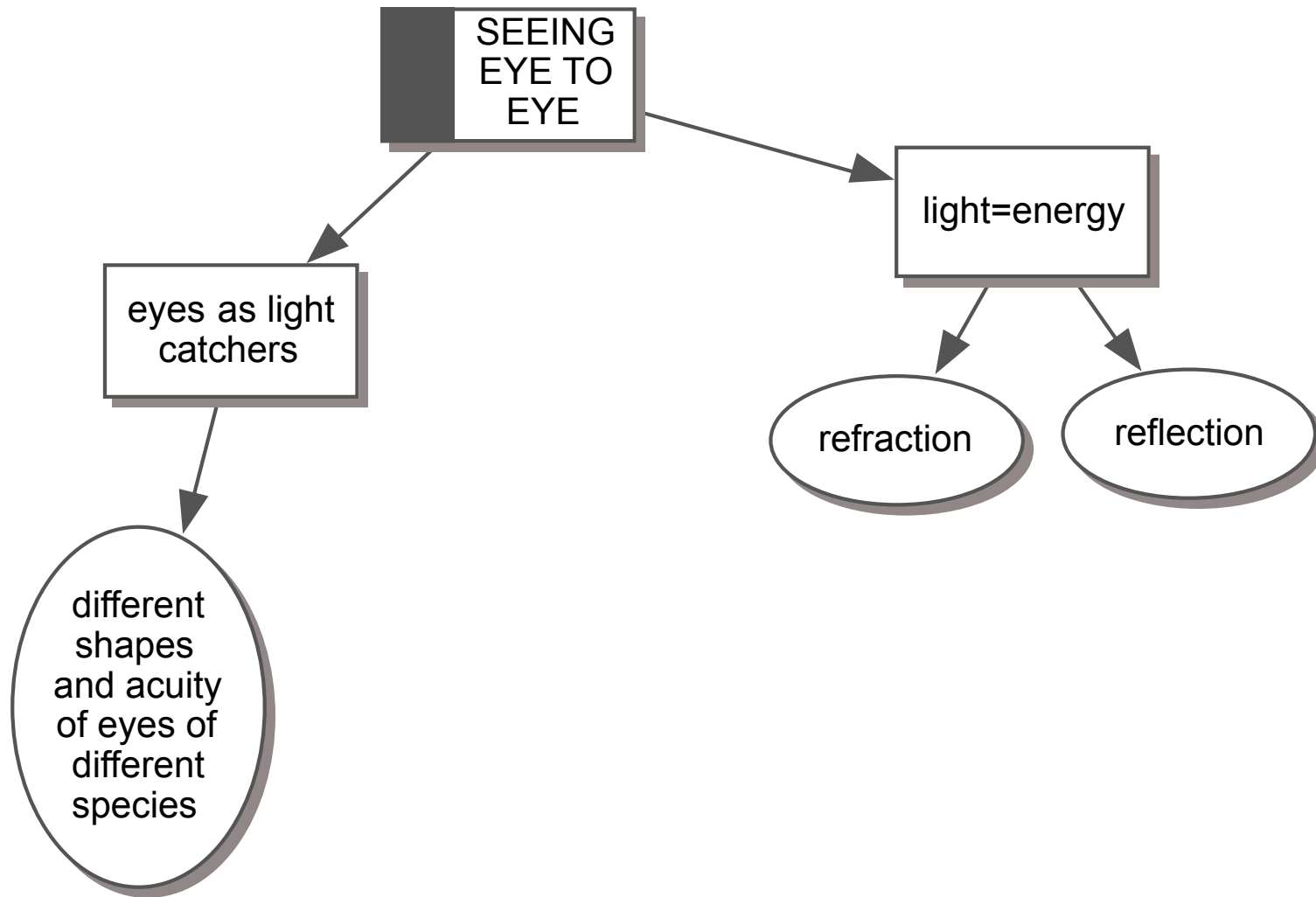
'You don't know much,' said the Duchess; 'and that's a fact.'

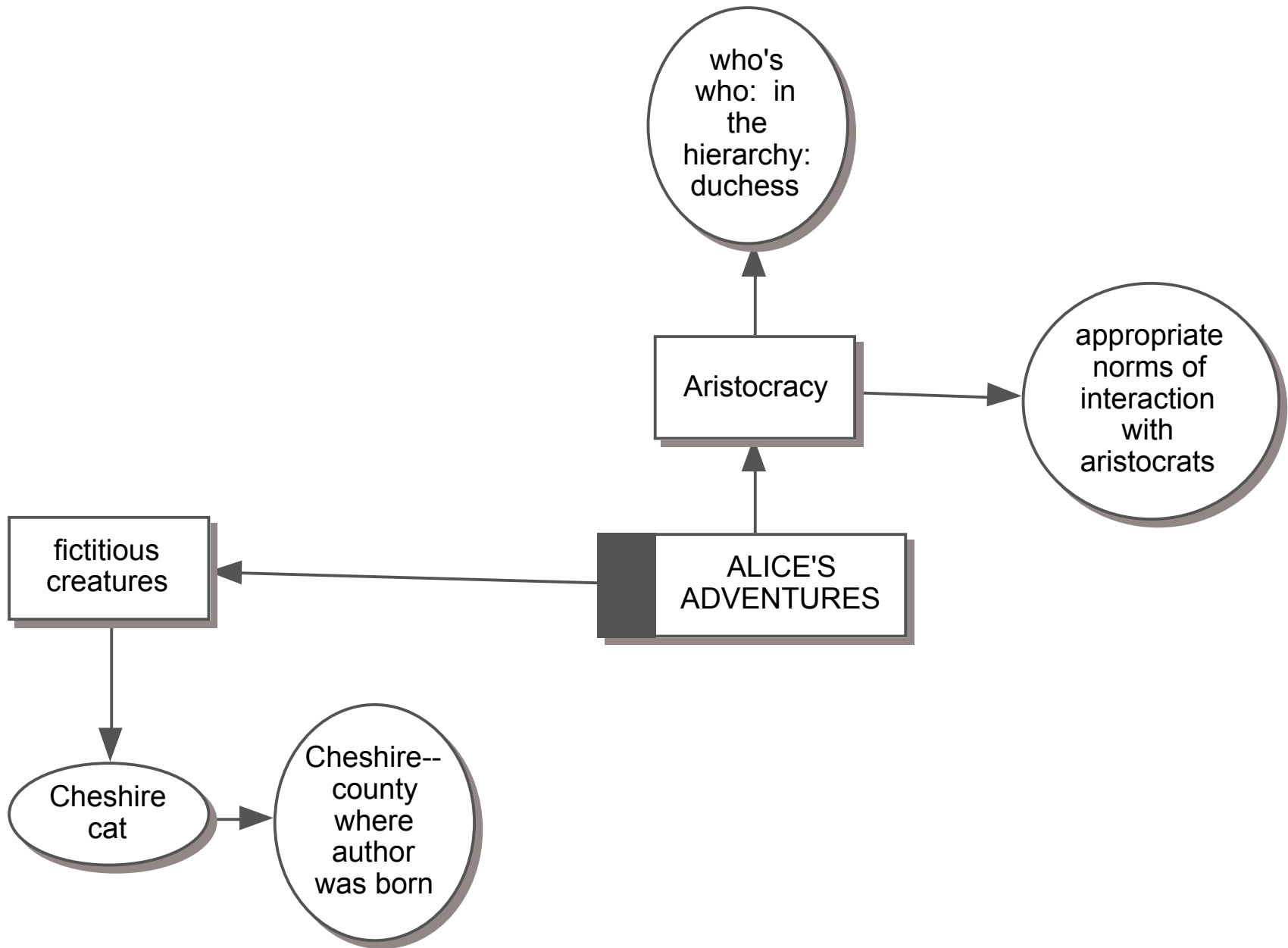


Text	Lexile
Diary of a Wimpy Kid: Cabin Fever	1060
Alice's Adventures in Wonderland	940
Seeing Eye to Eye	550

What knowledge of the world is needed?





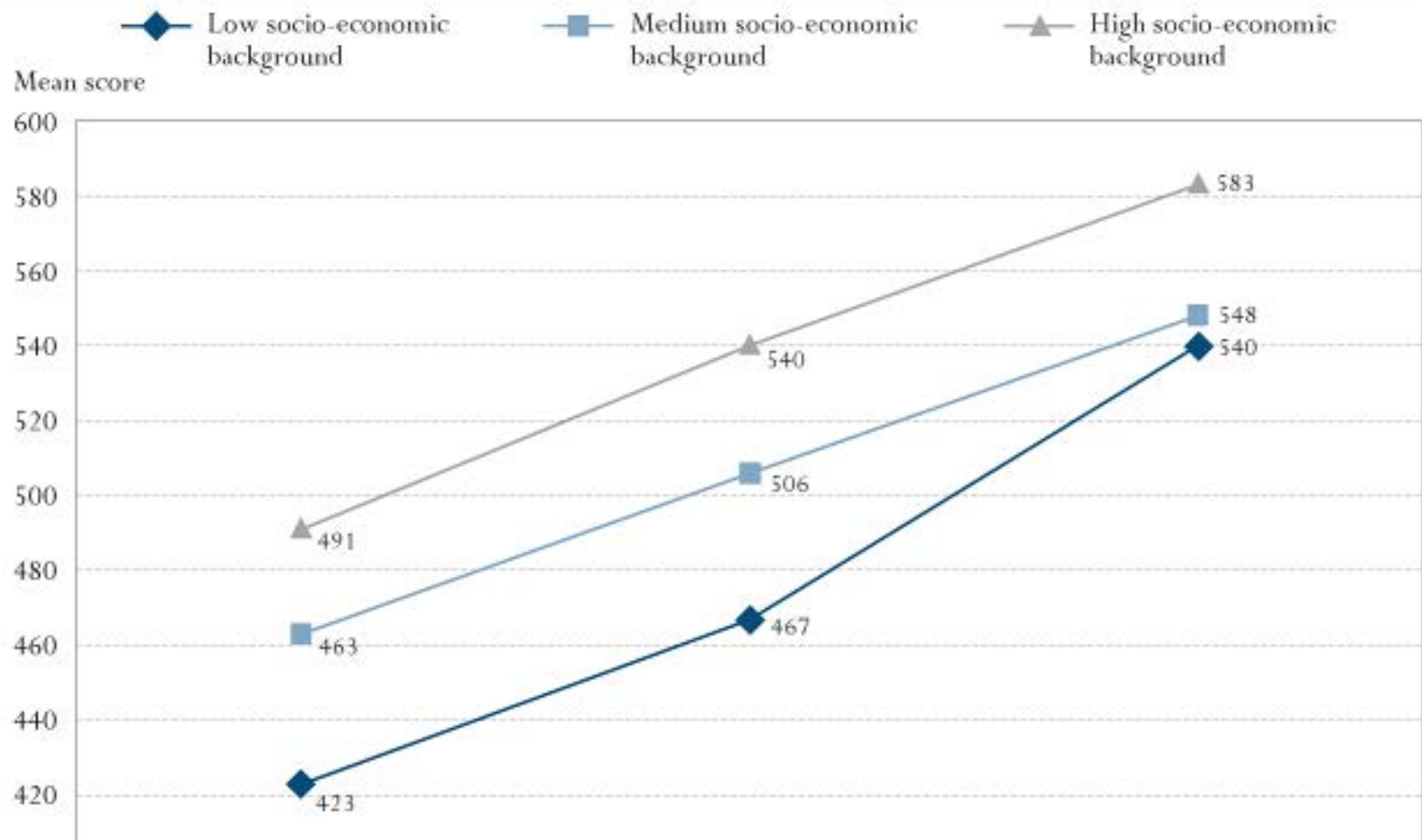


- Engaged and proficient reading builds on the interests and purposes of readers.

Fact 5: Engagement matters

- Ninth graders' engagement in reading was assessed in 32 countries:
 - Diversity of reading: frequency with which students reported reading six types of texts—magazines, comics, fiction books, nonfiction, e-mail, webpages
 - Frequency of leisure reading
 - Attitude toward reading—agreement with statements such as “I read only if I have to”
 - American 9th graders placed 20th among the 32 participating countries on engagement in reading & 24th in the proportion who were identified as diversified readers of books
- Engagement predicted reading achievement.

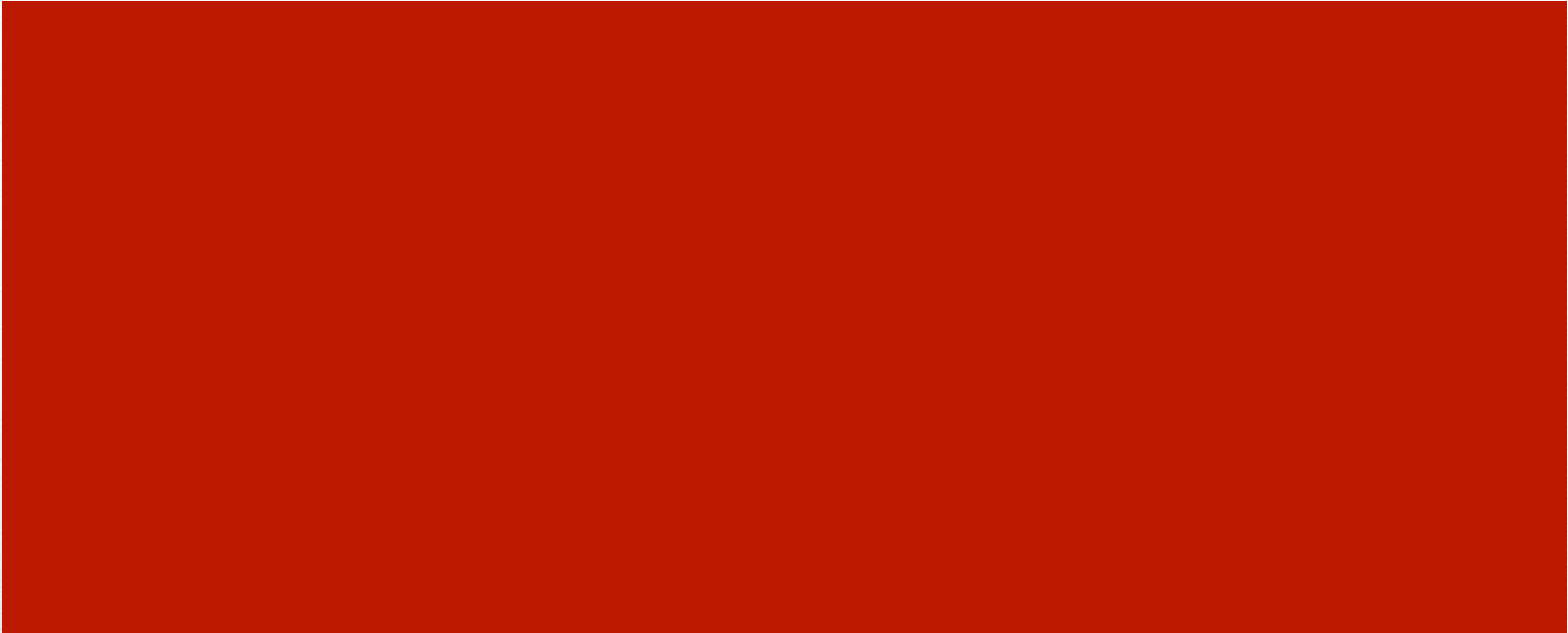
Program for International Student Assessment (PISA, 2000)



Program for International Student
Assessment (PISA, 2000)

- Redesign of the tasks in classrooms can increase student engagement (and subsequently student achievement).
 - Choice
 - Importance
 - Collaboration
 - Competence

Guthrie, J. T. & Klauda, S.L. (2014). Effects of classroom practices on reading comprehension, engagement, and motivations for adolescents. *Reading Research Quarterly*, 49(4), 387-416.



INSTRUCTIONAL ACTIONS

"Zlateh the Goat" Vocabulary Words

Blanketed	Thickly covered
Blizzard	Heavy snowstorm
Cuddled	Hold someone closely in your arms
Dense	Crowded or thick
Experienced	Lived through something
Flakes	Thin, small pieces of something
Mighty	Having great strength or force
Mild	Not too harsh
Accustomed	Used to something
Bleating	Crying by a goat or a sheep
Consisted	Made up of
Frequently	often
Hesitation	To pause before doing something
Regained	Got back; recovered
Resist	Refused to accept; go against
Satisfaction	Feeling of being content
Confirm	Support or show to be correct
Involve	To include
Influence	Sway or affect in some other way
Investigate	To examine thoroughly

- Teach students to anticipate that complex texts will have many new words *and* that their generative word knowledge will assist them in figuring out new words.

Open Access Resources:

- Talking Points for Teachers
- English Word Pyramid

Action 1: TEACH STUDENTS TO EXPECT RARE WORDS.

A yellow speech bubble with a tail pointing towards the top right, containing the text "Talking Points".

Talking
Points

A red speech bubble with a tail pointing towards the top right, containing the text "For Teachers".

For
Teachers

Talking Points for Teachers: New Words in New 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?

- Take a portion of the text (25 or 50 words is enough). Use a highlighter to mark the words in the 1,000-2,000 most-frequent words (List of 4,000 simple word families at:
<http://textproject.org/classroom-materials/lists-and-forms/lists/word-zones-for-5-586-most-frequent-words/>)
- Mark the words that are potentially challenging with a different colored highlighter.

An example of a snippet of text for a board/projection is the following, which comes from a PARCC sample assessment for Grade 7

[http://www.parcconline.org/samples/english-language-artsliteracy/grade-7-reading-informational-text-\(Amelia-Earhart-2\)](http://www.parcconline.org/samples/english-language-artsliteracy/grade-7-reading-informational-text-(Amelia-Earhart-2))

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.

What?

Here are some of the talking points for a conversation between teachers and middle-school students about new vocabulary in complex texts:

- *"One of your goals as middle schoolers is to understand that any new text likely has words that you haven't seen before."*
- *"This is a text from one of the sample assessments for the new state test. This text might look like it is hard and it may even be on the first read. But I've studied the text and I know that all of you know most of the words. Even most of the words that you don't know (point to rusty and stunt) can be figured out with the word skills you have."*
- *"Also remember that words that are capitalized inside sentences are usually names. The strategy with names is to do the best you can, knowing that names are often pronounced in unusual ways because they may come from different languages. In this case, the person's last name is one that you can figure out with your knowledge of words (demonstrate with Earhart)."*
- *"That leaves two words that are multisyllabic in the text and that you might not be able to read (point to exhibition and aviation). I want you to read this paragraph and see if you can figure out these words."*

English Word Pyramid

Greek/Latin
Specialized words
used mostly in
Science/ Social Studies

**New Words through
compounding
of “equal” word parts:**
thermosphere, geopolitical

Romance
Most literary and academic words
New Words through derivations:
frigidity, frigidness, refrigerator

Anglo-Saxon
Common, everyday, down-to-earth words
New Words through compounding:
cold-blooded, cold-natured, cold-drink, cold-running

- Increase the amount that students read texts and ensure that texts give opportunities to increase exposure to core vocabulary (i.e., 2,500 complex word families) as well as new rare vocabulary.

Open-Access Resource: *FYI for Kids & Talking Points for Kids*

Action 2: INCREASE VOLUME OF READING.

Bird Nests

volume 1
issue 1



Most birds build nests, but all nests are not alike. The most common bird nest is the kind made by robins. Robins build nests that look like cups. They make a frame of twigs and sticks and cover it with mud. When this is done, robins line their nest with fine moss, feathers, and hair they find on the ground.

Barn swallows build nests of mud.

They make them in barns, close to the roof where it is safe. Sometimes several swallows build nests near one another.

Some birds build their nests in unusual ways. All birds use their beaks to help make their nests, but Tailorbirds use their beak as a needle to sew leaves together. Tailorbirds use threads they gather from the cotton in cotton plants.

Some birds don't build nests at all. Some lay their eggs right on the ground or on a rocky cliff. Auks are birds that lay their eggs on rocky cliffs near the sea.

Auks' eggs are pointed at one end. This shape lets the eggs roll in a circle if another animal tries to move them or if the wind blows hard. Because the eggs can roll in a circle, they do not roll off the cliff.

King penguins also do not build nests. Instead, they tuck their eggs into the folds of skin on their lower belly. The eggs rest on their feet and stay warm in the cold arctic winds.

Some bird species also lay their eggs in the nests of other birds. Cuckoos get other birds to keep their eggs safe and to feed their babies.

Most birds build a new nest each year. Some use the same nest for several years but clean the nest a little each year. Eagles build huge platform nests that they use for several years. However different they are, though, birds build nests that are just right for their families.



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Totem Poles



All over the world, people carve materials into different shapes. They use stone, wood, ice, soap, bone, and other materials. These carved items are sometimes meant to honor people or events. Sometimes they are meant to be works of art. In the northwestern parts of North America, native people use wood to carve totem poles.

A totem pole is more than a work of art, though. It might honor a person or family. It might also tell a story. Many totem poles feature figures that represent a clan, such as animals, birds, and heroes. These figures are placed on top of each other. Sometimes the most important figure is at the bottom of the totem pole. Sometimes it is at the top.

Most totem poles are made from cedar or spruce wood. These woods are used because cedar and spruce trees grow tall and straight. Also, their wood is soft and easy to carve.

Cedar and spruce may be soft compared to other

woods, but carvers still need to be very skilled. Totem poles are usually 40 to 50 feet tall, and they weigh thousands of pounds. Totem poles are also eight to nine times taller than most people.

In the past, totem poles were placed in front of people's homes. The homes were near water, so people would see a family's totem pole when they arrived by canoe. Native Americans erected their totem poles by pulling them upright with ropes.

Today, totem poles on reservations are placed near the road because most people arrive by car. In addition, totem poles are sometimes erected by trucks and other machines. Just as in earlier times, though, people sing and dance to celebrate raising new totem poles.

Native people today continue to carve totem poles. These modern totem poles help others appreciate and honor the people and cultures of Native Americans.



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Putting Two Words Together

volume 3
issue 2



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A lot of sports that people play use balls. In basketball, players try to get a ball through a hoop. In baseball, players use a bat to hit a ball. In football, players throw a ball to get it close to the goal.

There are other words with “ball” that describe things that are round. But they are not balls with which you play a game. Meatballs are not used in any sport. But

they are great with spaghetti.

Eyeballs help in playing sports. But there isn’t a sport called eyeball where teams throw and catch eyeballs. You wouldn’t want to be in a game that uses fireballs. If you would ever see a fireball, you should get as far away as fast as you can. Then call 911 right away. You should also watch out if a cannonball is going to be fired. It is round but you don’t want to play with a cannonball. You especially do not want to catch a cannonball!

There are some words, though, that have ball in them but it has nothing to do with round. Ballpoint pens make

writing a lot easier. It’s easy to see how the “point” got into ballpoint pen. But why the ball? That part is in the name because of the tip of a pen is round. There are also rooms that are called ballrooms. People hold balls in ballrooms but they aren’t the round kind.

Other words with ball have nothing to do with round. In these words, the “ball” part of the word is not even said the same as ball in baseball or meatball. Ballerina is not ball with “erina.” Ballerinas are dancers and the word has nothing to do with ball. A ballot is used by people to vote but it is not round. You don’t even say “ball” when you say the word ballot.

Whenever you see ball as part of a word, look carefully. Usually, the word has something to do with games and sports. But remember eyeballs, fireballs, and cannonballs. These balls may be round but they aren’t used in sports! Ballerina and ballot show that some words with “ball” have nothing to do with being round.



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Standing on Your Own

volume 4
issue 3



When you were born, you could not walk. At first, your parents carried you in their arms. They may have carried you in a backpack. They may have put you in a stroller.

Many baby animals need help moving around, too. But animal parents help their babies in different ways. Some animal babies can stand on their own soon after they are born. Cow and

goat babies struggle to stand up, but then they walk by themselves.

Kangaroo babies move from place to place in their mothers' pouch. A kangaroo's pouch is like a bag, but it is part of the mother's body. The baby kangaroo sleeps and eats in its mother's pouch. When the baby kangaroo is big enough, it climbs out of its mother's pouch and hops on its own.

Anteaters have one baby at a time. After they are born, anteater babies climb onto their mother's back. That's because their mother's claws are so sharp, she can't

pick them up. A baby anteater stays on its mother's back for six to nine months.

Unlike most spiders, wolf spiders don't leave their eggs to hatch on their own. Instead, wolf spiders carry their egg sac until their babies hatch. Then the baby spiders crawl onto their mother's back, where they hold on until they are ready to travel on their own.

Like most spiders, most fish leave their eggs to hatch on their own. Cichlids are different. Mother cichlids watch over their eggs. Sometimes, they hold their eggs in their mouth. When the eggs hatch, the baby cichlids stay inside their mother's mouth until they're ready to swim on their own.

Your parents probably helped you move around in many of the ways these animals' parents did. The only way your parents did not carry you around was like the baby cichlid's mother. They didn't carry you inside their mouth!



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A Birthday Wish: Rachel Beckwith

volume 5
issue 1



In the summer of 2011, Rachel Beckwith had just finished third grade. She was looking forward to riding her bike and playing games like jump rope with her friends. Rachel also liked dancing.

Then she heard someone say that there were children in Africa who did not have clean water to drink. The person was from an organization called

charitywater.org, a charity that builds wells for towns in Africa. The wells provide people with clean water. Without wells, people often have to walk many miles to find water, then carry it home in buckets. Often, the water is not clean.

Instead of presents for her ninth birthday, Rachel asked her family and friends to donate \$9 for clean water in Africa to charitywater.org. If she could raise \$300, 15 people could get clean drinking water.

By the time her birthday came, Rachel had raised \$220. That meant that 11 people could get clean water.

She told her mom that she would try harder the next year to raise more money for the charity.

A month later, Rachel was critically injured in a car accident. On July 23, 2011, she was taken off life support. She died soon after.

When the news about Rachel's story and her birthday wish spread, people all around the world began to donate money in her name. Some gave \$9, some \$19, some more. A month later, 30,000 people had given more than \$1.2 million. Because of Rachel Beckwith, 60,000 people in more than 100 villages now have clean water to drink.

In her honor, one village put up a sign that reads, "Rachel's great dream, kindness, and vision of a better world will live with and among us forever." Clearly, one person, even a child, can make a difference.



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Physical Exercise



Written by **Elfrieda H. Hiebert**

What Some People Say About: Physical Education

Pacifica Examiner: Letter to the Editor

Dear Editor,

I am in the 4th grade at North Shore Elementary. Every week on Friday we have a PE class. I used to hate PE classes. We used to just play games like football and basketball. I am not very good at them. Now we do exercises and play other sports. We run relays and play tennis. Our PE teacher, Mr. Kroger, says these skills will last us a lifetime.

Now our principal, Ms. Blair, says that our school is going to get rid of PE class because our test scores are so low. She also said that we are getting enough exercise after school and at recess, and that we don't need PE class. I am not very good at soccer and basketball, and so I am not signed up for after-school sports. PE class is one of the only times that I



get to run around and have fun. I think it is important to have a time during school where we learn about exercise, just like we learn about math and science. Please don't get rid of our PE class!

Sincerely,
Gregory Diller



Photo: Children from the Kadena Children's Center jumping rope. Okinawa, Japan. February, 2010
Taken by Mass Communication Specialist 2nd Class Meagan E. Klein. Released into Public Domain by the United States Navy.

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Written by
Alice Lee Folkins &
Andrew Funk

The Story of Knut

In 2006, twin polar cubs were born at a zoo in Germany. For unknown reasons, the cubs' mother couldn't take care of them. The zookeepers stepped in and took care of the cubs. But one cub died. The other cub they named him Knut. Zookeepers fed, bathed, played, and even slept next to him.

Visitors to the zoo fell in love with Knut. Because of Knut, people became interested in polar bears. They learned that ice and snow are slowly melting in the northern homes of the polar bears. This change makes it difficult for polar bears to survive. The interest in Knut led people to ask for laws to save wild polar bears.

When he was only four years old, Knut suddenly died. His unexpected death stunned people around the world. Doctors found that Knut had been sick for weeks. Many questions were asked about whether Knut would have lived longer in the wild, even if his mother had not cared for him. These are hard questions without easy answers. But many believe that Knut's story has helped many people care about wild polar bears and the places they live.

Photo: Polar Bear Knut at age 2. Zoo of Berlin, Germany. December, 2008. ©2008 by Aconcagua. Some rights reserved: GNU Free Documentation License and Creative Commons Attribution-Share Alike 3.0 Unported

Talking
Points

For
Kids



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Readworks.org has approximately
1,500 *free* passages for Grades 1-
early high school

- Teach students about the idea networks of words: (a) synonyms related to traits, etc. in narratives (b) topical networks in informational texts and morphological families.

Open-Access Resources:

- Super Synonym Sets for Stories (20 Lessons)
- Exceptional Expressions for Everyday Events (32 Lessons)
- Word Pictures: 6 Sets (as of March 10, 2015)

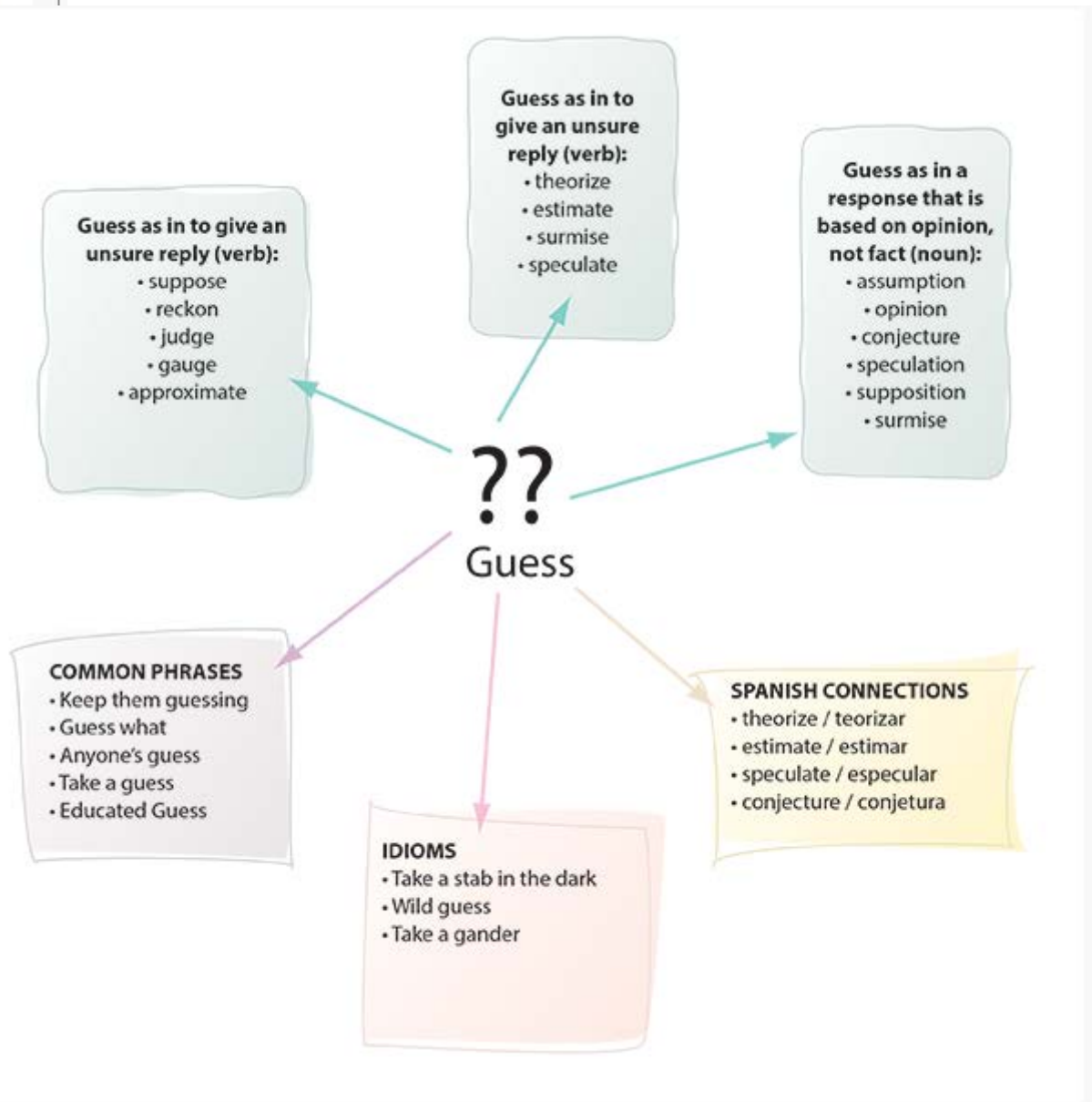
Action 3: TEACH WORDS IN NETWORKS & FAMILIES.



Synonym Networks in Narrative Texts

Prolific Groups of Synonyms

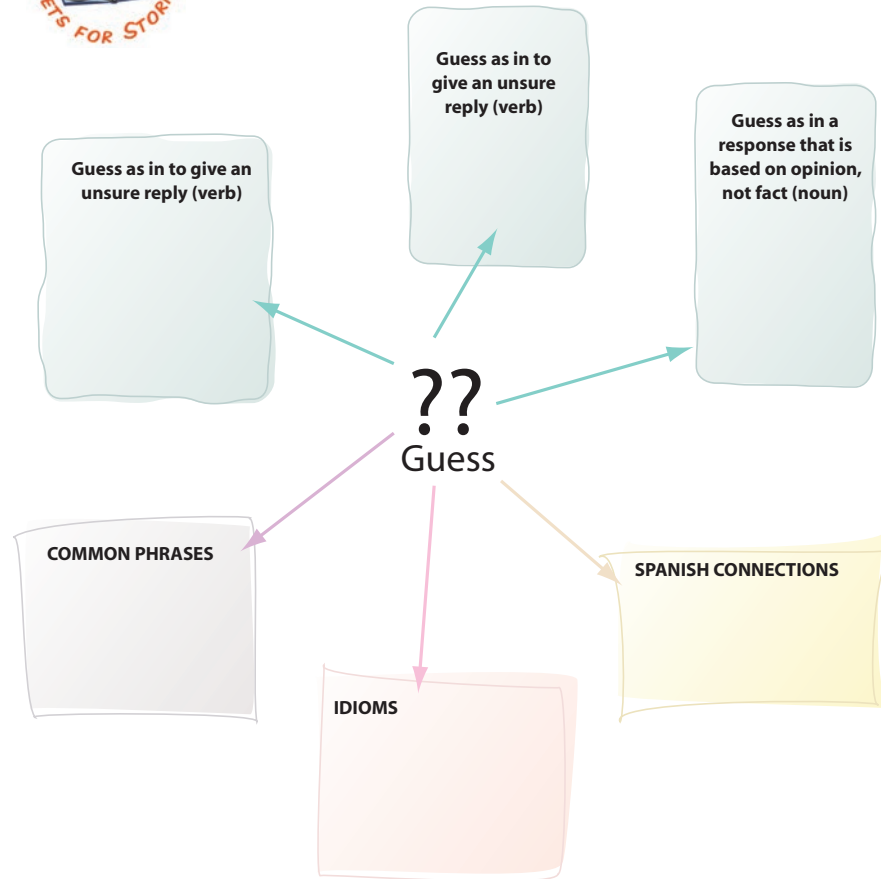
Communication /Internal Processes (verbs)	Emotions (adjectives)	Movement (verbs)	Traits (adjectives)
think	glad	go	funny
argue	sad	send	smart
observe	mad	start	brave
guess	selfish	stop	selfish
say	fear	stay	shy





S4-02

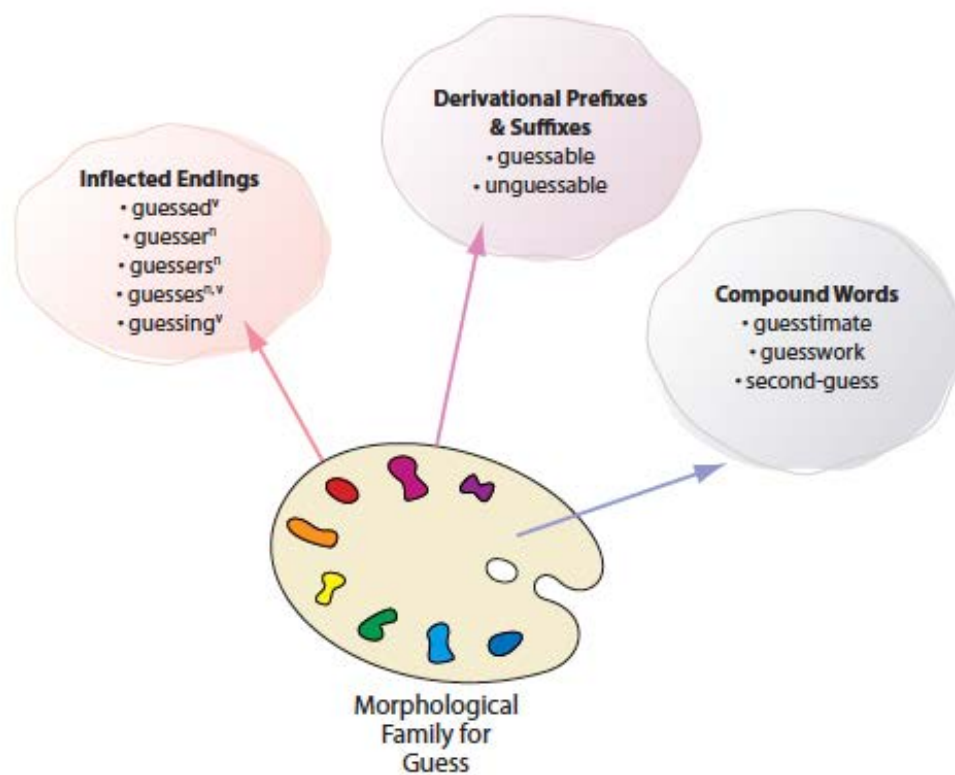
Guess





S4-02

Guess



ⁿ Guess used as a noun

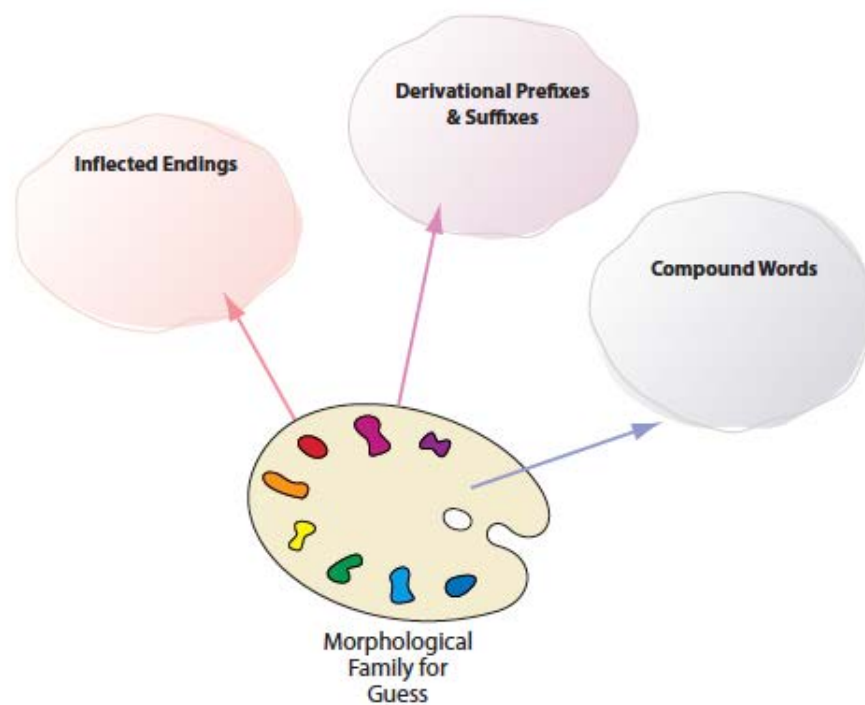
^v Guess used as a verb





S4-02

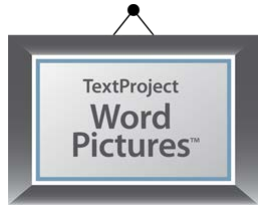
Guess



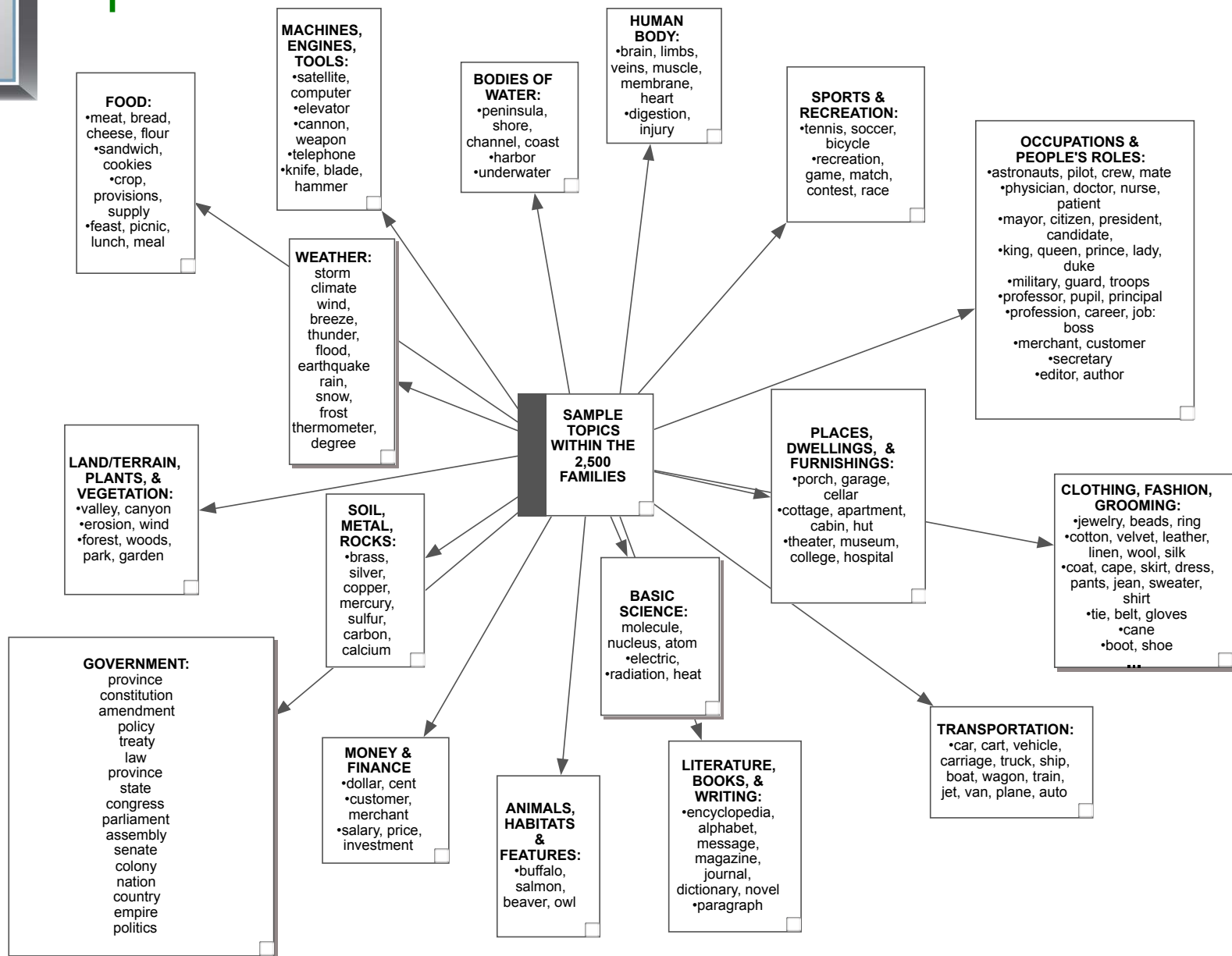
ⁿ Guess used as a noun

^v Guess used as a verb

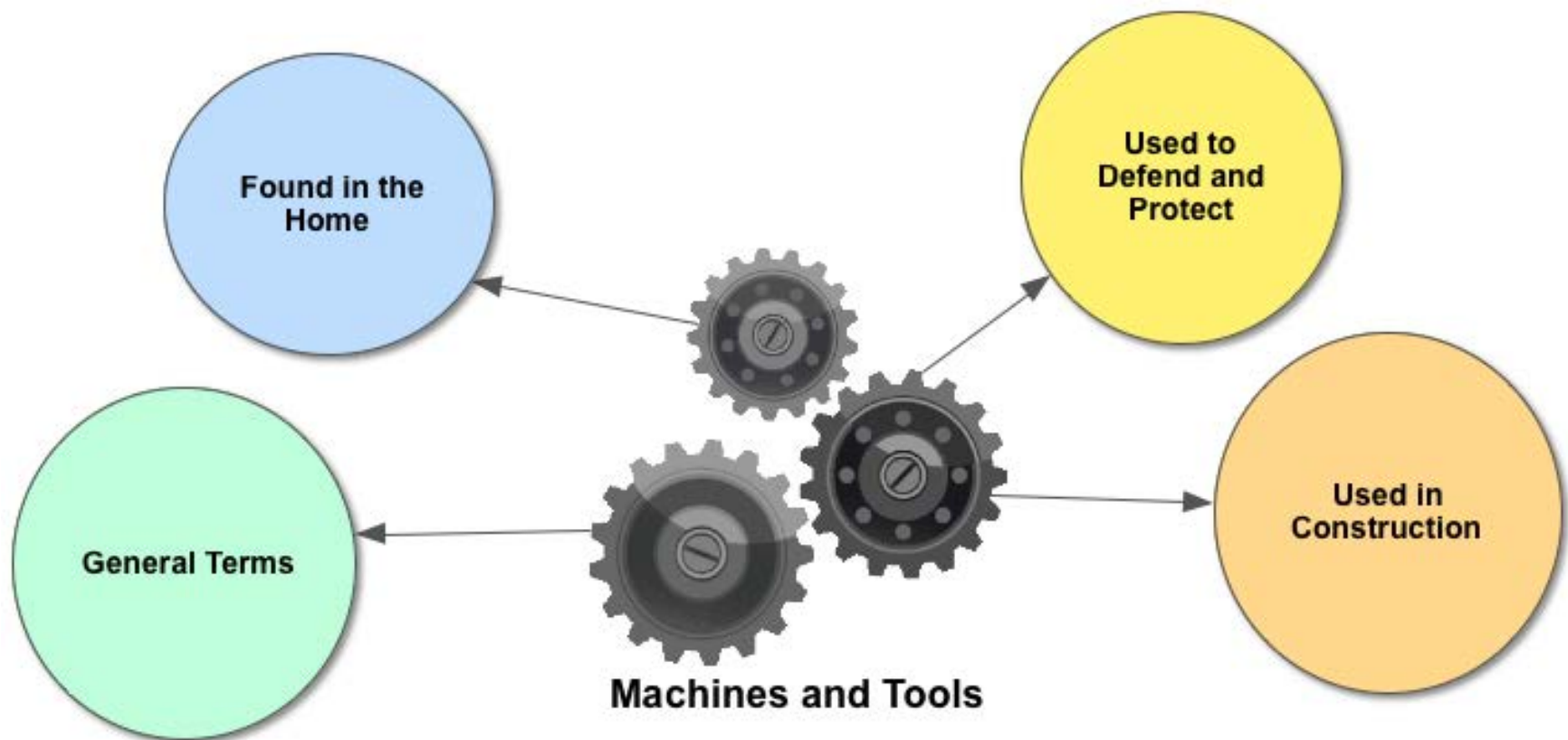


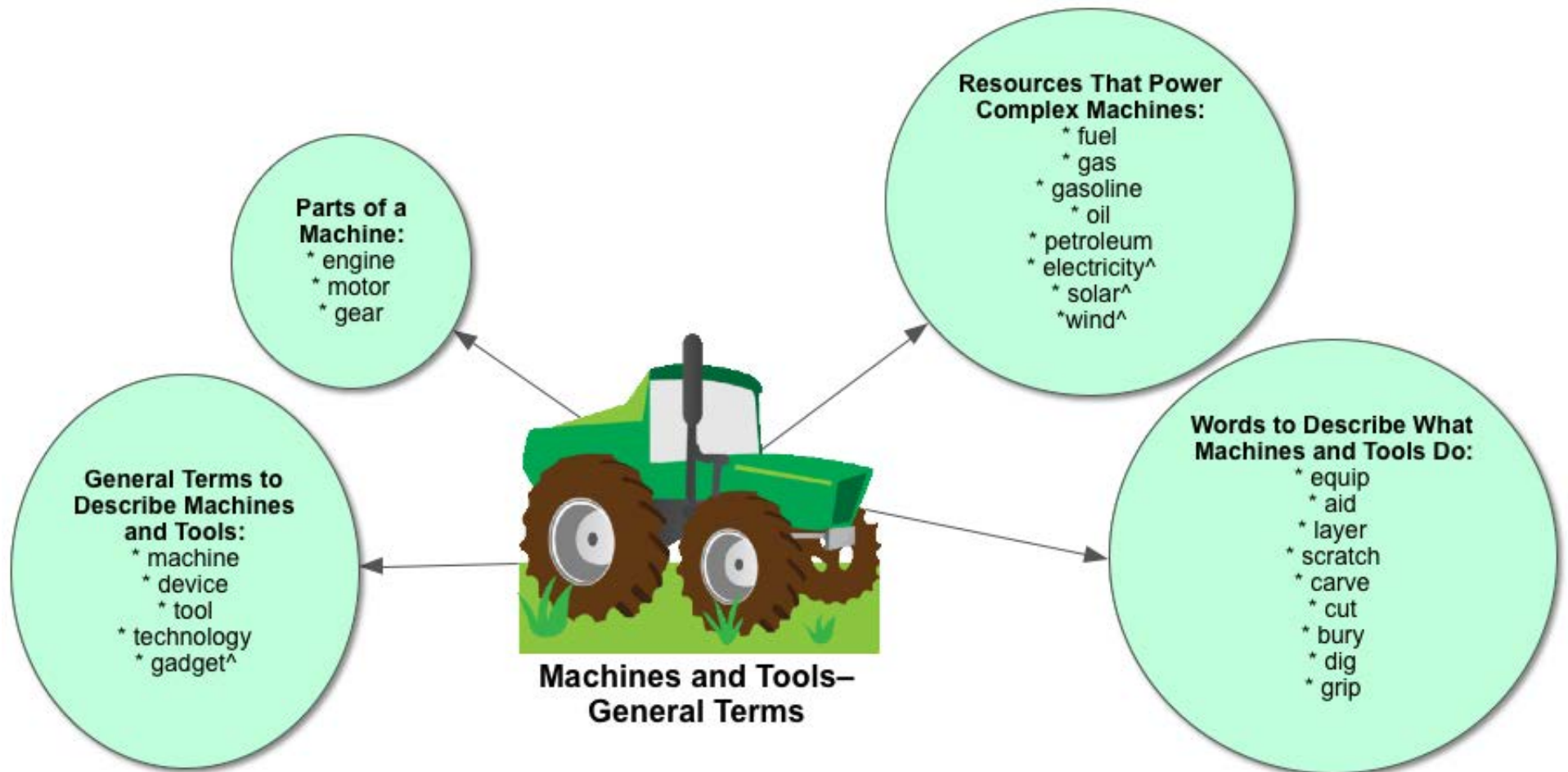


Topical Networks in Informational Texts

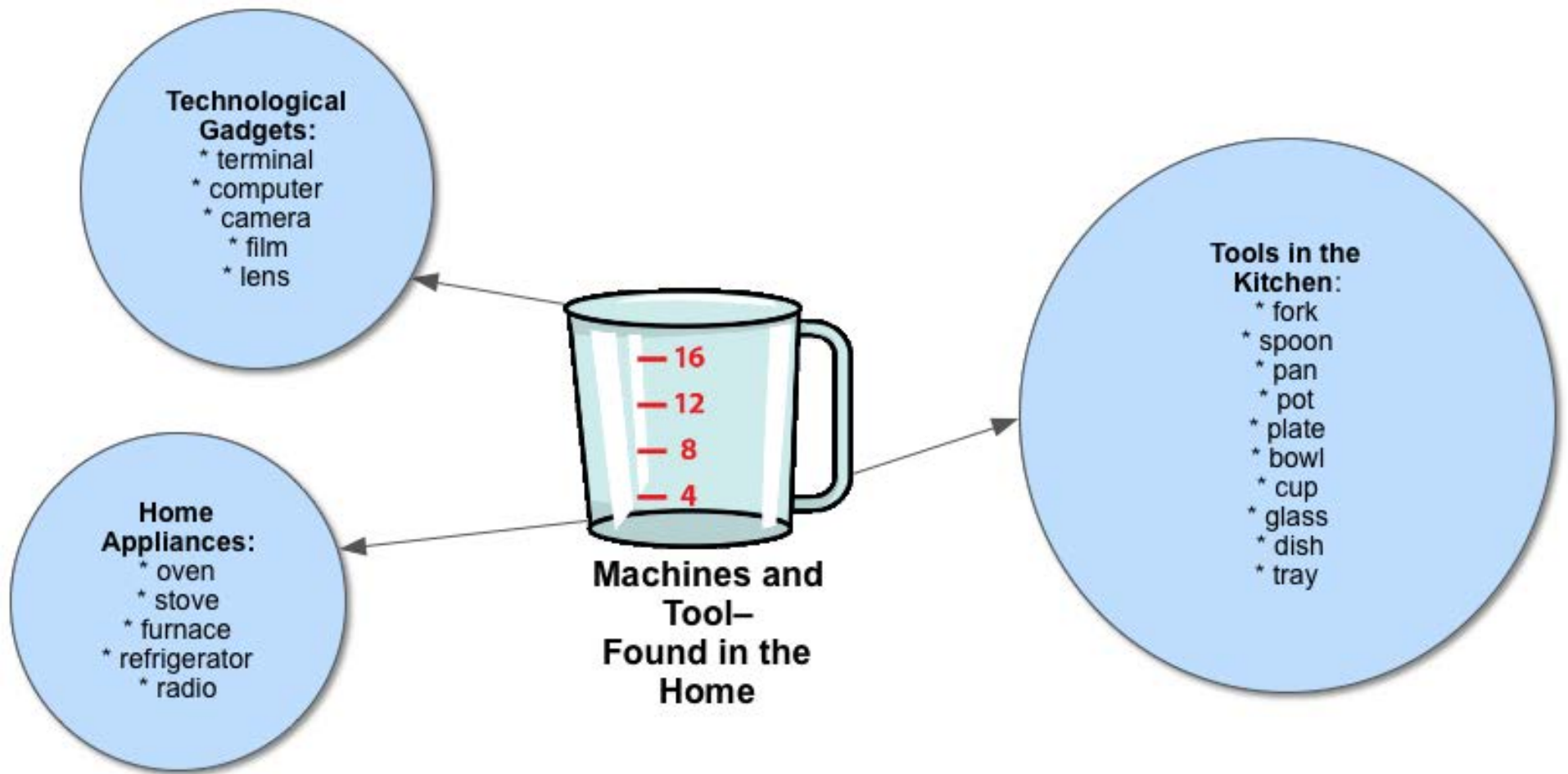


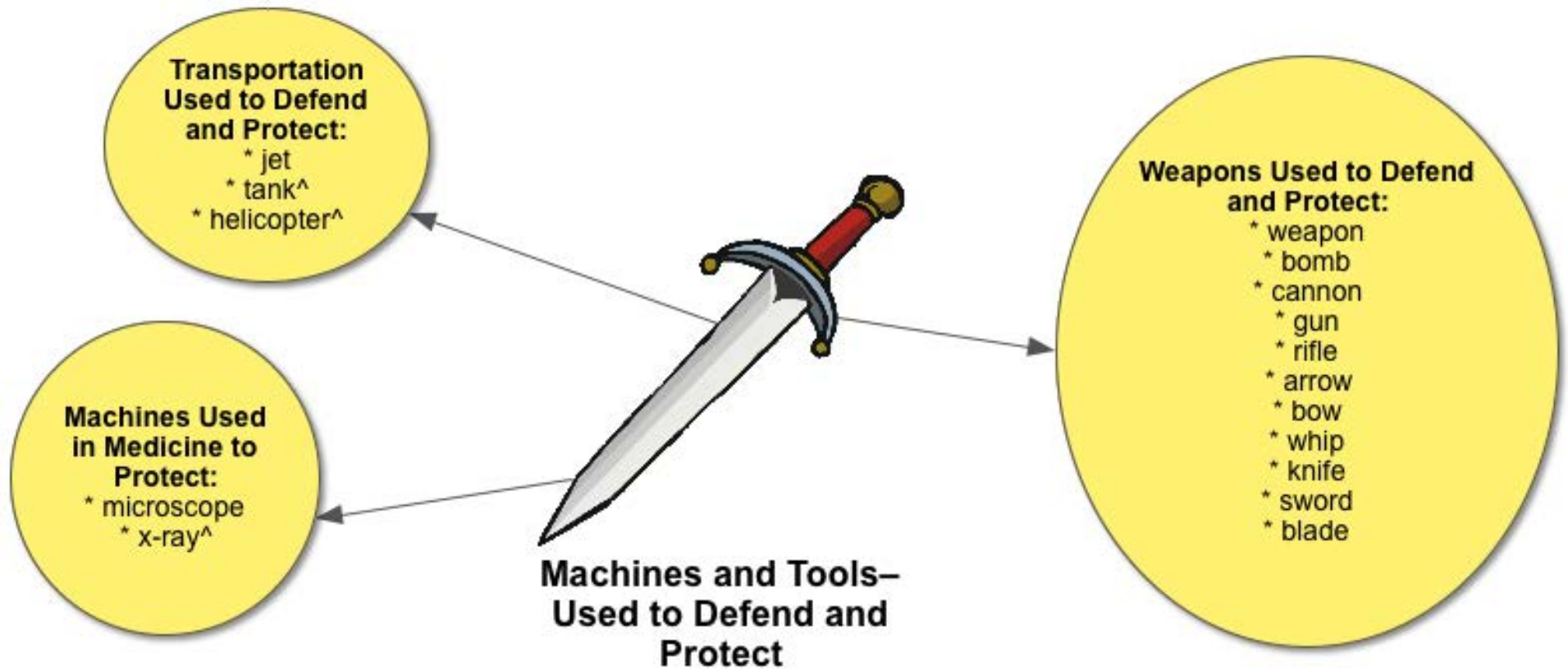
Topics & 2,500 Critical Word Families
© Elfrieda H. Hiebert, 2015



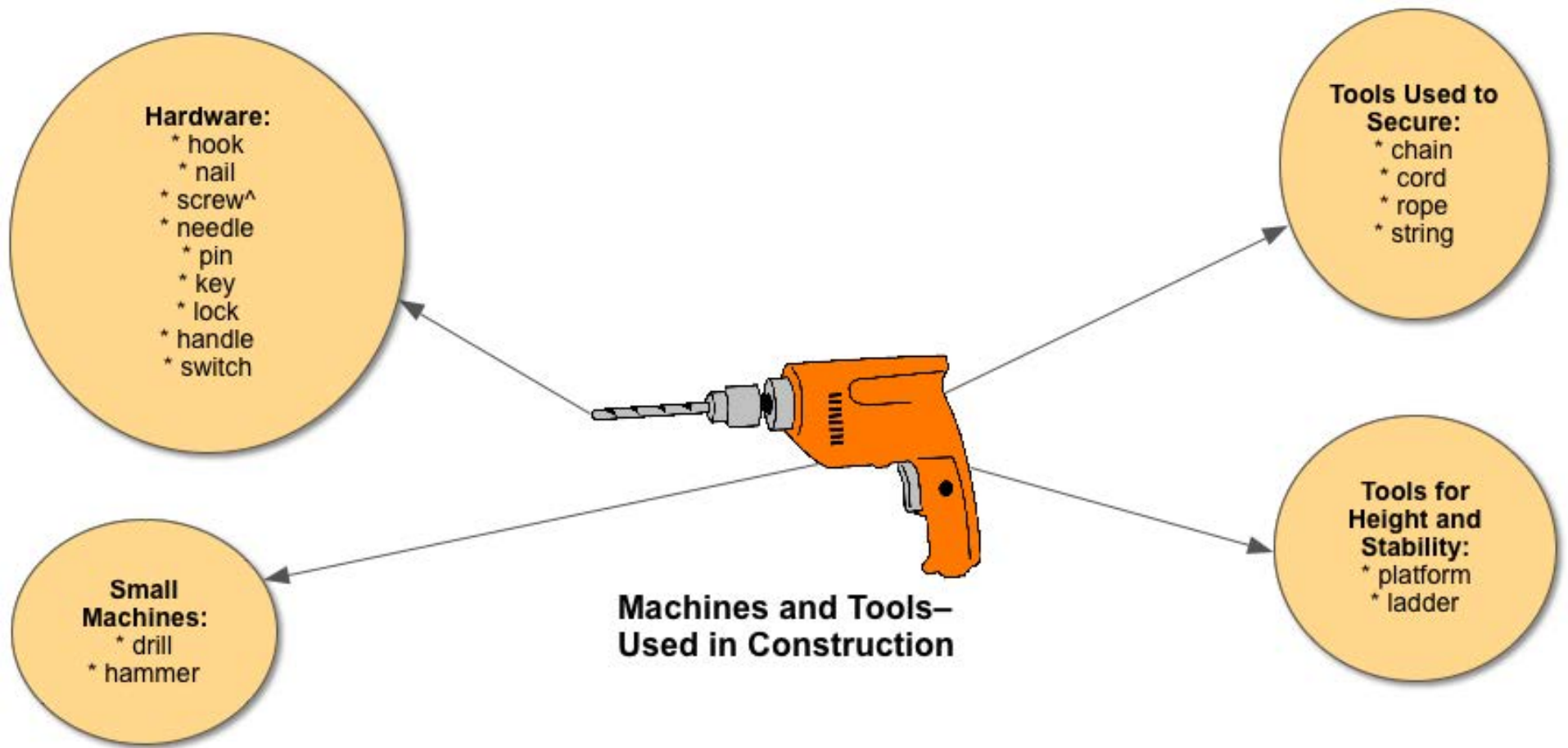


^ non core vocabulary words added to supplement concept





^ non core vocabulary words added to supplement concept



^ non core vocabulary words added to supplement concept

Identify particular themes/topics as foci for a quarter/school year. Select magazine articles and read-alouds to support the theme/topic.

Open Access Resources:

- Word Pictures—Content Area & Core Vocabulary
- Reading Passages from Readworks.org
- Lessons from Readworks.org

ACTION 4: DEVELOP BODIES OF KNOWLEDGE

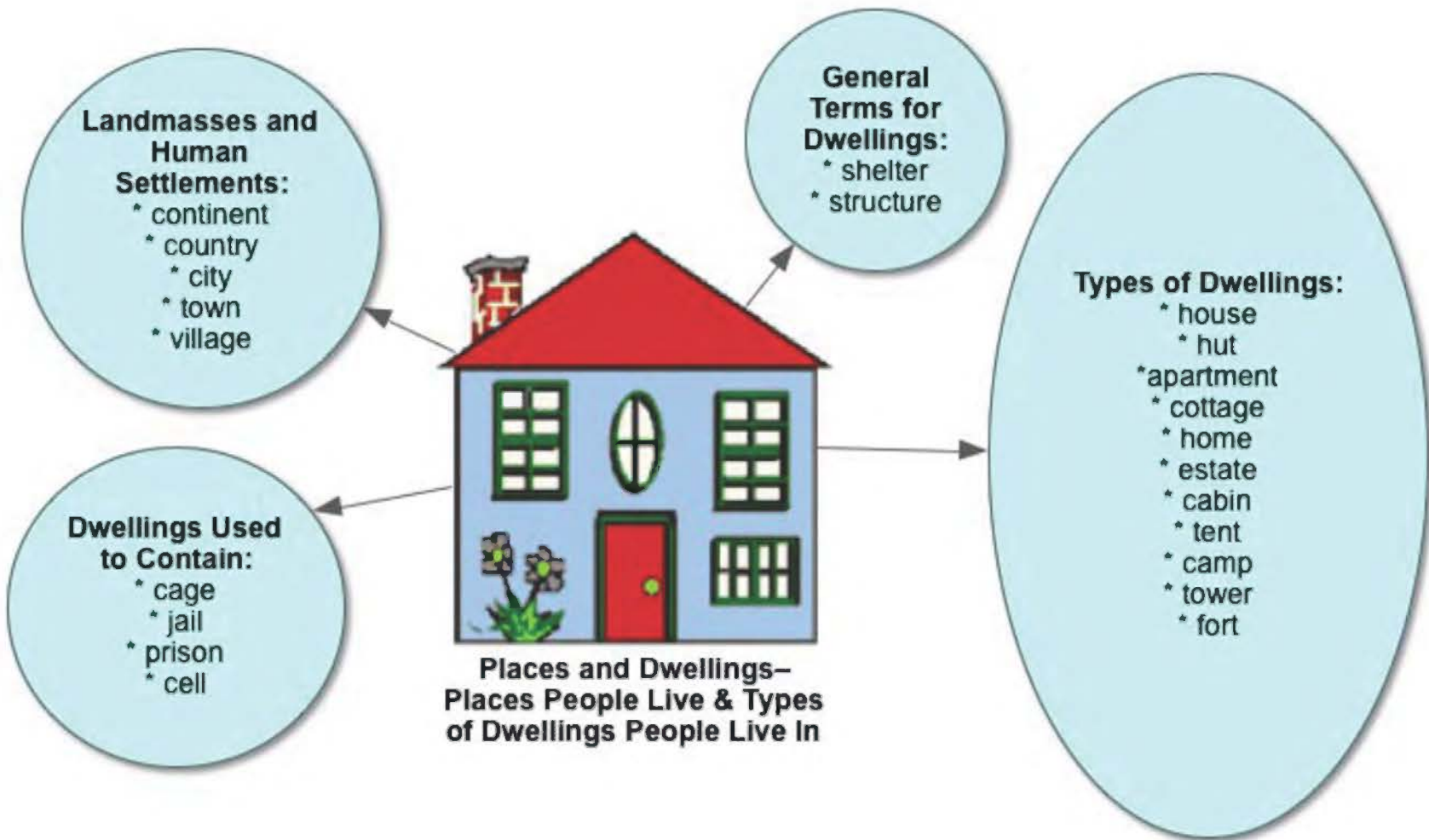
Themes & Topics for Knowledge Foci

Category	Sub-Category
Science	Physical Science
	Life Science
	Earth Science
Social Studies	History
	Geography & Economics
	Culture
	Civics
Art & Music	Art
	Music
	Dance
	Architecture
Language Studies	Word Study
	Text Study
Human Interest	Young Inventors
	Young Heroes
	Sports & Games
	Fashion & Crafts

Themes & Topics for Knowledge Foci

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Language Studies	Word Study
	Text Study
Human Interest	Young Inventors
	Young Heroes
	Sports & Games
	Fashion & Crafts





Lesson Plans & Reading Passages from readworks.org

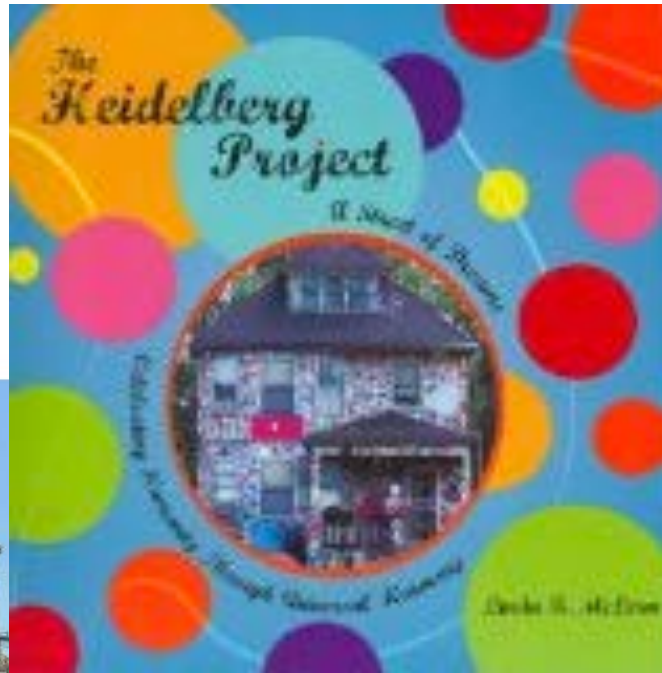


Architecture
The Parthenon

Architecture, like painting, literature, and other forms of art, reflects the ideals of the people who build it. The Parthenon is the best example of ancient Greek architecture. The structure, created between 447 B.C.E. and 432 B.C.E., tells us a lot about the Greek way of thinking.

In Greece, balance and order were important **principles**¹. The Greeks believed that everything around them happened for a reason. They wanted to find out this reason and discover the order of the world around them. Their buildings were beautiful, but they do not overflow with **frivolity**² or emotion. Instead, Greek buildings define order.

Columns are one **hallmark**³ of classical structure that we associate with Greece and Rome. The Parthenon was built with eight columns on the front and 17 on each side. The building is symmetrical and balanced. Mathematical principles make the design stable. Almost the entire structure is made of marble.



Architecture
The Duomo



The Duomo
Florence, Italy

One building, more than any other, marks the arrival of the Renaissance to Europe. Did you know that "naissance" means "birth" in French and that the Renaissance was the rebirth of classical learning in Italy? Art and architecture took off during the Renaissance. Many new ideas influenced design. The Duomo, with its grand dome, is a perfect example of new ideas and **innovation**.

Work on the Duomo cathedral, in Florence, Italy, actually started before the Renaissance, in 1296. But the building took 140 years to complete. The **plague**² and many wars prevented construction from continuing on the building as planned. By 1420, the building was almost finished, but there was one serious problem. The plans for the building called for a huge cupola, or dome—bigger than anything built up to that point. No one knew how to build such a dome.



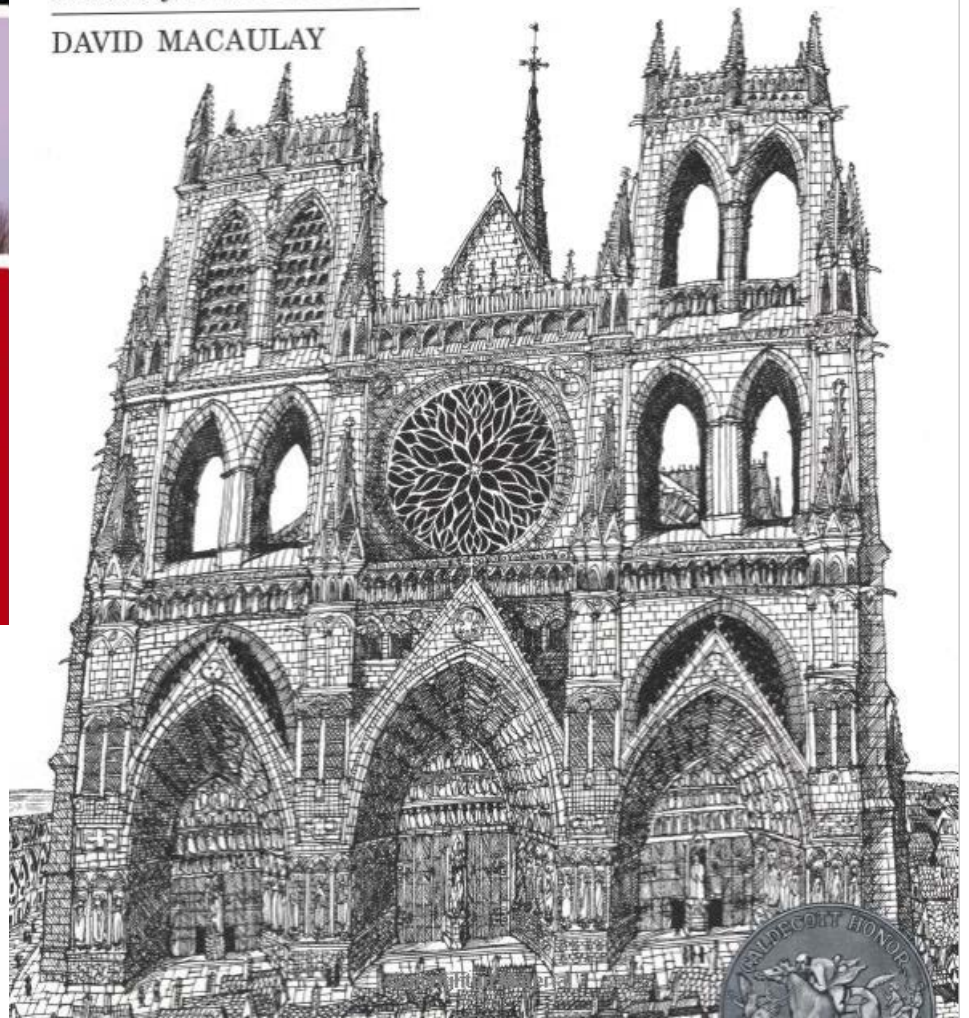
13 Buildings Children Should Know

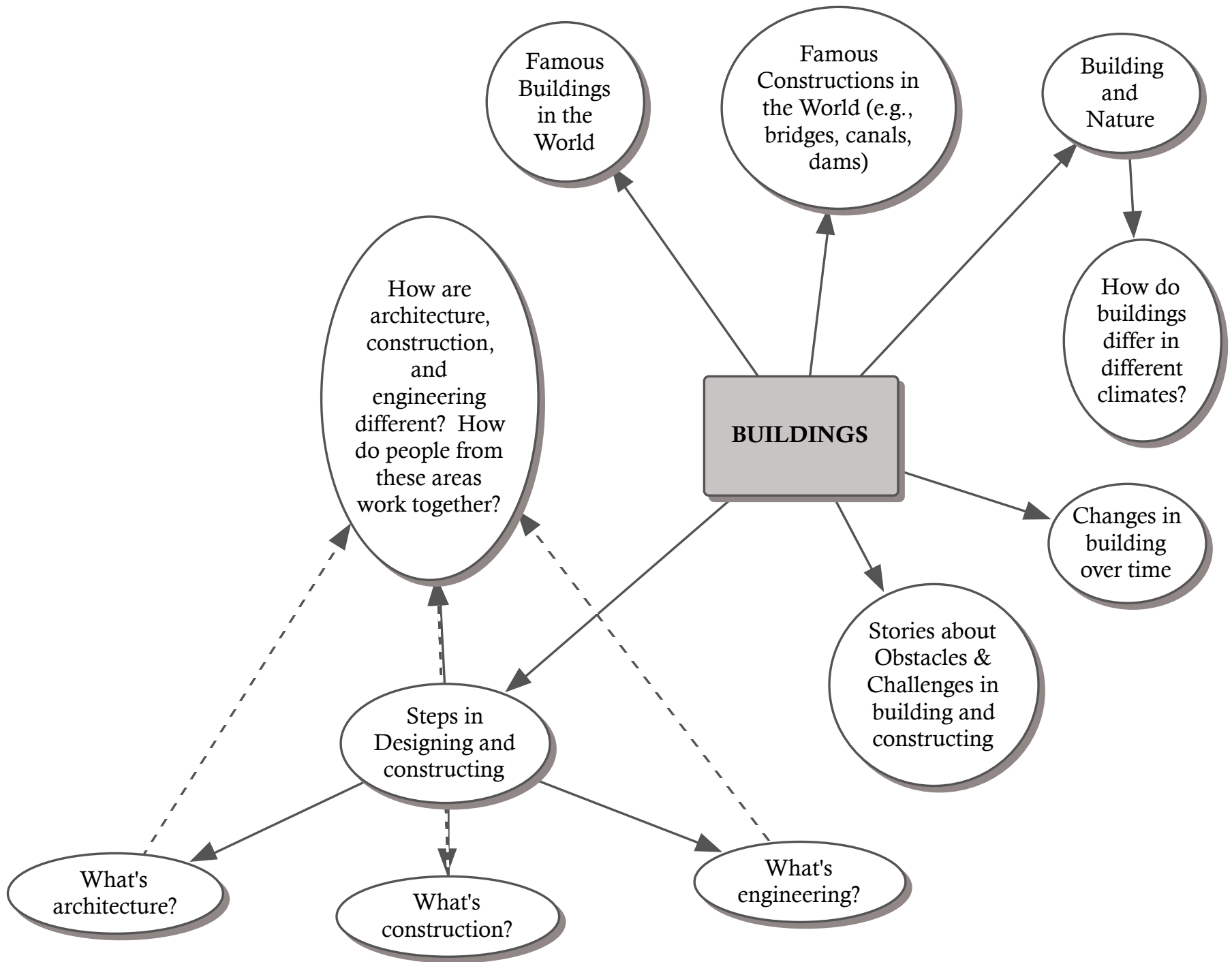
 PRESTEL

CATHEDRAL

The Story of Its Construction

DAVID MACAULAY





- Give students choices in learning and opportunities to share their expertise and interests.

Open-Access Resources:

- TextProject's Teacher Tips—Increase Engagement

ACTION 5: GIVE STUDENTS CHOICES.

Engagement Tip #1: From a set of 2-3 articles, let students choose which one to read.

Early People in the Central American Land Bridge

James Folta



People have been living in Central and South America for many, many years now. How did ancient people live in this area thousands of years ago? Archaeologists studying the area of the Central American land bridge have been working to answer this question.

What is the Central American land bridge? It is the land that is now the countries of Costa Rica and Panama. Like a modern bridge over a river, this land bridge was used by animals and people to travel back and forth. This Central American land bridge connects the northern land that is now Nicaragua, Mexico, and so on to the southern land that is now Colombia, Brazil, and other South American countries.

People who were already living in North America traveled down and across this land bridge. Scientists think they traveled there around 11,000 BC. They probably were following large animals that they hunted and ate. These people would have traveled on foot, following the herds of animals. They had no permanent houses. They would pack up their things and bring them along as they hunted. Their homes were like tents and were very easy to take down and put up. Archaeologists can tell these people traveled via the land bridge because they have found similar arrowheads and tools in both the land bridge and in areas further north and south.

Penobscot Nation

By ReadWorks



BIRCHBARK WIGWAGS OF PENOBSCOT INDIANS

Maine is a big state. It has a little bit of everything, including hills, forests, rivers, streams, mountains, and coastline. The Penobscot Indians, a tribe native to a large portion of the state, adapted to and used all of the features of the land.

Penobscot Indians lived mainly in the region known as the Penobscot River Basin, which covers a large swath of central Maine. A river basin is the name for the land around a river and its smaller tributaries; river basins can be very small, or, in the case of the Penobscot River, very large. The Penobscot River Basin accounts for one-third of the state's area!

Rivers are known to be fundamental for civilizations. They provide a resource of utmost importance: water! The Penobscot Indians built their lives around the river and all that it supported. The river was a source of food, for example, as it provided fish for the Penobscot Indians to eat.

Both the main river and its smaller branches provided a means of transportation, and the Penobscot were extremely skilled at making canoes from the bark of birch trees, using branches and roots from ash, spruce, and cedar trees for other parts of the boats.

Besides its rivers, one of Maine's most distinct features is its tree cover. Forestry and logging are important industries in Maine. Trucks stacked high with tree trunks rattle down roads in central Maine all day long, making loud noises and leaving behind the sticky smell of pine. Penobscot Indians used trees to their advantage long before modern loggers, however. In addition to making the canoes mentioned above, people built homes from the bark of birch trees. Bigger dwellings were made of larger branches and logs.

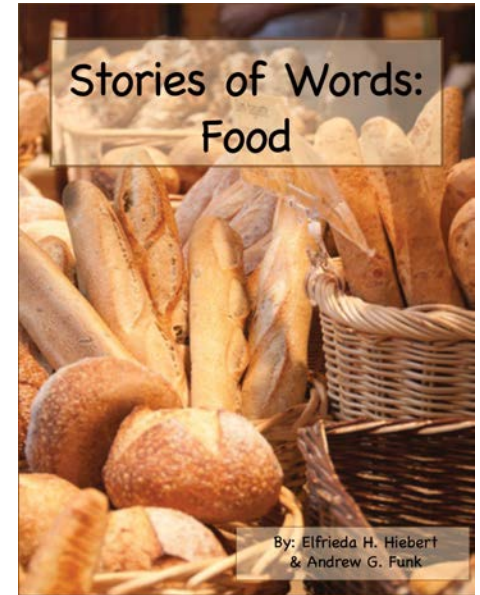
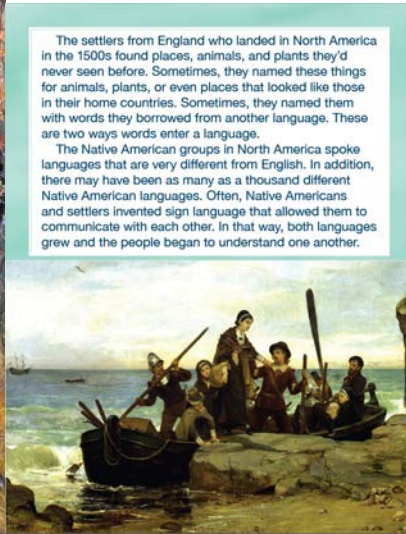
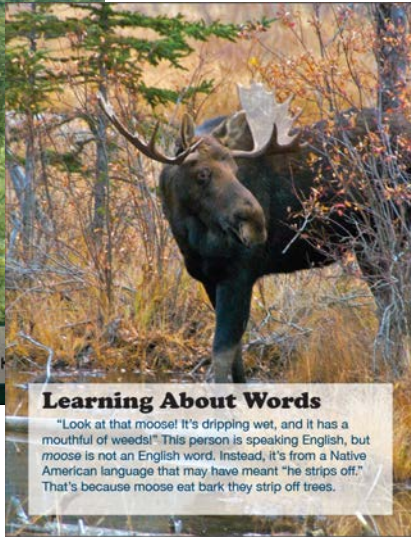
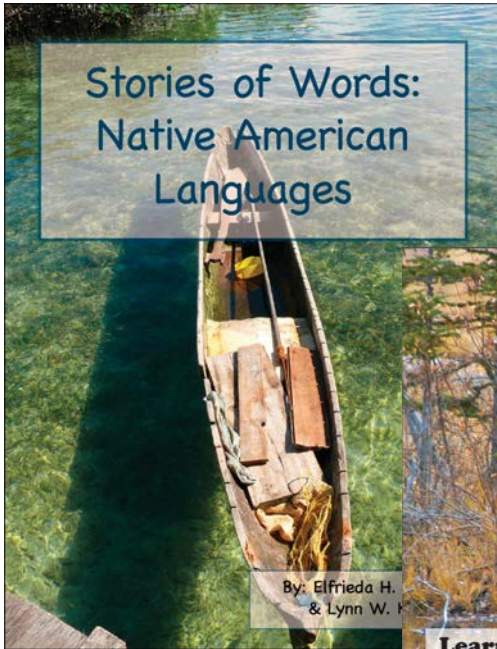
Engagement Tip #2: Have a section of the classroom library devoted to books that students have written. Include books from alumni.



Engagement Tip #3: Have regular occasions for students to share expertise with posters, presentations, and book recommendations.



Fact	Action	Open-Access Resource
1. English has many rare words.	1. Teach students to expect new words in texts.	1. <u>Talking Points for Teachers: New Words in New Texts</u>
2. Reading volume matters.	2. Increase volume of reading.	2. <u>FYI for Kids, Talking Points for Kids</u>
3. Words are part of networks and families.	3. Teach words in networks and families.	3. •Synonym Clusters in Narratives: <u>Super Synonym Sets for Stories (S⁴) & Exceptional Expressions for Everyday Events (E⁴)</u> •Topical Clusters in Informational Texts: <u>Word Pictures--Core Vocabulary & Content Areas</u>
4. Knowledge predicts comprehension.	4. Develop bodies of knowledge.	4. •ReadWorks Reading Passages •ReadWorks Lessons (read-alouds)
5. Engagement matters.	5. Give students choices.	5. Text Project's Teaching Tips: Increase engagement



The English word *noodle* came from the German word *Nudel*. However, many of the noodles eaten in the United States are called by the Italian word for noodles: *pasta*. Pasta comes in many shapes, sizes, and lengths. Some pastas are smooth, while others

have ridges. Some have a filling, while others are hollow or solid.



Italian Noodles

The names of most pastas describe how they look. Here are some examples.

Name for Pasta	How the Pasta Looks	The Word's Meaning in Italian
farfalle	bow ties or butterflies	<i>farfalle</i> : butterflies
linguini	flat, narrow strips	<i>linguini</i> : little tongues
penne	medium-sized tubes	<i>penne</i> : feathers or quills
spaghetti	long, rod-like strands	<i>spago</i> : a thin string or cord (<i>spaghetti</i> : little strings or cords)
vermicelli	long, very thin strands	<i>vermicelli</i> : little worms





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