

Vocabulary Instruction That Increases Capacity with Complex Text

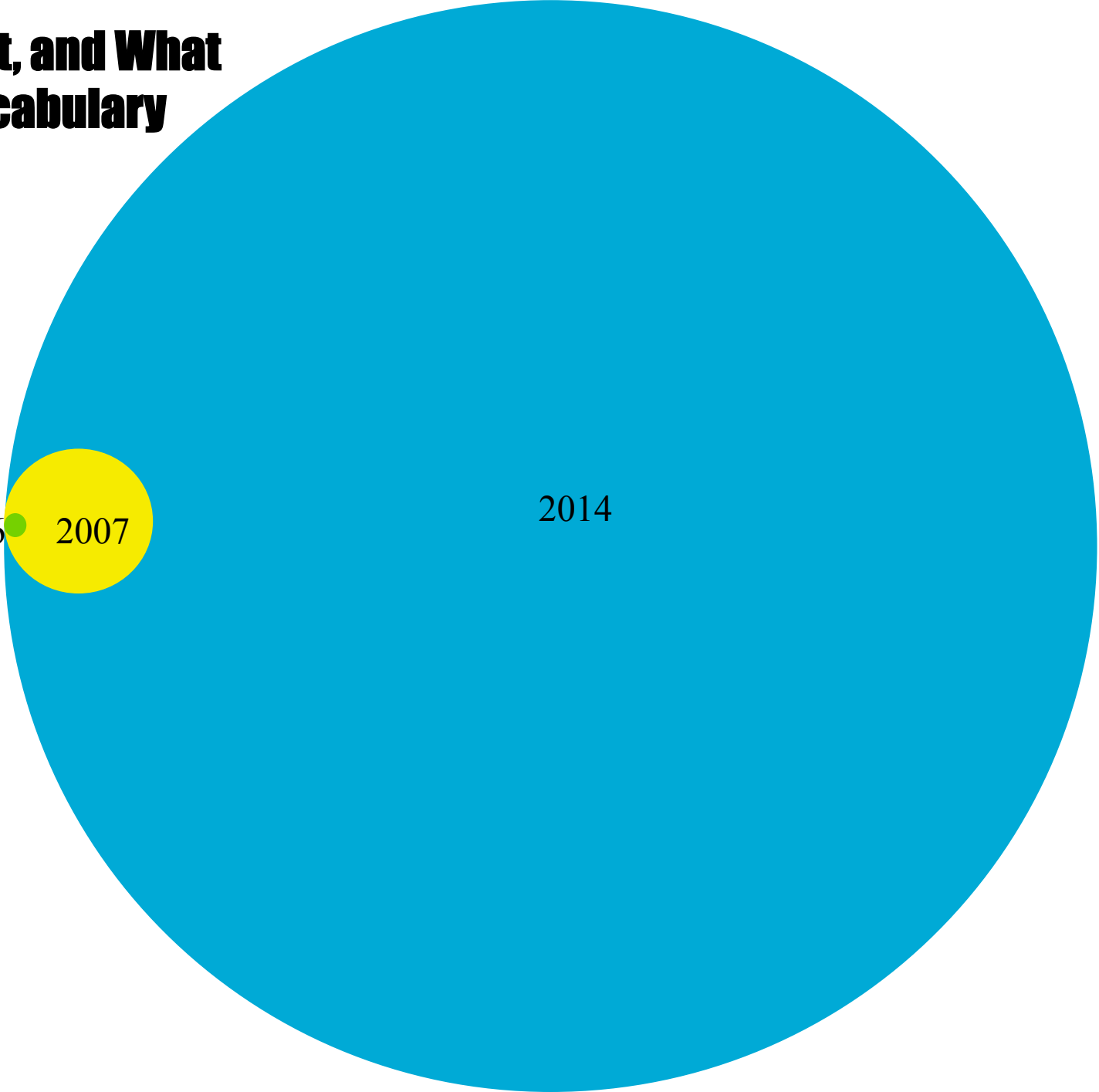
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TextProject &

University of California, Santa Cruz

Presentation at CATE, February 20, 2015, San Jose, CA

**Knowledge, Text, and What
it means for Vocabulary
Instruction**



1986 2007 2014

Complex Text & Vocabulary

The Birchbark House

Startled, Omakayas slipped and spun her arms in wheels. She teetered, but somehow kept her balance. Two big, skipping hops, another leap, and she was on dry land. She stepped over spongy leaves and moss, into the woods where the sparrows sang nesting songs in delicate relays.

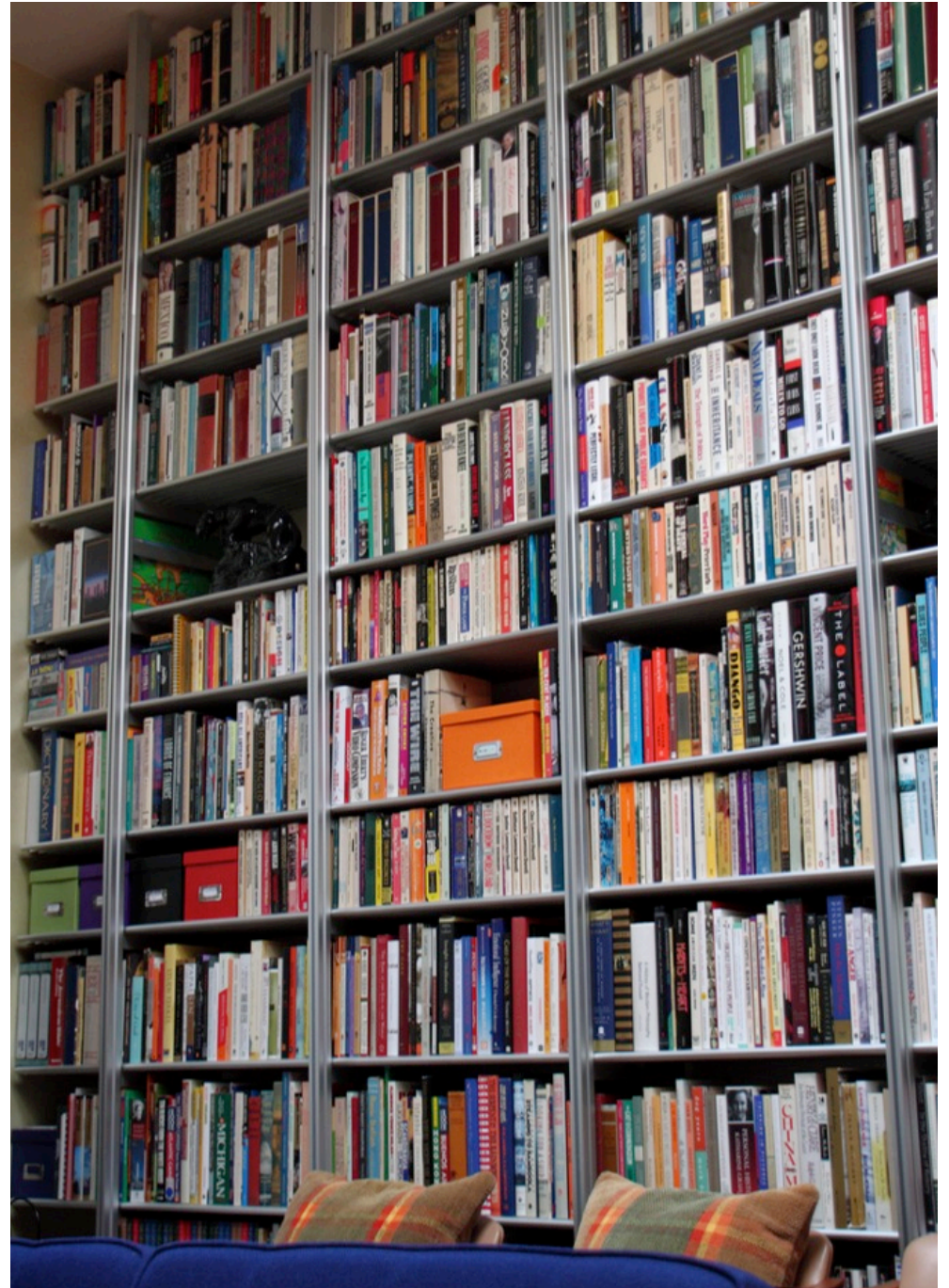
Volcanoes

The mountain seemed much the same as it had been for the past month. Suddenly, at 8:32 a.m., Mount St. Helens erupted with incredible force. The energy released in the eruption was equal to ten million tons of dynamite.

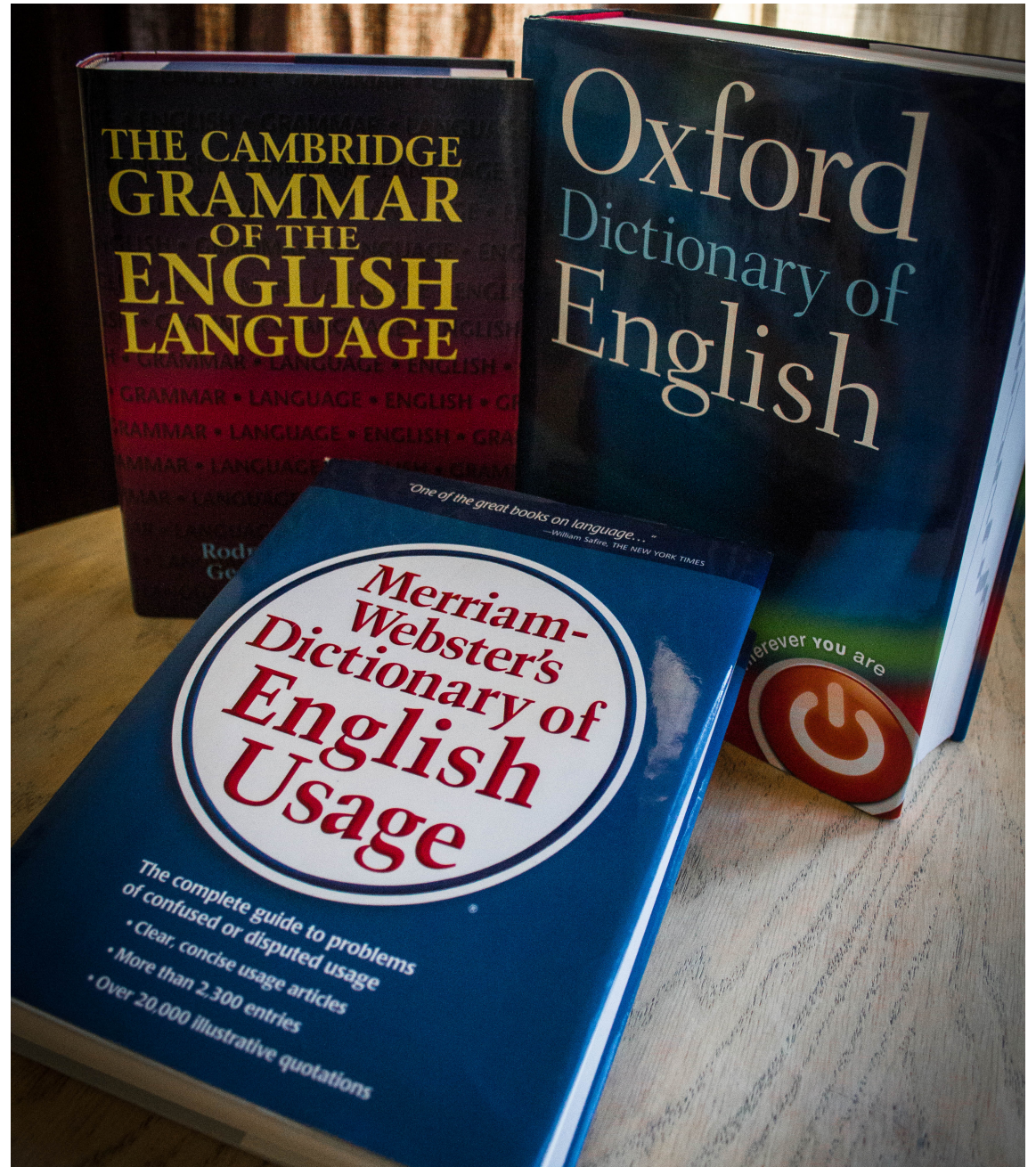
The eruption of Mount St. Helens was the most destructive in the history of the United States.

WORD FACTS

**Word Fact #1:
Knowledge is
“stored” in texts,
and texts
typically have
more rare words
than
conversations/
oral language.
And....**



The number of words in English far outnumbers opportunities to teach each individually.



Why does English have so many words?

(from Calfee & Drum, 1981)

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

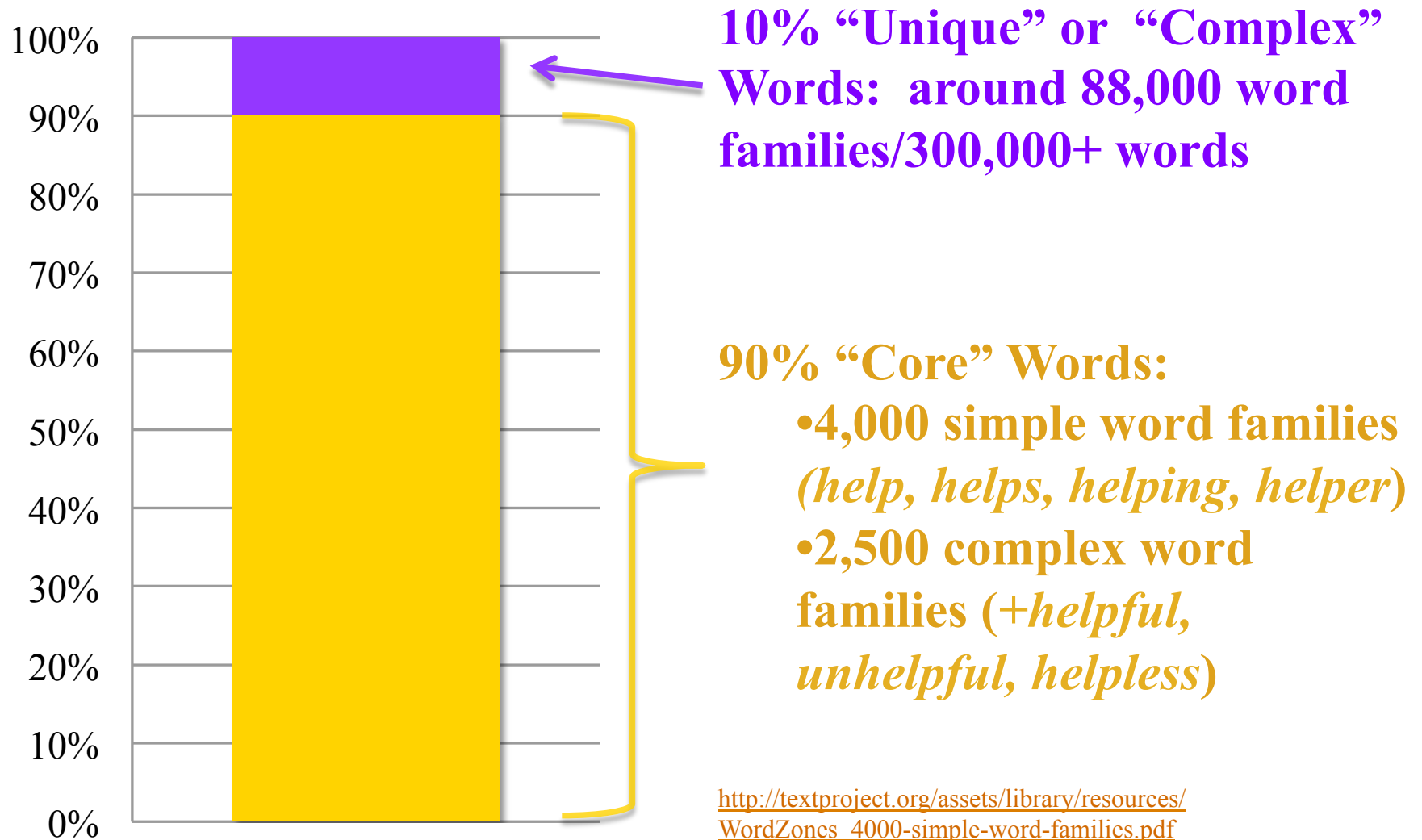
**New Words through derivations:
*frigidity, frigidness, refrigerator***

Anglo-Saxon

Common, everyday, down-to-earth words

**New Words through compounding:
*cold-blooded, cold-natured, cold-drink, cold-running***

Word Fact 2: A small group of words does the heavy lifting in text.

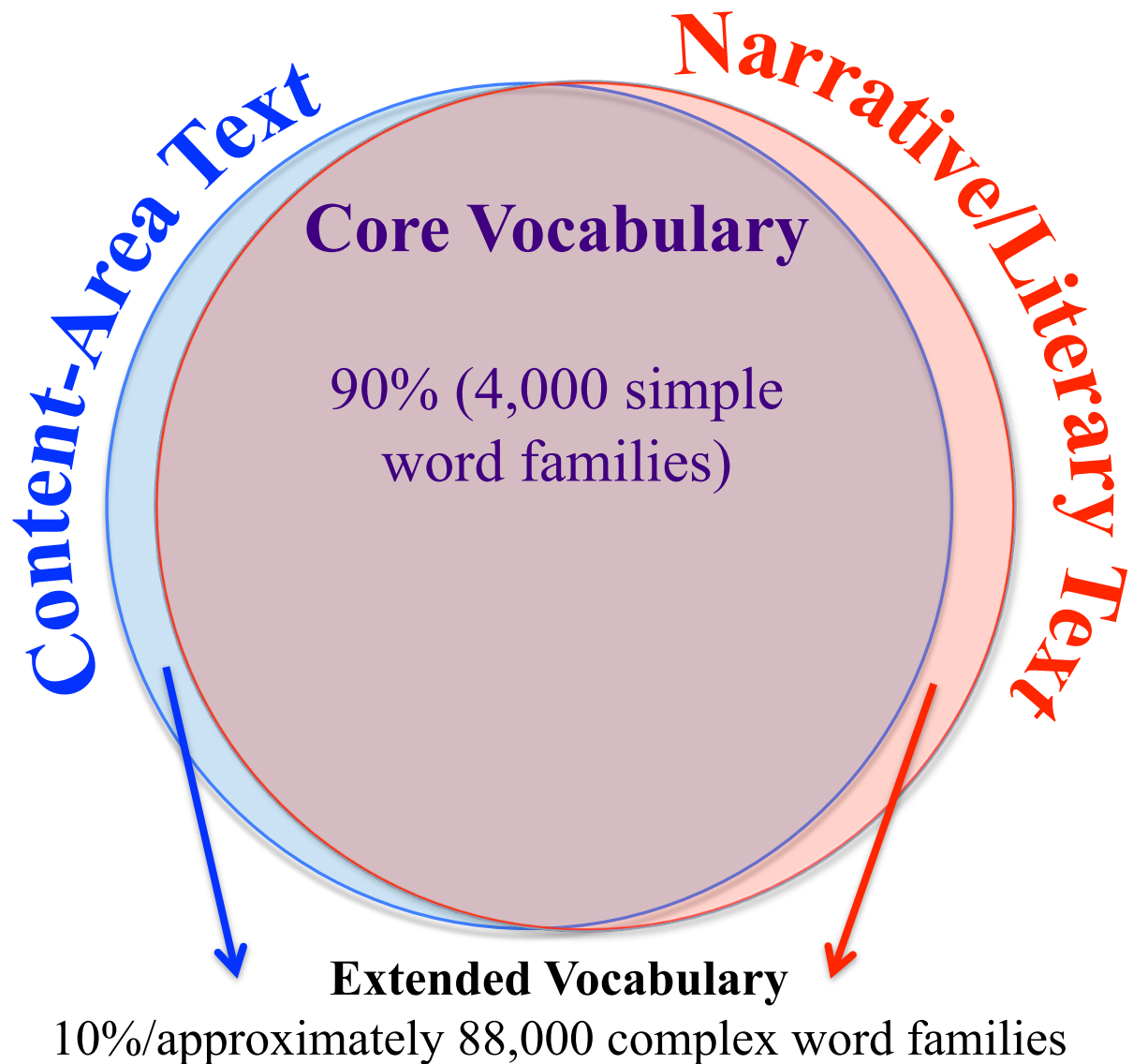


Core Vocabulary in Common Core Exemplars

Grade	Narrative	Informational
2-3	.93	.92
4-5	.92	.91
6-8	.93	.87
9-10	.89	.91
11-CCR	.89	.87

Hiebert, E.H. (July 2014). Development and application of a morphological family database in analyzing vocabulary patterns in texts. Paper presented at the annual meeting of the Society for the Scientific Study of Reading. Santa Fe, NM.

Word Fact 3:
Words are part
of *idea*
networks
that differ for
narrative &
informational
texts.



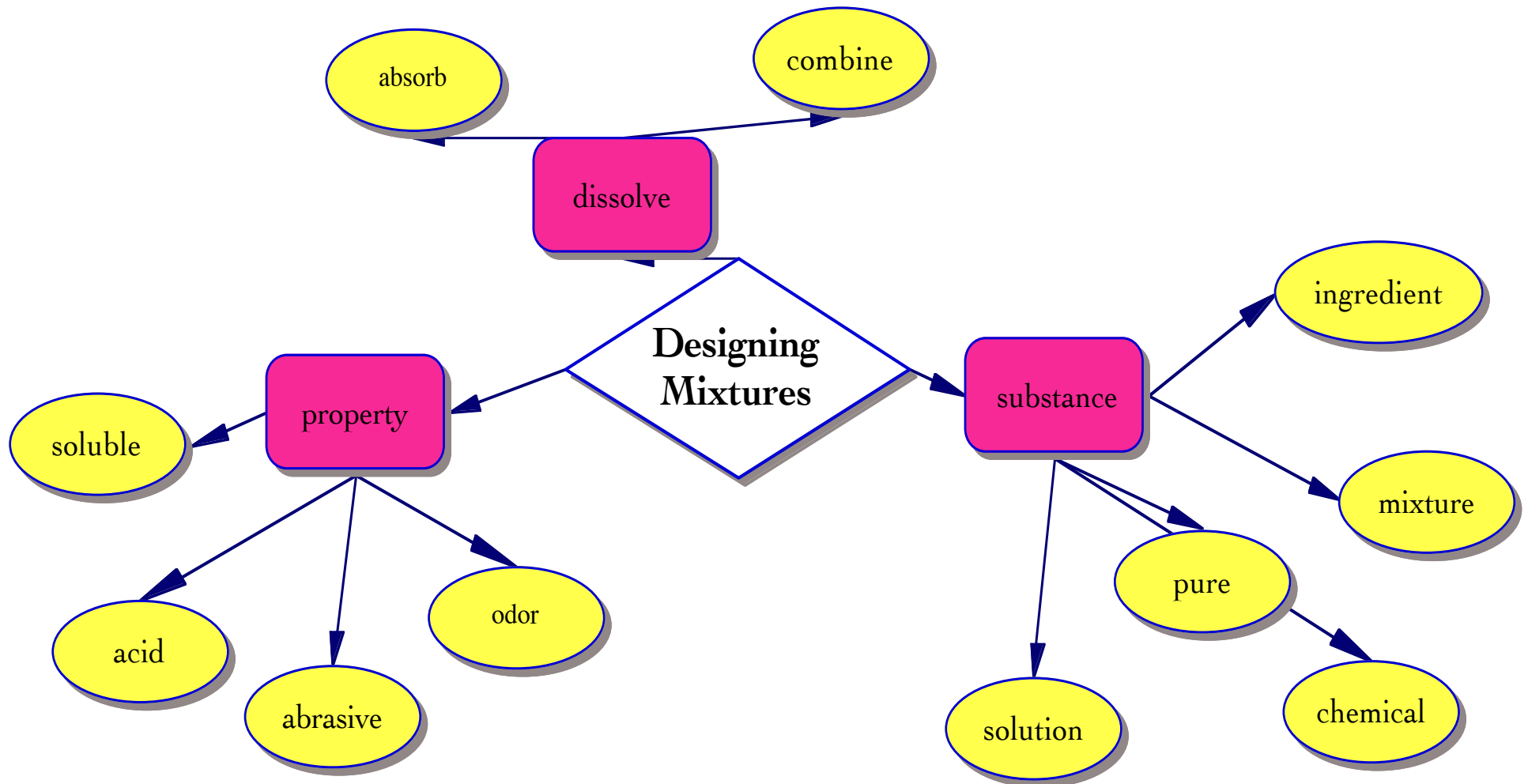
- The month of picking **heartberries** went by. Little **Pinch** jumped off a low branch and made a huge **gash** just over his eye. Blood came pouring down and he seemed both proud of himself and sorry for himself, and he **selfishly hogged** attention for his injury to the point where **Omakayas** 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.



Word Fact 4:

Words are part of *morphological families*.

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

**Word Fact 5:
Concrete
words are
learned and
retained more
readily than
abstract
words.**

Mineral
(min·er·al)



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WORD 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

Word Action #1:

- 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.

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 Ear hart).”*
- *“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.”*

Word Action #2

- 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)

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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Putting Two Words Together

volume 3
issue 2



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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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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Young Heroes: Rachel Beckwith

volume 5
issue 1



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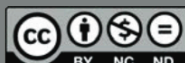
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Readworks.org has approximately 1,500
free passages for Grades 1-early high
school

Word Action #3

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

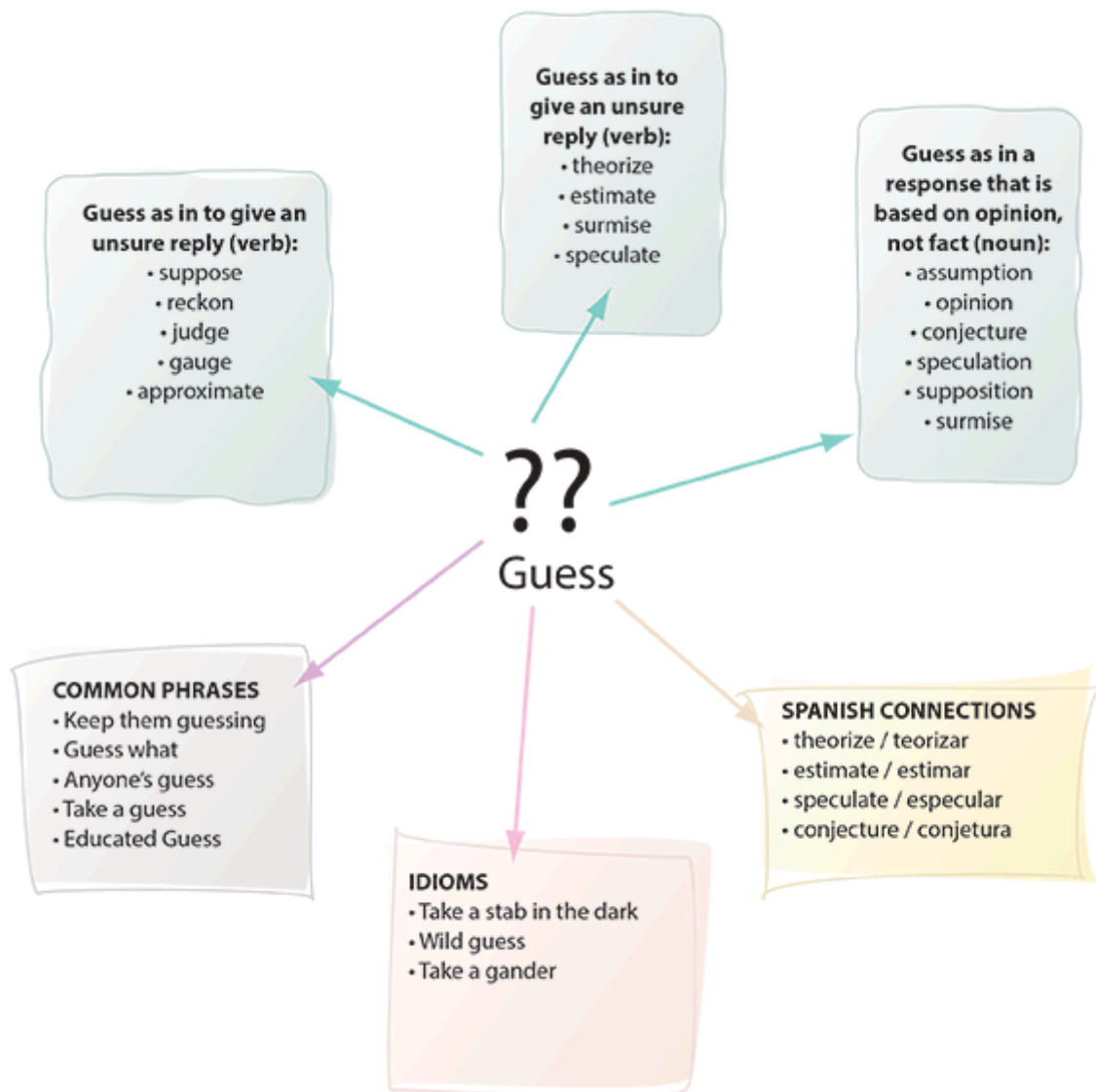


Synonym Networks in Narrative Texts

Prolific Groups of Synonyms

Communication/ Internal Processes (verbs)	Emotions (adjectives)	Movement (verbs)	Traits (adjectives) ¹
think	glad	go	funny
argue	sad	send	smart
observe	mad	start	brave
guess	selfish	stop	selfish
say	fear	stay	shy

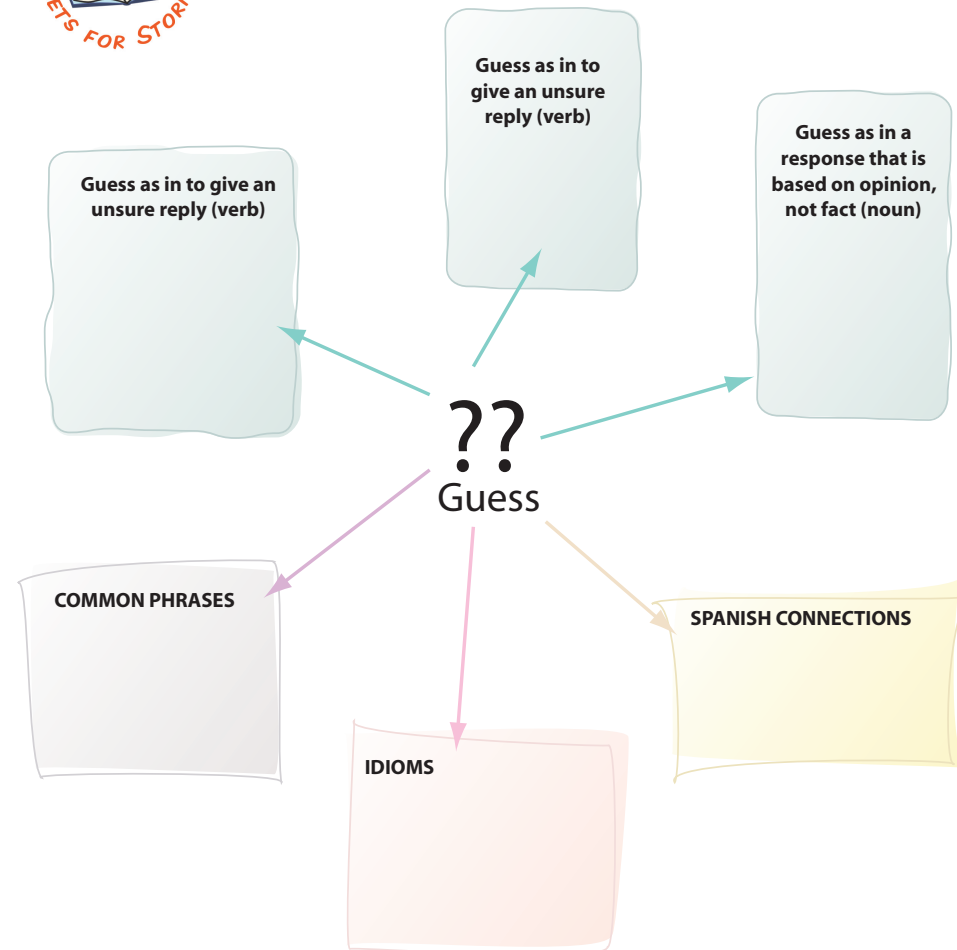
SUPER SYNONYM SETS FOR STORIES



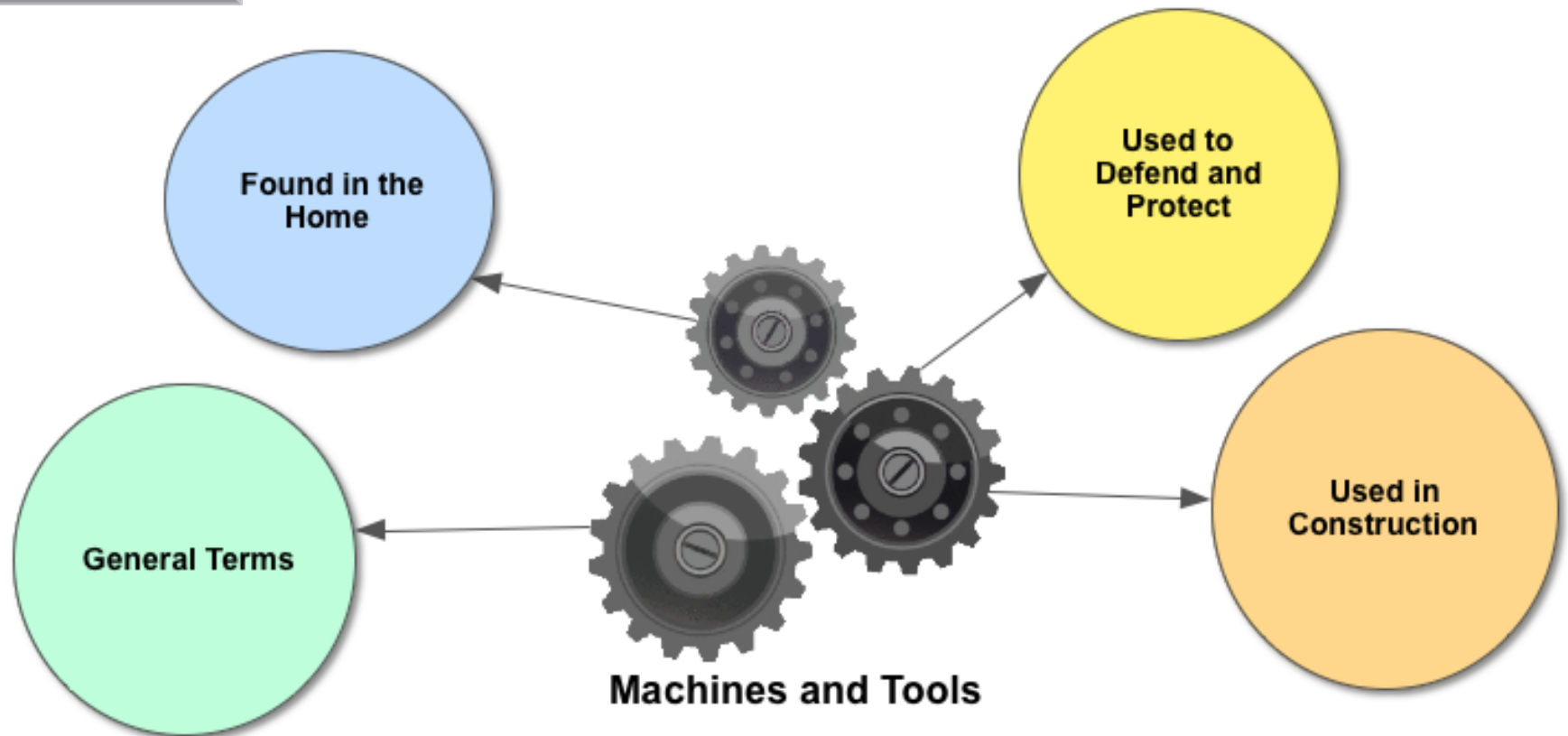


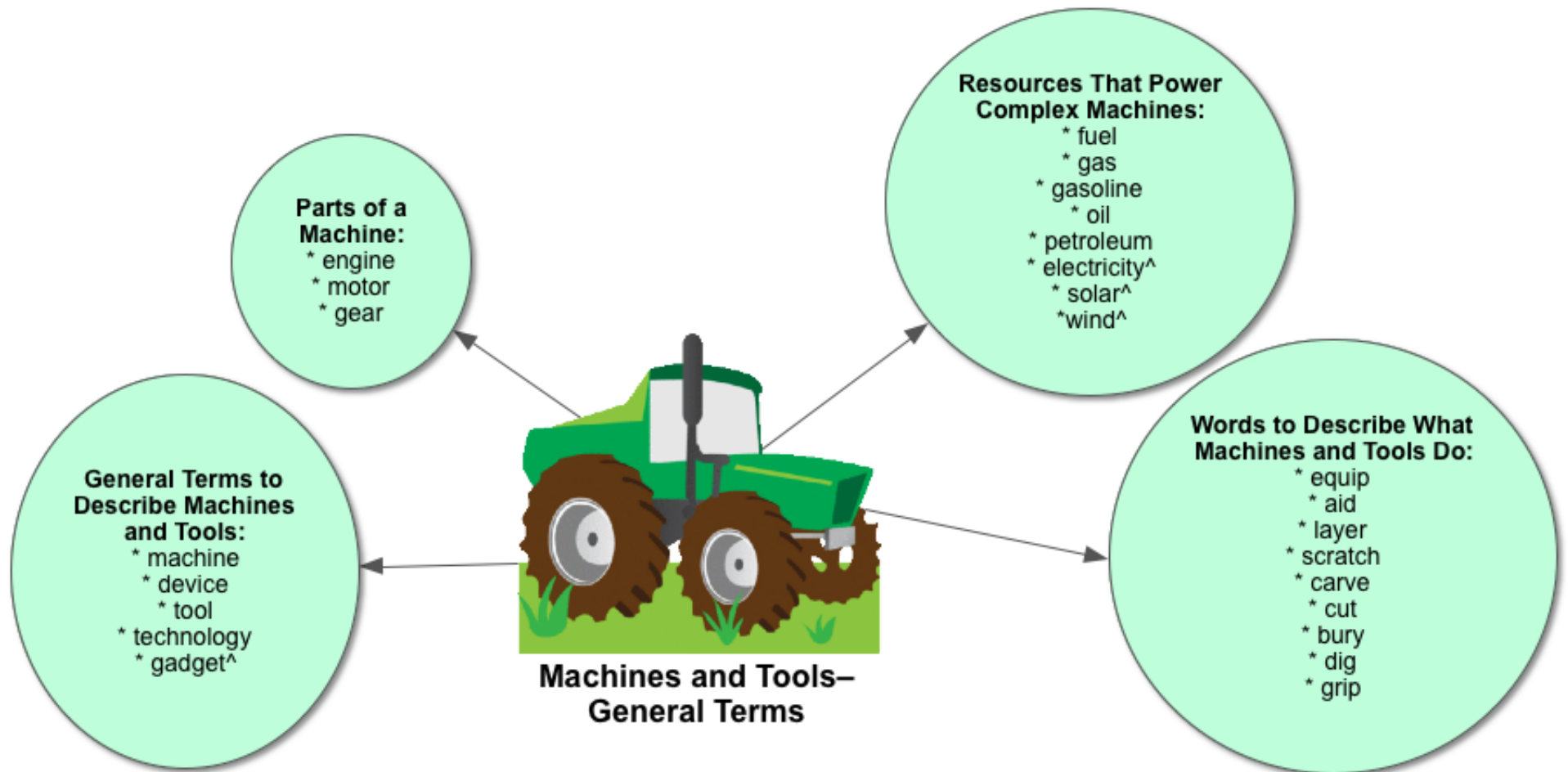
S4-02

Guess

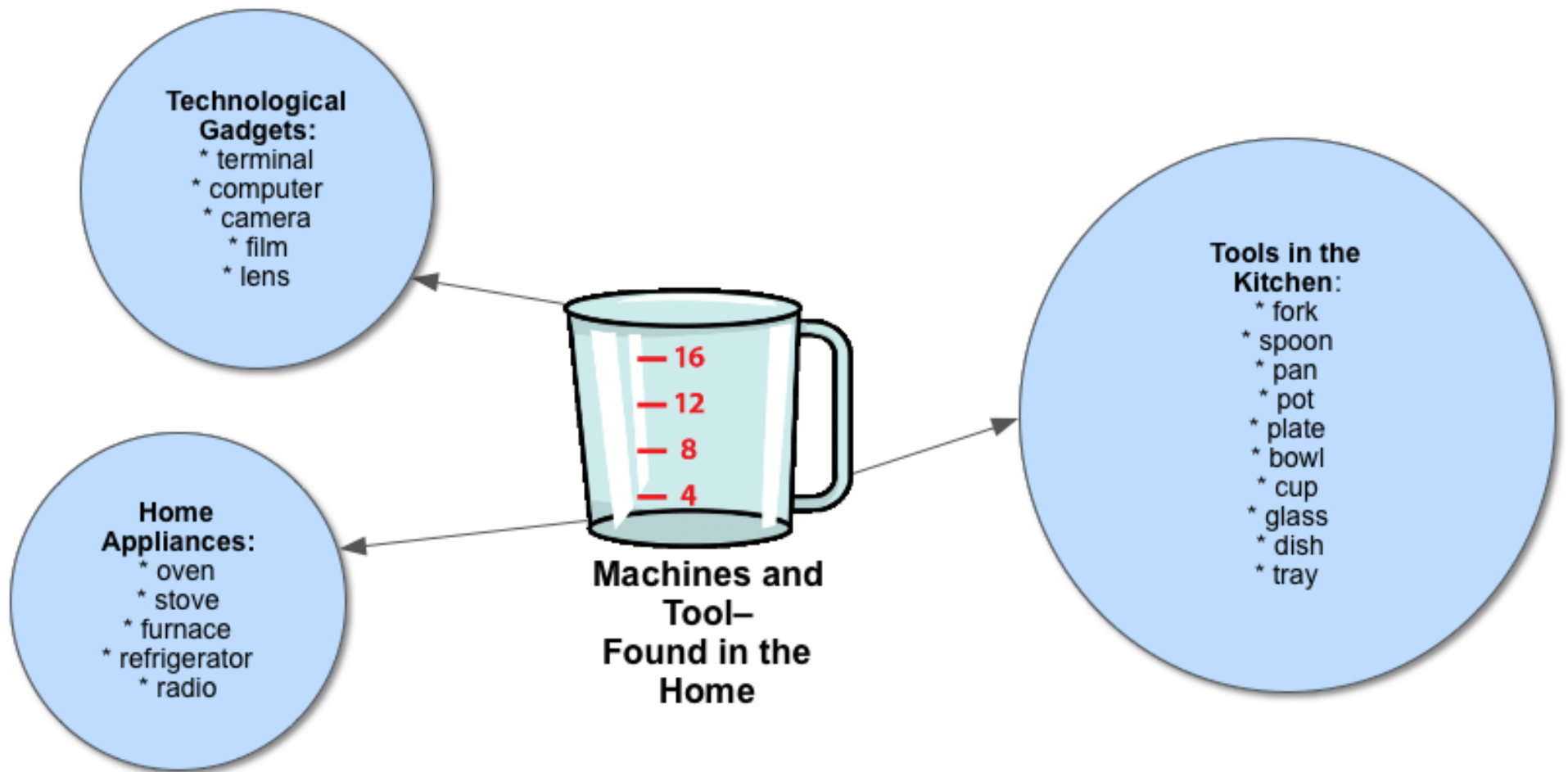


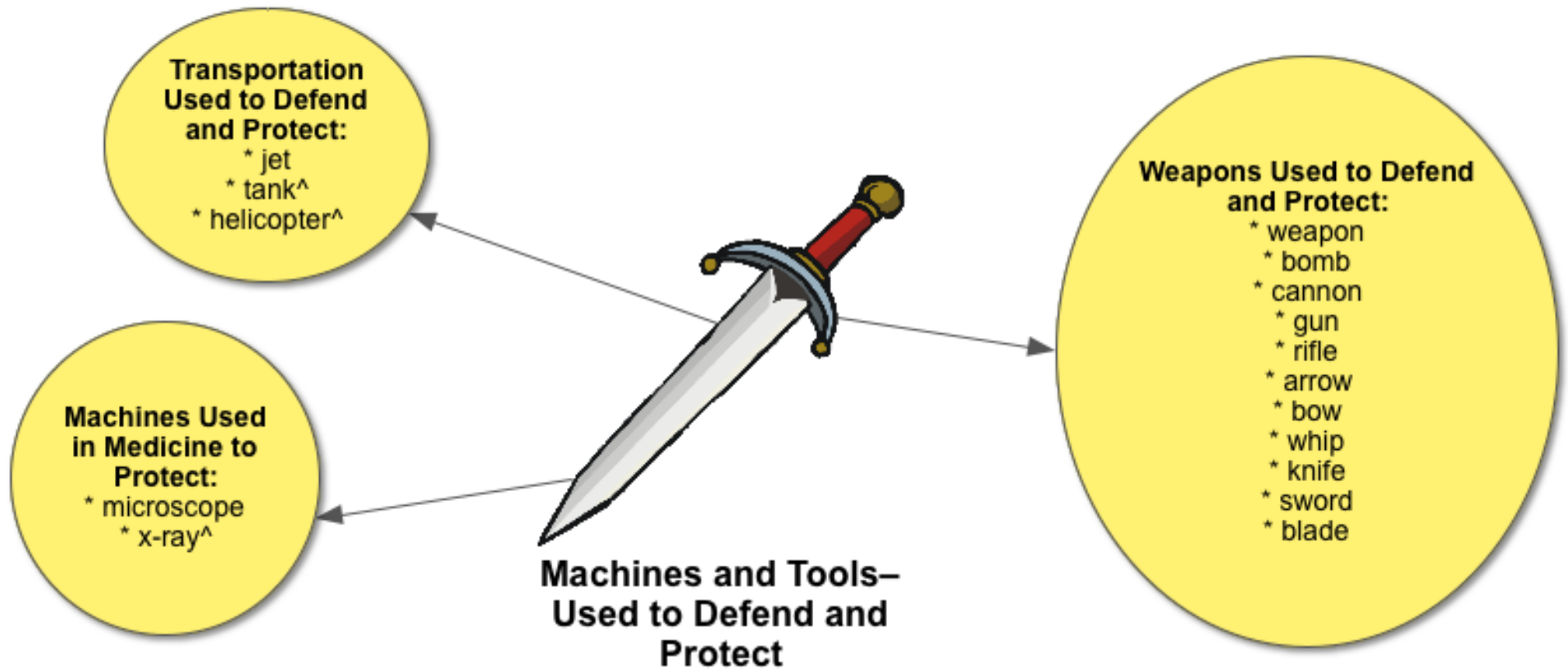
Topical Networks in Informational Texts



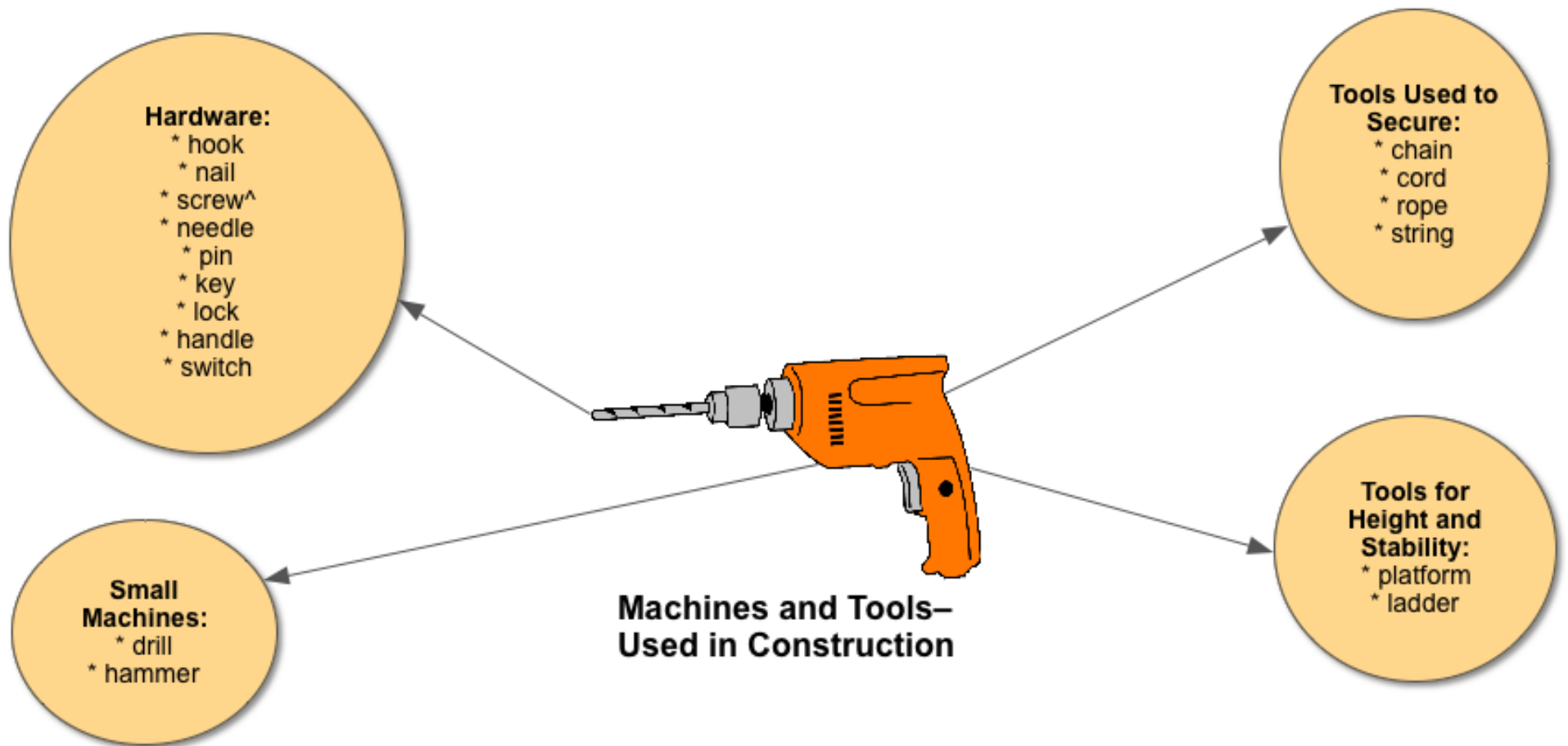


^ non core vocabulary words added to supplement concept





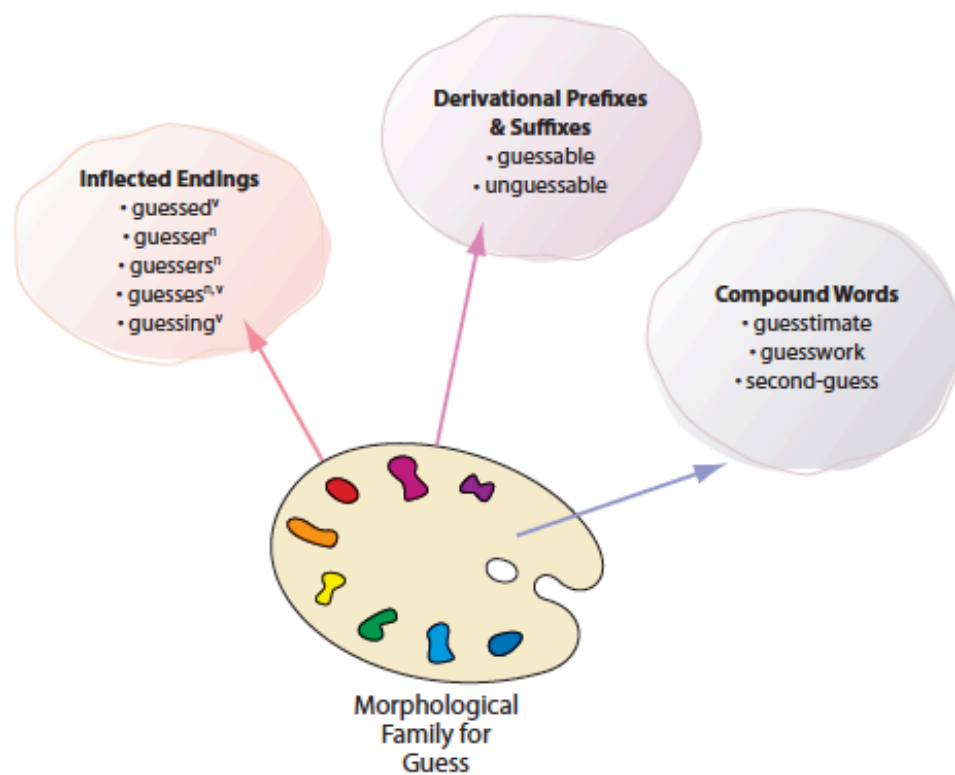
^ non core vocabulary words added to supplement concept



Word Action #4:

- Teach students words in families, *never* just single words:
 - Inflected endings
 - Derivatives (i.e., prefixes & suffixes)
 - Compounds

Guess



ⁿ Guess used as a noun

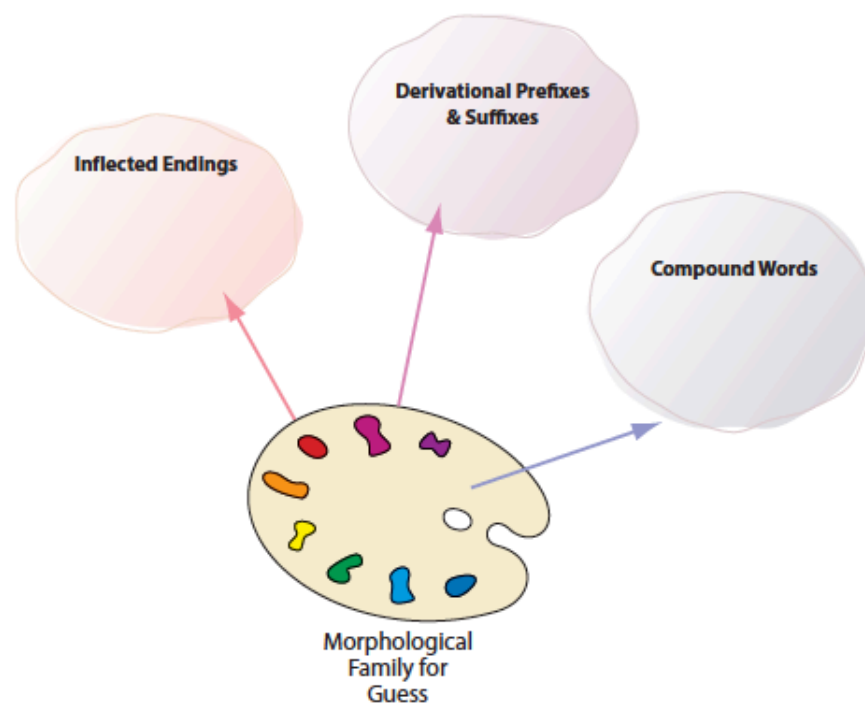
^v Guess used as a verb





S4-02

Guess



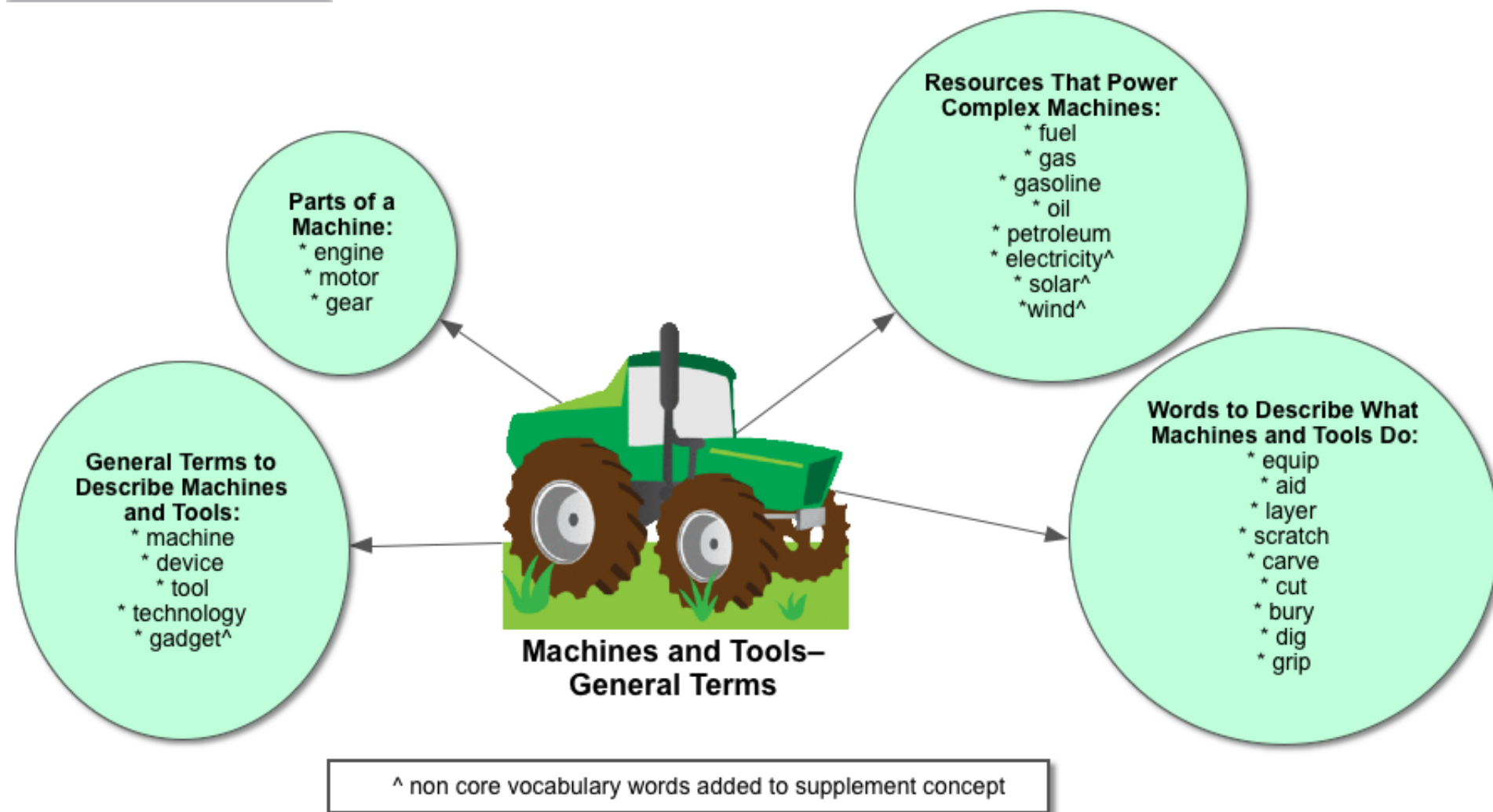
ⁿ Guess used as a noun

^v Guess used as a verb



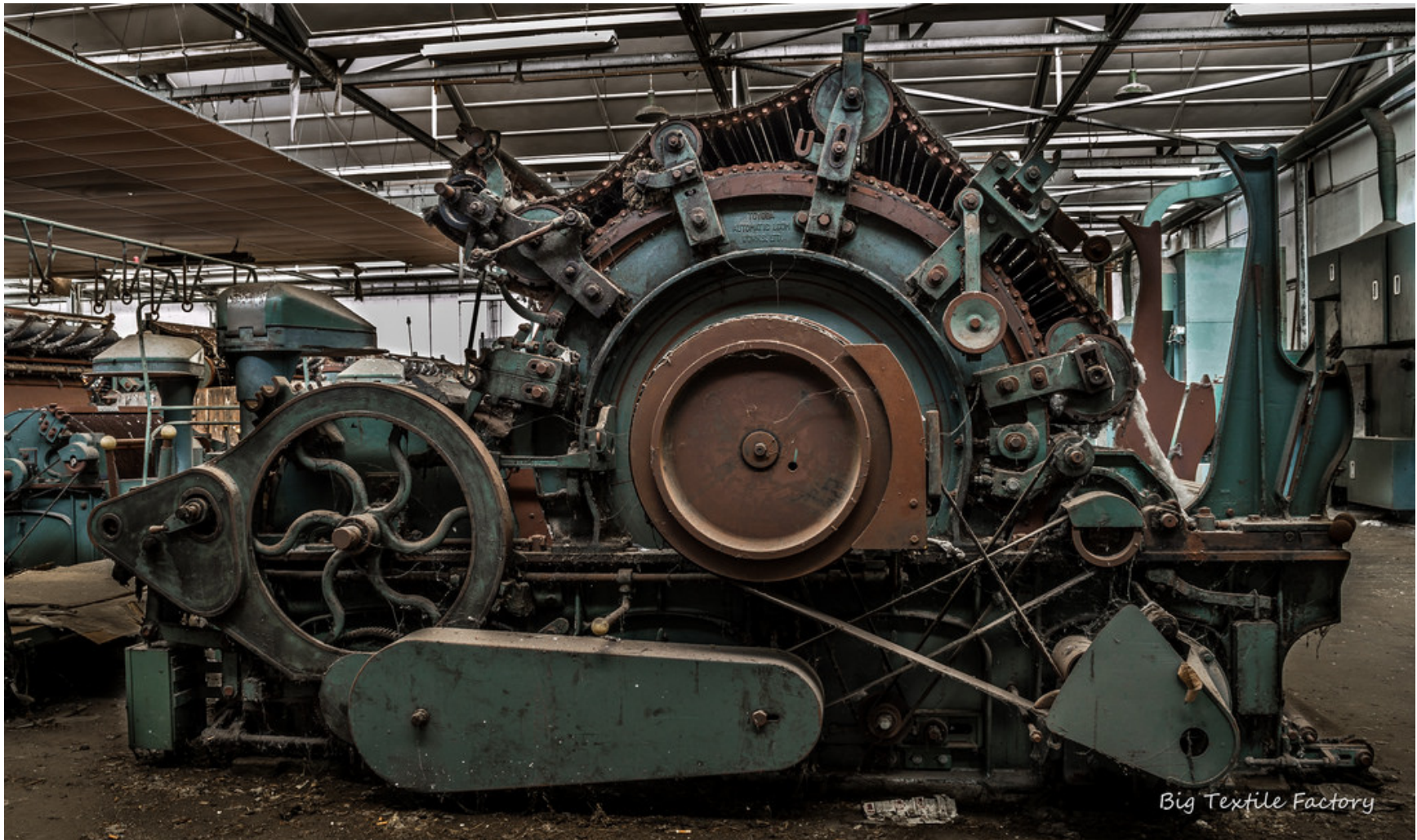
Word Action #5

- When appropriate, introduce new concepts with pictures.



machine

(ma·chine)



Big Textile Factory

technology (tech·nol·o·gy)

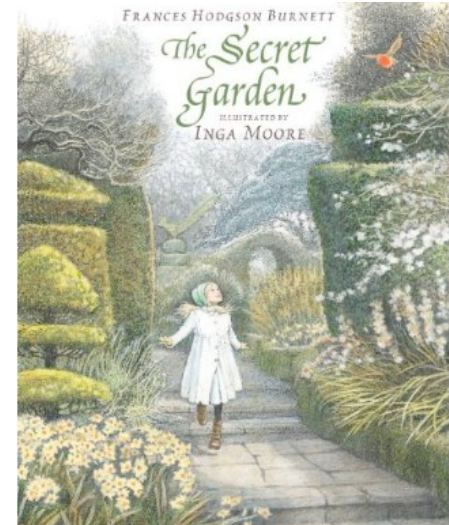
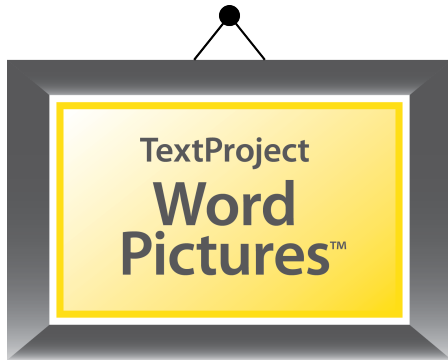


device
(de·vice)

gadget
(gad·get)



tool
(tool)



The Secret Garden

Written by Frances Hodgson Burnett

Gr 4-5 Text Exemplar – Stories

CCSS, Appendix B



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Inside carriage (car riage) of a train

“comfortably
cushioned corner”



Brougham (brough am)



Picture: Profile view of Rauch and Lang Brougham Coach circa 1890. Photo taken in 2007 by Epavels. Photo was released into public domain.

Whitewashed cottages (white washed cot tages)



Word Fact	Word Action	Open-Access Resource
1. Texts have more rare words than talk and English has more words than can be taught.	1. Teach students to expect new words in texts.	1. <u>Talking Points for Teachers: New Words in New Texts</u>
2. Small group of words does heavy lifting in text.	2. Expose students to many topics & increase reading volume.	2. <u>FYI for Kids, Talking Points for Kids, SummerReads</u>
3. Words are part of networks—synonym sets in narratives and topically related words in informational texts	3. Teach networks of similar-meaning words (stories) and networks of concepts in topics (informational texts).	3. • <u>Synonym Clusters in Narratives: Super Synonym Sets for Stories (S⁴) & Exceptional Expressions for Everyday Events (E⁴)</u> • <u>Topical Clusters in Informational Texts: Word Pictures--Core Vocabulary & Content Areas</u>
4. Words are part of families.	4. Teach words in families.	4. S ⁴ & E ⁴
5. Concrete words are learned faster than abstract ones.	5. When appropriate, teach new concepts with pictures.	5. <u>Word Pictures--Core Vocabulary, Literature Words, Content Areas</u>

Stories of Words: Native American Languages

By: Elfriede
& Lynn

Learning About Words

"Look at that moose! It's dripping wet, and it has a mouthful of weeds!" This person is speaking English, but *moose* is not an English word. Instead, it's from a Native American language that may have meant "he strips off." That's because moose eat bark they strip off trees.

The settlers from England who landed in North America in the 1500s found places, animals, and plants they'd never seen before. Sometimes, they named these things for animals, plants, or even places that looked like those in their home countries. Sometimes, they named them with words they borrowed from another language. These are two ways words enter a language.

The Native American groups in North America spoke languages that are very different from English. In addition, there may have been as many as a thousand different Native American languages. Often, Native Americans and settlers invented sign language that allowed them to communicate with each other. In that way, both languages grew and the people began to understand one another.

Stories of Words: Food



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



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



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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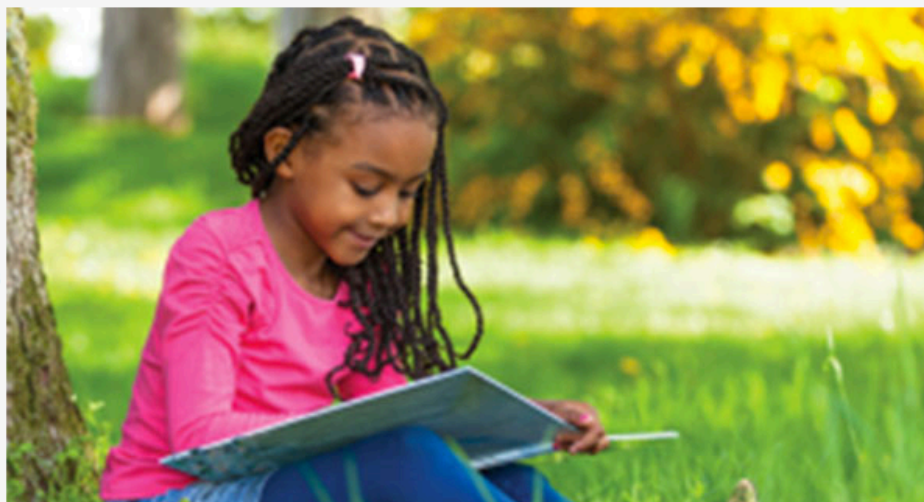
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