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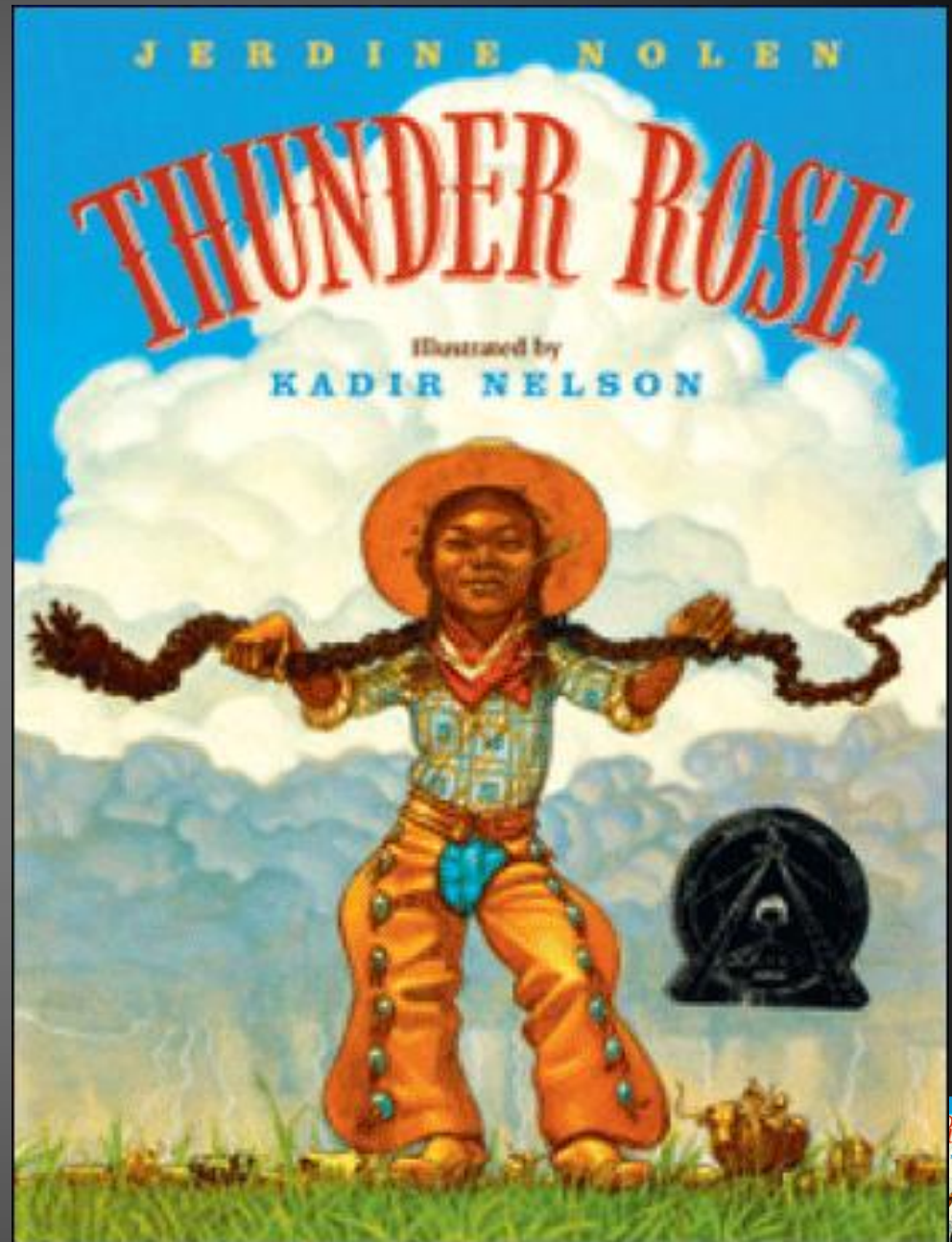
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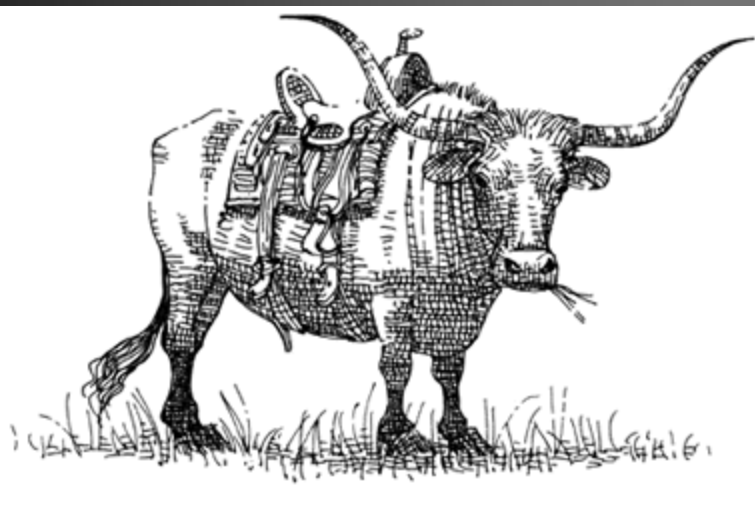
Study Skills:

Genre : Tall Tale

Vocabulary Strategy: Context Clues
(Homonyms)

Comprehension Skill: Cause and Effect

Comprehension Strategy: Monitor and Fix
Up



Name _____

Family Times

Summary

Thunder Rose

Thunder Rose is an amazing girl! As a baby she drank milk straight from the cow. Rose constructed a building of iron and wood at age nine, and she could rustle a wild steer with her own hands by twelve. Once, Rose calmed two churning tornadoes with the song her parents sang for her as a baby. All in a day's work for the girl with thunder in her veins.

Activity

The Taller the Better Tall tales use exaggeration to tell the story of impossible events, often because of some superhuman ability of a character. With a family member, make up your own tall tale about someone in your family. Don't hold back—the taller, the better.



Comprehension Skill

Cause and Effect

A **cause** is what makes something happen. An **effect** is what happens as a result of the cause. An effect may have one or more causes. Sometimes authors will use words such as *because* and *so* to show cause and effect.

Activity

The Why of the What Read a story with a family member. After any major event occurs, pause and identify why the event happened. There may be one thing that caused it, or there may be two or more causes.



Lesson Vocabulary

Words to Know

Knowing the meanings of these words is important to reading *Thunder Rose*. Practice using these words.

Vocabulary Words

branded marked by burning the skin with a hot iron

constructed fitted together; built

daintily with delicate beauty; freshly and prettily

devastation waste; destruction

lullaby song for singing to a child

pitch thick, black, sticky substance made from tar or turpentine

resourceful good at thinking of ways to do things

thieving stealing

veins blood vessels that carry blood to the heart from all parts of the body

Grammar

Subjects and Predicates

A complete sentence must have a **subject** and a **predicate**. The subject is the word or group of words that tells whom or what the sentence is about. The predicate is the word or group of words that tell something about the subject. *For example: Michael is supposed to go to bed.* “Michael” is the *subject* and “is supposed to go to bed” is the *predicate*. If a sentence does not have one of each, it is not a sentence but a **sentence fragment**.

Activity

Sentence Junction With a family member, have one of you write down six numbered subjects on a piece of paper. They could be words like “I,” “My dog,” etc. Have the other person write down six numbered predicates on a separate sheet of paper. These could be phrases like “stared at my homework,” “do silly things,” etc. Now take turns rolling two numbers on a number cube. Use each pair of numbers to join subjects and predicates from your lists into new sentences. What kinds of inventive sentences can you come up with together?

Practice Tested Spelling Words

| | | | |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |

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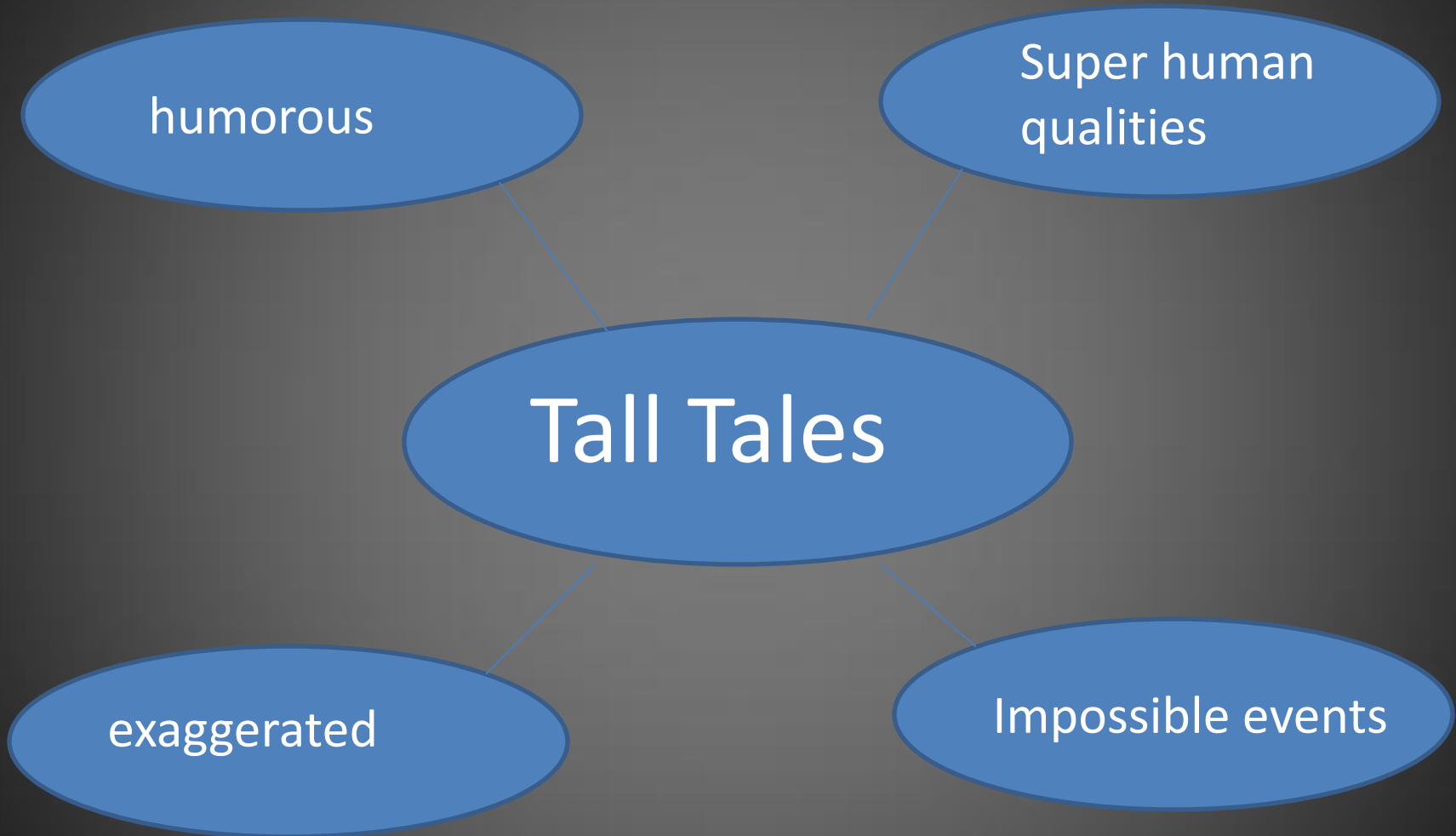


Question of the Week: How can nature challenge us?

Daily Questions:

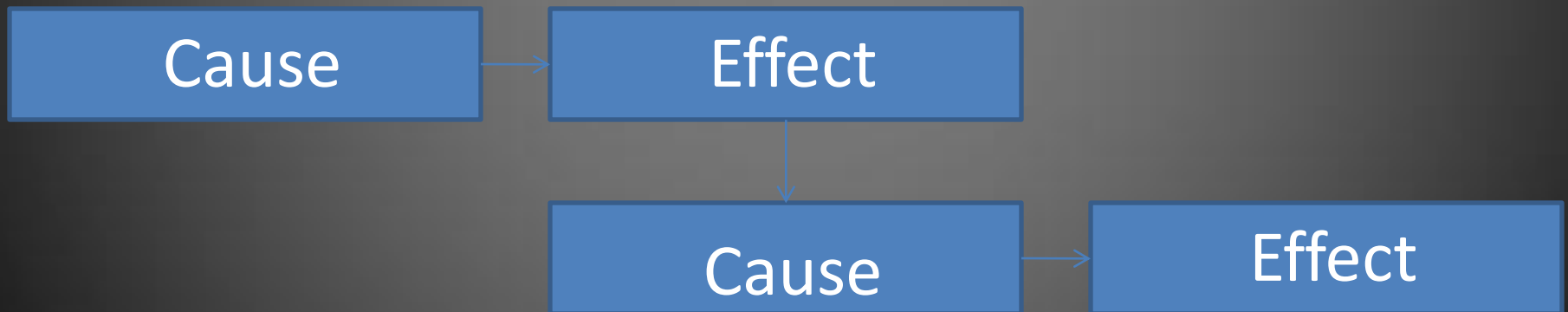


Activate Prior Knowledge



Cause and Effect

- An effect is what happened as the result of a cause. A cause is what made something happen.
- Words such as *why*, *because*, and *as a result* are clues to cause-and-effect relationships.
- If there are no clue words, ask yourself, “Why did this event happen? What happened as a result of this event?”
- An effect may become the cause of another effect.



Monitor and Fix Up

Good readers make sure they understand what they are reading. If you don't understand how causes result in certain effects, pause. Ask yourself, "What don't I understand?" You might decide to review what you've read and read on to find out what happens.



The Real THUNDER and Lightning

Some tall tales and myths give fanciful explanations for things that happen in nature, such as thunder and lightning. These stories are fun to read, but the real explanations can also be interesting.

The real cause of lightning involves electrical charges. Inside a storm cloud, a strong positive electrical charge may form near the top of the cloud, and a strong negative charge near the bottom. When these opposite charges flow toward each other, lightning flashes inside the cloud. When opposite charges flow from one cloud to another, lightning flashes between the clouds. When negative charges at the bottom of a cloud move down toward positive charges on Earth, lightning flashes from the cloud to the ground. Watch out!

Thunder happens only when there is lightning because lightning causes it. Thunder results from the rapid heating of the air along a lightning flash. The heated air expands. As a result, it creates a sound wave. Then the claps and rumbles of thunder are heard.

Skill Look at the clue word *cause* here. It tells you that you will read about the cause of lightning. Get ready to start a graphic organizer.

Strategy Do you feel you understand what causes lightning inside a cloud? If not, reread the first part of the second paragraph.

Skill What causes lightning that flashes from a cloud to the ground? Make a graphic organizer, such as a drawing, if you need help.

Strategy Do you feel you understand what causes lightning and what causes thunder? If not, which parts of the article should you reread?

Write:

1. Read "The Real Thunder and Lightning." Make a graphic organizer like the one above to show the cause of lightning that flashes inside a cloud.
2. Use your graphic organizer to write a paragraph that explains the cause of thunder. If you have difficulty, reread the last paragraph to see if that helps.



Name _____

Cause and Effect

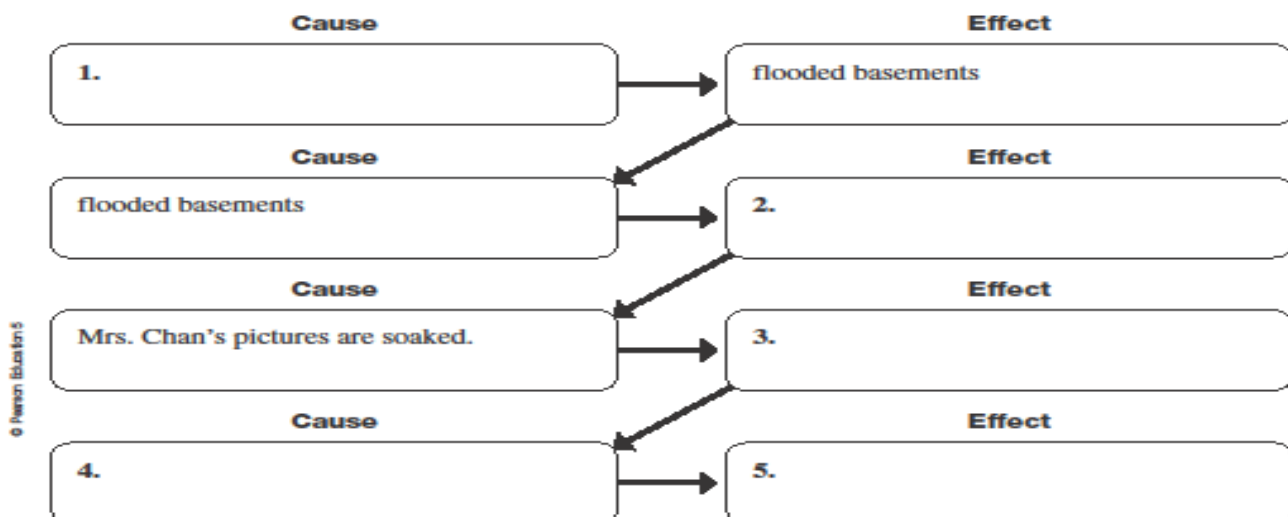
- A **cause** is what makes something happen. An **effect** is what happens as a result of the cause.
- If there are no clue words, ask yourself, "What made this event happen? What happened as a result of this event?"
- An effect may become the cause of another effect.

Directions Read the following passage and complete the diagram below.

By the third day of non-stop rain, no one on our street could keep the water out of their homes. The homes that had basements were hit hardest. Basements were flooded in spite of efforts to pump the water out. Toys, washing machines, and furniture in basements were soaked through completely.

Our neighbor, Mrs. Chan, was so

sad because all her photographs of her grandchildren had been in her basement. Her granddaughter May was my best friend, and I had May's school picture in my wallet. I wrapped it in a plastic bag, put on my raincoat, and ran to Mrs. Chan's house. Just as I handed Mrs. Chan May's picture, a ray of sun peeked out from behind a cloud.



Home Activity Your child identified causes and effects in a short passage. While working around the house, have your child explain to you the effects of one of the chores. Then ask your child to figure out if the effect becomes the cause of another effect.



Name _____

Cause and Effect

- A **cause** is what makes something happen. An **effect** is what happens as a result of the cause.
- If there are no clue words, ask yourself, "What made this event happen? What happened as a result of this event?"
- An effect may become the cause of another effect.

Directions Read the following passage. Then answer the questions below.

Walking home, Arthur could hardly see where he was going. The fierce wind whipped the snow around. At least a foot of snow covered the sidewalks. His socks, shoes, and pant legs were soaked, and his hands felt like ice. He knew his dad would be home from work when he got there. He just hoped that there would be some warm cocoa and popcorn waiting.

Finally, he reached his door. As he hurried inside, he could smell cocoa and popcorn. Arthur changed out of his wet clothes and sat down to enjoy his snack with his dad. But the best part of all was the news on television. Because of the bad storm that Arthur had walked through, there would be no school the next day!

1. Why was Arthur unable to see where he was going?

2. What were some of the effects of the snowstorm in the neighborhood?

3. What was an effect of the snowstorm that pleased Arthur?

4. If you had a day off from school because of bad weather, what would you do with it?

5. What was the cause of the last day you had off from school, other than a weekend?

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Home Activity Your child read a short passage and answered questions about cause and effect. With your child, write a short story about a hero. Include what caused the person to act heroically and the effects of his or her heroism.



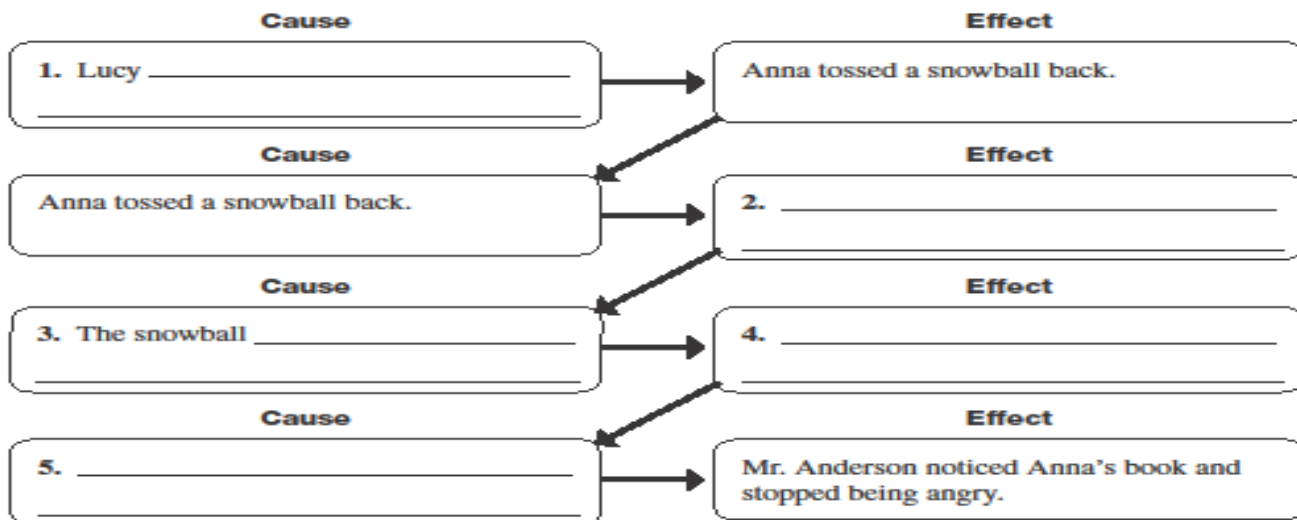
Cause and Effect

- A **cause** is what makes something happen. An **effect** is what happens as a result of the cause.
- If there are no clue words, ask yourself, "What made this event happen? What happened as a result of this event?"
- An effect may become the cause of another effect.

Directions Read the following passage.

Anna wished she hadn't done it. She didn't even like snowball fights. She was just leaving the library with a novel she couldn't wait to read. A bunch of kids from her school came running up the street, laughing and throwing snowballs at one another. Anna knew one of the girls, Lucy, so when Lucy tossed a snowball at Anna, Anna tossed one back. But who knew that Lucy was going to slip on some ice at that exact moment? The snow ball

flew right over Lucy's head and squarely into Mr. Anderson's nose. Anna rushed over to apologize. Mr. Anderson was about to say something angry. But when he saw the book Anna was carrying, he started to smile. "Do you know," he said, "when I was your age that was my favorite book. I hope you enjoy it as much as I did." "I'm sure I will," Anna replied with surprise. "I can't wait to read it!"



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Home Activity Your child read a short passage and identified the causes and effects. Read a short story with your child. Have your child explain to you the effects of one of the story's causes. Then ask your child to figure out if the effect becomes the cause of another effect.

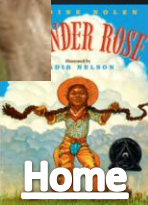


| Word | Know | Have Seen | Don't Know |
|-------------|------|-----------|------------|
| branded | | | |
| constructed | | | |
| daintily | | | |
| devastation | | | |
| lullaby | | | |
| pitch | | | |
| resourceful | | | |
| thieving | | | |
| veins | | | |



BRANDED

Marked by burning the skin with a hot iron



CONSTRUCTED

Put together; fitted together; built



DAINTILY

With delicate beauty; freshly and prettily



DEVASTATION

The act of laying waste; destruction



Home

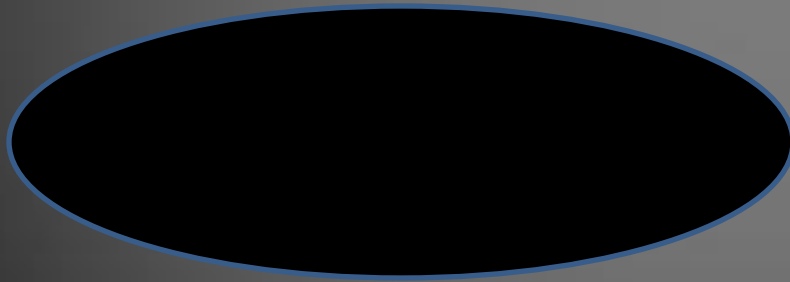
LULLABY

Song for singing to a child; soft song



PITCH

A thick, black, sticky substance made from tar or turpentine



RESOURCEFUL

Good at thinking of ways to do things; quick witted



THIEVING

Stealing



VEINS

Membranous tubes forming part of the system of vessels that carry blood to the heart.



More Words to know:

Cantankerous: Ready to make trouble; ill-natured

Irascible: easily made angry

Varmint: an objectionable animal or person
(DIALECT)



Practice Lesson Vocabulary

Does a mother sing a lullaby to her baby?

Can a herd of cattle daintily stampede?

Is the sunrise the color of pitch?

Tornadoes can cause devastation to _____.

Veins run through our _____.

A thieving bunch spends their time _____.

A new calf is branded with the _____ of its owner.



Vocabulary Strategy: Homonyms (Context Clues)

When you are reading, you may come across a familiar word used in an unfamiliar way. The word may be a homonym. Homonyms are spelled the same, but they have different meanings. For example, feet can be units of measurement or the end parts of the legs. You can use the context –The words and sentences around the word- to figure out which meaning is being used.

1. Reread the sentence in which the homonym appears.
2. Look for clues to the homonym's meaning.
3. If you need more help, read the sentences around the sentence with the homonym. Look for clues or additional information that suggests the homonym's meaning.
4. Try the meaning in the sentence. Does it make sense?

Activity:

As you read “The Tale of Carrie the Calf,” look for homonyms. Use the context to determine the meanings of the homonyms.



Name _____

Vocabulary**Directions** Choose the word from the box that best matches each definition. Write the word on the line.

- _____ 1. blood vessels that carry blood to the heart from all parts of the body
- _____ 2. song for singing to a child
- _____ 3. stealing
- _____ 4. a thick, black, sticky substance made from tar or turpentine
- _____ 5. fitted together; built

Check the Words You Know

___branded
 ___constructed
 ___daintily
 ___devastation
 ___lullaby
 ___pitch
 ___resourceful
 ___thieving
 ___veins

Directions Choose the word from the box that best completes the sentences below. Write the word on the line shown to the left.

- _____ 6. The rancher _____ his cattle with the symbol from his ranch so nobody else could claim them.
- _____ 7. The cracks in the roof were sealed with _____.
- _____ 8. Grandma and Grandpa danced _____ in time with the music's gentle beat.
- _____ 9. When no one else could think of how to solve the school's litter problem, Marisa impressed the principal with her _____ idea.
- _____ 10. The tornado caused a lot of _____ when it whipped through town and ripped several homes from their foundations.

Write a Friendly Letter

On a separate sheet of paper, write a friendly letter to someone living out of town about an event that happened where you live. Use as many vocabulary words as you can.

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Home Activity Your child identified and used vocabulary words from *Thunder Rose*. Work with your child to learn the words and their definitions. Have your child create colorful flash cards to do so.



Vocabulary • Context Clues

- **Homonyms** are words that are spelled the same but have different meanings.
- Look for **context clues**— words and sentences around a word—to figure out which meaning is being used in the sentence.

Directions Read the following passage about a hurricane. Then answer the questions below. Look for homonyms as you read.

As Pedro scaled the ladder to the roof, he felt the blood in his veins pumping through his body. He was the first person to get a look at the destruction the hurricane had created. He looked at the roof and reminded himself to bring up a bucket of pitch next time to repair the new cracks. Looking out over the countryside, he saw that many buildings would need to be constructed again. He started gathering

broken branches to pitch down to the ground below. Then he paused and took a deep breath, thinking about what this disaster had done to his community. He knew that none of his neighbors would have to pitch tents and live in their yards while repairs were made to their homes. The people of his town would help each other find shelter, and everyone would be fine.

1. *Vein* can mean “a blood vessel” or “a crack in a rock filled with a mineral deposit.” How is it used in the passage? How can you tell?

2. What does *pitch* mean in the third sentence of this passage? What clues help you understand the meaning used in this sentence?

3. What does *pitch* mean in the fifth sentence of this passage? What clues help you understand the meaning used in this sentence?

4. To *scale* something can mean “to climb up something” or “to measure something.” How is it used in this passage? How can you tell?

5. What does *pitch* mean in the second-to-last sentence of this passage? What clues help you understand the meaning used in this sentence?



Home Activity Your child read a short passage and used context clues to understand homonyms, words that are spelled the same but have different meanings. With your child, make a list of homonyms. Challenge your child to make up a sentence using each meaning.



Genre: Tall Tale

An amusing story told with great exaggeration and bigger-than-life characters.

Examples:



**What challenges does
Rose set up for herself
and how does she
meet them?**



Preview and Predict

Preview the selection title and illustrations and discuss the topics or ideas you think the selection will cover. Use selection vocabulary words as you talk about what you expect to learn.



Guided Comprehension:

Reread p. 48, paragraph 2. What do you learn about Rose?

Why does the author use slang, or informal language, in the dialogue?

Why did Rose's parents call her Thunder Rose?

Find an example of exaggeration on p. 51.

Use context clues to determine the meaning of punctuate on p. 52, line 2.

Reread paragraph 1 on p. 52 and paragraph 1 on p. 53. Based on these actions, how would you describe Rose?

What effect did Rose's lullaby have on Tater, the bull?

Reread paragraph 5 on p. 55. Why do you think Rose blushed when her ma praised her for being clever?

Think about what has happened so far in the story. What are some of Rose's accomplishments?

What does steer mean in paragraph 4? What clues helped you figure out the meaning?



Guided Reading Continued:

What problems did the lack of rain cause?

“I’ve got to do something about this,” Rose declared. What does this tell you about Rose?

What caused the storm? Why?

Why does the author use hyperbole by saying, “her eyes flashed lightning. She bit down and gnashed thunder from her teeth,” instead of just saying she was angry?

What problem did Rose face on p. 60?

How do you think Rose felt as she faced her challenge? Why?

How was this challenge different from the other challenges Rose face? How was it the same?

Why do you think Rose’s voice had the effect it did on the tornadoes?

What do you think the author means by the "bull's-eye that was set at the center of her heart" in the last sentence?

Text To Text Think about the challenges Rose faced. Did Rose's challenges remind you of challenges faced by characters in other stories you've read?



Plot

The plot is the organization of story events.

The plot usually includes a problem or conflict, rising action, climax, and outcome.

Activity:

Have students work in groups to go through the story and identify the plot of Thunder Rose



Name _____

Plot and Character

Directions Read the scene. Then answer the questions below.

Alice was rearranging her collection of glass birds. She'd just added a tiny and fragile glass hummingbird to her collection. Just as she finished, her neighbor Jim stopped by with his dog, a nervous and jumpy cocker spaniel. Jim asked, "Can you feed my dog while I'm away tomorrow?" Before she could answer, the phone rang, and Alice left the room to answer it. As she hung up, a crack of thunder pounded through the air. Alice heard Jim's dog barking frantically and then heard a loud crash! Alice didn't

dare imagine what devastation the dog had caused. The veins in her head throbbed as she returned to the living room. She saw Jim looking guilty with his dog hiding behind his legs. Jim looked up at Alice and said, "I hope I didn't startle you. I was going to the recycling center after I left here. I dropped my bag of bottles when I heard the thunder." Alice turned to look at the display case with her glass birds. Every bird was in its place. Alice told Jim, "No problem. It was quite a noise. By the way, I'd be happy to feed your dog."

1. What was Alice doing at the beginning of the story?

2. What did Alice think had happened when she heard the crash?

3. How did the writer describe the dog? How does the description of the dog fit with what Alice thought happened?

4. How are Jim and his dog described when Alice returns to the living room? How does their behavior fit with what Alice thought happened?

5. On a separate sheet of paper, write a version of this story in which Jim's dog breaks Alice's collection of birds. Try to use what you know about Alice, Jim, and the dog from this passage to help you figure out how they will react.

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Home Activity Your child has read a short passage and answered questions about the characters and the plot. Tell your child a story about a family member and have them identify the plot and the characters.



Author's Craft

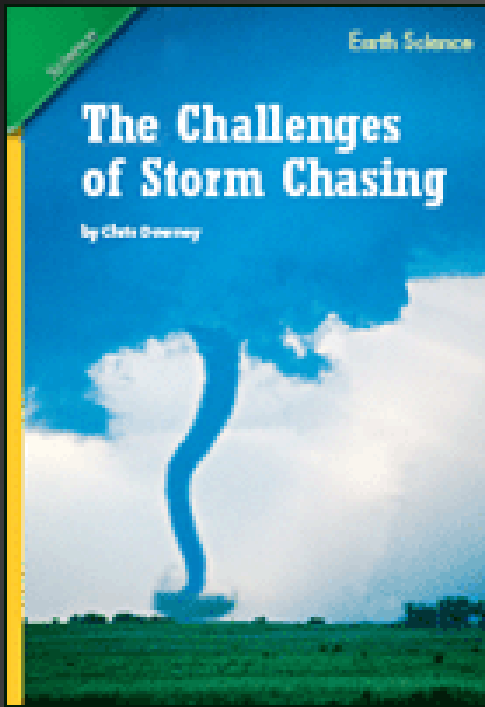
When an author goes about creating a piece of writing, he or she makes choices about the genre, or kind of writing, it will be; who the characters are; what the setting and plot will be; the point of view from which it will be written; and what type of language and style he or she will use.

Review with students a few of the choices the author made in *Thunder Rose* about genre (*tall tale*), point of view (*third person*), and language and style (*exaggeration, humor*).

Have small groups discuss and write about other choices Jerdine Nolen made when writing *Thunder Rose*.

1. Who are the characters she chose to write about?
2. What was the setting she chose for the story?





SUMMARY

In Tornado Alley, which crosses the plains of the United States, storm chasers track tornadoes to learn more about them and to experience the thrill of seeing them up close. But storm chasing can be dangerous, especially when practiced by novice chasers.

Comprehension Questions:

What are some of the goals of a storm chaser? (pg. 5)

What are some popular storm-tracking tools? (pg. 7)

What effect do “renegade” storm chasers have on others? (pg. 9)

What makes a tornado funnel? (Pgs. 12-13)

What were the effects of the May 1999 Oklahoma tornado? (pg. 15)

How and when did storm chasing begin? (pg. 19)



Cause and Effect

- A **cause** is the reason something happens. The **effect** is what happens.
- A cause may have more than one effect, and an effect may have more than one cause.
- Sometimes a cause is not directly stated, and you need to think about why something happened.

Directions Read the following passage. Then answer the questions that follow.

Tornadoes form when a layer of cold air moves over a layer of warm air. The lighter air rises up through the cold air. This makes the funnel cloud rotate as the air changes places. A tornado can do amazing damage to buildings, property, and land. Tornado winds, rising to a furious pitch, will rip through a town, and destroy everything in their path. Houses and mobile homes may be flattened, ripped apart, or carried away completely. A tornado can even peel the bark off trees!

But as dangerous as they are, tornadoes are a great source of delight for storm chasers. They love to seek out, or chase, tornadoes. Their task is a dangerous one. High winds can flip the chaser's vehicle or blow out car windows. Heavy rain and hail can make it hard to see. Flooding and fog can make traveling harder and might strand a chaser in the path of a storm. Lightning, a release of electricity in the atmosphere, is another danger for storm chasers. It can strike without warning!

1. Describe the cause of tornadoes.

2. What are two effects of tornadoes?

3. What is the cause for lightning, as stated in the passage?

4. What are two effects of tornadoes on storm chasers?

5. Would you like to be a storm chaser? Why or why not? Give examples from the reader to support your choice.

Name _____

Vocabulary

Directions Write the vocabulary word that best matches each definition below. One word, with two different meanings, is used twice.

Check the Words You Know

| | | |
|----------------|----------------|-------------|
| ___branded | ___constructed | ___daintily |
| ___devastation | ___lullaby | ___pitch |
| ___resourceful | ___thieving | ___veins |

1. the act of laying waste, destroying _____
2. likely to steal _____
3. with delicate beauty _____
4. thick, black, sticky substance made from tar _____
5. natural channels through which water flows _____
6. soft song sung to put a baby to sleep _____
7. good at thinking of ways to do things _____
8. marked by burning _____
9. tubes that carry blood through your body _____
10. put together _____

Directions Choose two vocabulary words and use each in a sentence below.

11. _____

12. _____



SUMMARY

Most storms cause few risks, but some—thunderstorms, flash floods, tornadoes, hurricanes, and blizzards—can be very dangerous. This book describes the effects of such storms and gives students tips on how to remain safe.

Comprehension Questions:

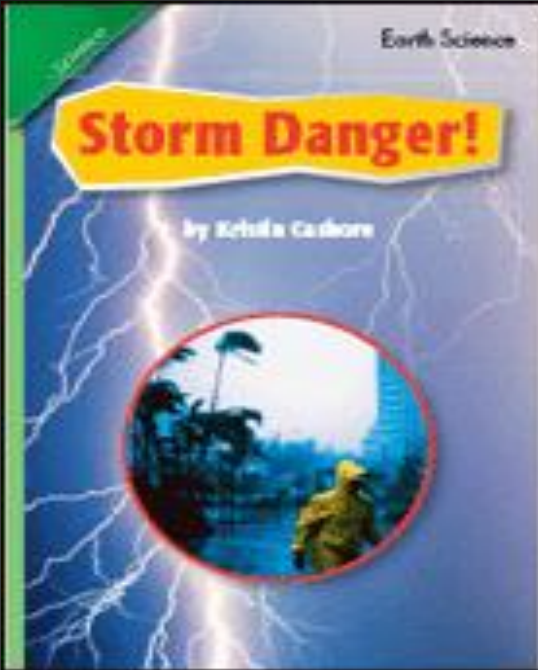
What are some common effects of thunderstorms? (pgs. 6-7)

If a boy and a tall tree were both standing in a field, which would lightning be most apt to hit? Why? (pg. 8)

Where do tornadoes tend to occur? (pg. 12)

What causes a hurricane? (pg. 14)

Name three things you can do to protect yourself during a blizzard? (pg. 17)



Name _____

Cause and Effect

- A **cause** is the reason something happens. The **effect** is what happens.
- A cause may have more than one effect, and an effect may have more than one cause.

Directions Read the following passage. Then fill in the chart that follows.

Tornadoes occur when a warm, humid air mass meets with a cool, dry air mass. This collision sometimes results in a powerful, swirling column of air. The tornado's swirling winds can exceed 300 mph. Tornadoes cause much damage by this sheer force of wind, but they also have a strong updraft that can lift and carry objects.

A tornado can lift cars into the air and tear trees out of the ground. It can pull roofs from houses, even if the houses are well constructed. Tornadoes can be strong enough to send glass and wood flying through the air.

| Tornado: Causes | Tornado: Effects |
|-------------------|-------------------|
| 1. _____ _____ | 1. _____ _____ |
| 2. _____ _____ | 2. _____ _____ |
| _____ | 3. _____ _____ |
| _____ | 4. _____ _____ |
| _____ | 5. _____ _____ |
| _____ | _____ |

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Vocabulary

Directions Complete each sentence with a vocabulary word from the box. One word with two different meanings is used twice.

Check the Words You Know

| | | |
|----------------|----------------|-------------|
| ___branded | ___constructed | ___daintily |
| ___devastation | ___lullaby | ___pitch |
| ___resourceful | ___thieving | ___veins |

- The _____ mother found a new safe spot for her son to wait out the storm.
- As the baby cried, her mother sang her a _____ to help her sleep.
- Blood flows through your _____.
- The tornado caused a massive amount of _____.
- The men used _____ to repair the loose tiles on the roof.
- The _____ teenagers began to hatch their plot to grab jewelry from the store.
- The tree was _____ black after it was struck by lightning.
- The _____ in the leaf helped distribute water.
- Jenny's home is _____ of stucco, with a tile roof.
- The ballerinas moved _____ across the stage.

Directions Write a paragraph about storms, using as many vocabulary words as you can.



SUMMARY

This book notes the vital role that weather plays in our lives and the challenges that exist in predicting weather accurately. The book also describes the role of meteorologists and the tools, both conventional and high-tech, that they use to forecast weather on land, at sea, and in the air.

Comprehension Questions:

From the chart, which days in the 10-day forecast show a low temperature of 54 degrees or higher? (Pg. 4)

Why would a meteorologists use a hygrometer? (pg. 13)

What causes the cups to spin faster In an anemometer? (pg. 13)

How are a radiosonde and dropwindsonde related? (Pg. 16 & 18)

How are the two weather maps different? (pg. 21)



Cause and Effect

- A **cause** is the reason something happens. The **effect** is what happens.
- A cause may have more than one effect, and an effect may have more than one cause.
- Sometimes a cause is not directly stated, and you need to think about why something happened.

Directions Read the following passage. Then answer the questions that follow.

Hurricanes are huge tropical storms. The warm humid air of the tropics rises. As the air rises, it cools, and the moisture condenses to cloud and rain drops. Heat energy is released in this condensation process. In addition, winds collide and push warm, moist air upward. This rising air reinforces the air that is already rising from the surface, so the circulation and wind speeds of the storm increase. A tropical storm with a wind speed of 74 miles per hour is classified as a hurricane. When a hurricane makes landfall it loses the tropical moisture and weakens rapidly. But it can cause massive damage before it does.

High winds are a primary cause of the loss of life and home destruction that can result from hurricanes. Winds create airborne projectiles out of trees and sharp objects that hurl through the air and then bang into homes, businesses and even people. In addition, flooding caused by the coastal storm surge of the ocean and the massive rains that come with hurricanes create damage. Hurricanes have destroyed fishing piers and other businesses, too.

1. What are two major causes of hurricanes?

2. Name two major causes of hurricane damage.

3. What is one major effect of hurricanes?

4. What is another major effect of hurricanes?

5. What might you do to prepare for a hurricane?

Name _____

Vocabulary

Directions Write the vocabulary word that best matches each definition below. One word is used twice.

Check the Words You Know

| | | |
|------------------|----------------|----------------------|
| ___anemometer | ___atmosphere | ___barometer |
| ___Doppler radar | ___hygrometer | ___meteorologists |
| ___radiosondes | ___troposphere | ___weather forecasts |

1. devices carried into the atmosphere by a balloon that use radio to gather and send data _____
2. method of tracking the movement of weather systems _____
3. device for measuring air pressure _____
4. device for measuring the speed of wind _____
5. device for measuring humidity _____
6. predictions about weather in the near future _____
7. the layer of atmosphere where weather occurs _____
8. scientists who study and predict the weather _____
9. the lowest, most dense layer of atmosphere _____
10. air that surrounds Earth _____

Directions Select two vocabulary words and use each in a sentence below.

11. _____

12. _____



Measuring Tornadoes

Why are the F-6 to F-12 tornadoes called “inconceivable”?

| RATING | ESTIMATED WIND SPEED | DAMAGE |
|------------------------------------|---|--|
| F-0 <i>(weak)</i> | 40–72 mph <i>(64–116 kph)</i> | Light: Damage to TV antennae, chimneys, and small trees (about 3 of 10 tornadoes are F-0) |
| F-1 <i>(weak)</i> | 73–112 mph <i>(117–180 kph)</i> | Moderate: Broken windows, mobile homes overturned, moving cars pushed off roads (about 4 of 10 tornadoes) |
| F-2 <i>(strong)</i> | 113–157 mph <i>(181–253 kph)</i> | Considerable: Roofs torn off, mobile homes and large trees destroyed (about 2 of 10 tornadoes) |
| F-3 <i>(strong)</i> | 158–206 mph <i>(254–331 kph)</i> | Severe: Cars lifted off the ground, trains overturned (about 6 of 100 tornadoes) |
| F-4 <i>(violent)</i> | 207–260 mph <i>(332–418 kph)</i> | Devastating: Solid walls torn apart, cars tossed, large objects become missiles (about 2 of 100 tornadoes) |
| F-5 <i>(violent)</i> | 261–318 mph <i>(419–511 kph)</i> | Incredible: Homes lifted off their foundations and thrown, straw and grass able to pierce tree trunks (fewer than 1 of 100 tornadoes) |
| F-6 to F-12 <i>(violent)</i> | 319–700 mph <i>(512–1,126 kph)</i> or <i>Mach 1, the speed of sound</i> | Inconceivable: Though it was once thought tornadoes could reach the speed of sound, scientists now believe F-5 is the top of the scale. |

Additional Resources:

[hyperboles/exaggerations](#)

