4TH GRADE **ELA**

Student Materials

Unit 2
Preparing for the Worst: *Natural Disasters*

fish tank ELA

Daily Lesson Materials

Name: _____ Date: _____

Today's reading was *Unforgettable Natural Disasters (TIME FOR KIDS Nonfiction Readers)* pg. 4 – 9.

1. Why is it important to learn facts about **natural disasters**?

2. Why was the Global Disaster Alert and Coordination System (GDACS) created?

3. Why does the author include the map on pages 8–9? How does it help the reader better understand how the GDACS works?

Name: _____ Date: _____

Writing Prompt

natural disaster imminent

What is a **natural disaster**? Why is it important to know if a **natural disaster** is **imminent**?

Name: _____ Date: _____

Today's reading was *Unforgettable Natural Disasters (TIME FOR KIDS Nonfiction Readers)* pg. 14 – 21.

1. Where do volcanoes form?

2. How does the diagram on page 15 help a reader better understand how a volcano erupts?

3. What are the three different types of volcanoes? Compare and contrast how the lava flows from each type of volcano.

4. Using the maps on page 19, explain how the island of Krakatoa changed after the eruption.

5. What happened when Mount St. Helens erupted?

Name: _____ Date: _____

Sequence of Events Graphic Organizer

Name: _____ Date: _____

Writing Prompt

havoc

Explain the sequence of events that leads up to a volcanic eruption. Use the words "plates," "magma," and "erupt" in your answer.

Name: _____ Date: _____

Verb Tense Scavenger Hunt

Search through any available texts to find sentences in past, present, and future tense. Copy the sentences in the table below, underlining the verbs. See how many sentences you can add in each box.

PAST TENSE	• Example: A million years later, in 1883, the volcano <u>erupted</u> again.
PRESENT TENSE	
FUTURE TENSE	

Name: _____ Date: _____

Writing Prompt

In the following paragraph, underline the verbs and identify the tense of each verb.

> Tomorrow night, my family will make pizza for dinner. My mom will make several batches of pizza dough, then we will add the sauce and toppings together. Last week we ran out of pizza sauce, so my dad made extra sauce for this week! Each person will get to make half of a pizza with whatever toppings they want. I always add extra cheese, pepperoni, peppers, and onions to my half. Even though those are my favorite toppings, I will share some slices with my siblings. Pizza night is always a blast!

Name: _____ Date: _____

Today's reading was *Volcanoes* pg. 1 – 13.

1. Where does the word "volcano" come from?

2. Describe the connection between the Hawaiian goddess of fire, Pele, and the Hawaiian volcanoes.

3. Based on the description on page 6, how are volcanoes formed?

4. What is a volcano?

5. Why does Seymour Simon include the photograph on page 11?

Name: _____ Date: _____

Writing Prompt

destructive

Explain what happened when Mount St. Helens erupted. What destruction did it cause? Why?

Name: _____ Date: _____

Today's reading was *Volcanoes* pg. 14 – 25.

1. Where do most volcanoes form? Why?

2. Why does Seymour Simon include the map on page 14?

3. What is the Ring of Fire?

4. How were the Hawaiian volcanoes formed?

5. Describe what happens when Hawaiian volcanoes erupt.

Name: _____ Date: _____

Sample Response

What makes Hawaiian volcanoes unique? Give at least 2–3 specific examples.

Hawaiian volcanoes are unique for many reasons. Hawaiian volcanoes are in the middle of the Pacific Plate, not in the Ring of Fire. They grew from the Pacific seafloor over several million years. Thousands of undersea eruptions built up hardened lava from the bottom of the deep sea and eventually appeared as islands. Hawaiian lava gushes out in red-hot fountains. They erupt less violently and rarely throw out ash or rocks. The Hawaiian Islands are constantly changing as the volcanoes erupt. Old lava hardens and cools as it enters the sea, changing the shape of the islands.

Name: _____ Date: _____

Writing Prompt

What makes Hawaiian volcanoes unique? Give at least 2–3 specific examples.

Name: _____ Date: _____

Today's reading was *Volcanoes* pg. 24 – 32.

1. What is the difference between an **inactive**, "dormant," or an **extinct** volcano?

2. What are some positive effects of volcanic eruptions?

Name: _____ Date: _____

Writing Prompt

inactive extinct

Create and present a mini-poster about one specific type of volcano to teach your classmates about what makes that type of volcano unique.

Name: _____ Date: _____

Two Paragraph Outline

Topic:_____

_____

Paragraph 1

Topic Sentence:_____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Paragraph 2

Topic Sentence: _____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Name: _____ Date: _____

Writing Prompt

You have been asked to write an informational resource to help others learn about the dangers of volcanoes. Your resource needs to include two paragraphs that explain:

- Where and how volcanoes are formed
- What hazards volcanoes create

You may also include visuals and diagrams to help the reader.

Name: _____ Date: _____

Two Paragraph Outline

Topic:_____

_____

Paragraph 1

Topic Sentence:_____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Paragraph 2

Topic Sentence: _____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Name: _____ Date: _____

Writing Prompt

Complete an outline for each paragraph, including a topic sentence, supporting details, and concluding sentence. Only choose relevant supporting details, including concrete details.

Name: _____ Date: _____

Two Paragraph Outline

Topic:_____

_____

Paragraph 1

Topic Sentence:_____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Paragraph 2

Topic Sentence: _____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Name: _____ Date: _____

Writing Prompt

Using your complete Two Paragraph Outline, draft both paragraphs to fully respond to the prompt. Be sure to order your details in a way that clearly shows cause-and-effect.

Name: _____ Date: _____

Today's reading was *Unforgettable Natural Disasters (TIME FOR KIDS Nonfiction Readers)* pg. 22 – 29.

1. Why does the author include the graphics and text features on pages 22 and 23? What does the reader learn from them?

2. What is the Richter scale? How is it used?

3. Why was the earthquake in 1201 considered the deadliest earthquake, even if it wasn't the strongest?

4. What happened during the San Francisco earthquake in 1906?

Name: _____ Date: _____

Writing Prompt

epicenter magnitude

Where and why do earthquakes occur? What types of damage do they cause? Make sure to use the words **epicenter** and **magnitude** in your answer.

Name: _____ Date: _____

Today's reading was *Earthquakes* pg. 1 – 14.

1. What causes an earthquake? Explain what happens at the focus of the earthquake.

2. Why does Seymour Simon start page 13 with the question, "Why do most earthquakes in the United States occur in California?" How does he answer the question?

3. What evidence does the author give to support the idea that it is dangerous to live along the San Andreas **Fault**?

Name: _____ Date: _____

Writing Prompt

fault

Based on evidence from the text, explain why a person living in Boston is significantly less likely to experience an earthquake than a person in California.

Name: _____ Date: _____

Today's reading was *Earthquakes* pg. 18 – 31.

1. How do scientists measure and compare the sizes of earthquakes? Is a seismograph alone enough to measure the damage of an earthquake? Why?

2. What information do scientists get from the Richter scale?

3. Why do scientists also use the Mercalli intensity scale? What additional information does it provide?

4. To what extent are scientists able to predict and prepare for earthquakes? Why?

5. What damage can earthquakes cause? Give a specific example.

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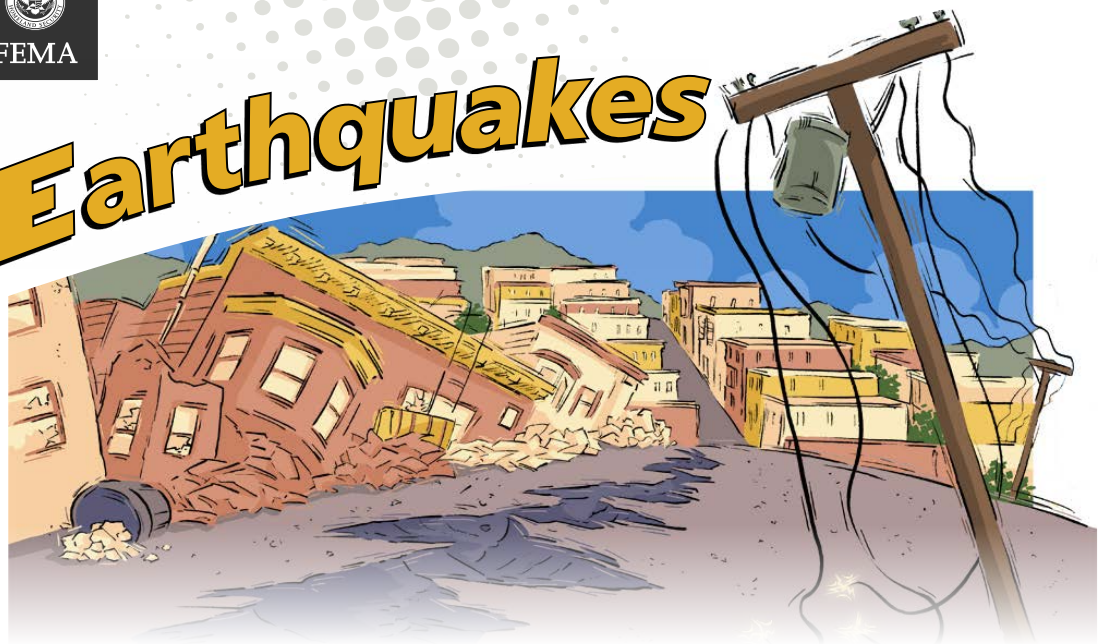
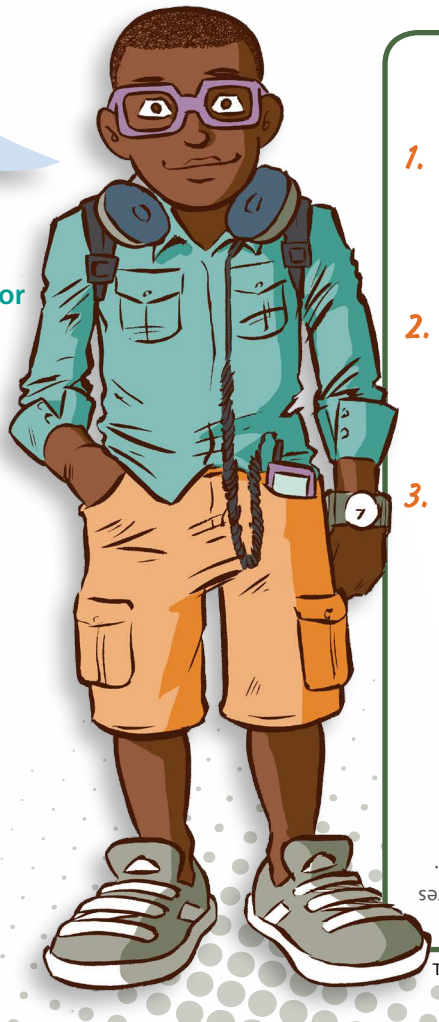
Earthquakes



Earthquakes are the shaking, rolling or sudden shock of the earth's surface. Earthquakes happen along cracks (called fault lines) in the earth's surface. Earthquakes can be felt over large areas, although they usually last less than one minute. Earthquakes cannot be predicted — although scientists are working on it!

Am I at risk?

All 50 states and 5 U.S. territories are at some risk for earthquakes. Earthquakes can happen at any time of the year.



FACT CHECK

1. What is the Richter scale, and how high does it go?

2. What is the "Ring of Fire"?

3. What other disasters could be triggered as a result of an earthquake?

ANSWERS

(1) Developed by Charles Richter, a physicist, the Richter scale measures the magnitude, or size, of earthquakes. It goes from 0.0 (none) to 10.0. Earthquakes below 2.0 are rarely felt by people, and a 10.0 has never been recorded.

(2) Also called the Circum-Pacific belt, it's the zone surrounding the Pacific Ocean where about 90% of the world's earthquakes occur.

(3) Tsunami, Flood, Home Fires, Blackouts, Landslides, and Volcano eruptions.

BE A HERO!™

For more facts and info on earthquakes visit www.ready.gov/kids-know-the-facts-earthquakes

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Earthquakes Be Prepared

BEFORE

- Build an emergency kit.
- Make a family communications plan.
- Know the safe spots in every room – under a sturdy table or against an inside wall.
- Ask your family to hold earthquake drills – drop, cover, and hold on!

DURING

If inside:

- DROP to the ground.
- Take COVER under a sturdy table or other heavy furniture. If there is nothing to get under, cover your face and head with your arms and crouch near an inside wall.
- HOLD ON until the shaking stops.
- STAY AWAY from windows, glass, lighting fixtures, or furniture that could fall – like bookcases.
- STAY INSIDE!
- Do not use elevators!

If outside:

- Stay there. Move away from buildings, streetlights, and wires.
- Stay out in the open until the shaking stops. Buildings could collapse and hurt you.

If trapped under debris:

- Cover your mouth with your shirt.
- Do not scream – you could breathe in dust.
- Tap on a pipe or wall so rescuers can find you.

WORDS TO KNOW

Seismic Activity Another word for earthquakes, along with tremors, quakes and shakers

Fault Lines Cracks in the rocks below the earth's surface

Aftershock A smaller earthquake that follows the main shock or previous earthquake

Epicenter The center, or focus, of an earthquake, from which seismic waves are sent spherically in many directions

Seismograph A machine that measures an earthquake

AFTER

- Expect aftershocks. They are usually not as strong but can cause damage.
- Open cabinets carefully. Objects might have moved and could fall on you.
- Wear long pants, long sleeves, and shoes to protect your skin from getting scratched by broken objects.
- Text, don't talk. Unless there's a life-threatening situation, if you have a cell phone, send a text so that you don't tie up phone lines needed by emergency workers. Plus, texting may work even if cell service is down.

BE A HERO!™

For more facts and info on earthquakes visit
http://www.ready.gov/kids/know-the-facts/earthquakes

Name: _____ Date: _____

Verb Tense

Partner Practice Cards

The Richter scale _____ the magnitude of an earthquake.	☐ measured ☐ measures ☐ will measure
Apartments _____ as a result of an earthquake in Niigata, Japan in 1964.	☐ tilted ☐ tilt ☐ will tilt
Most earthquakes _____ too small to be measured by people.	☐ were ☐ are ☐ will be
Over the next five years, scientists _____ more about earthquakes can be predicted.	☐ studied ☐ study ☐ will study

Name: _____ Date: _____

Writing Prompt

immense

What tools do scientists use to measure earthquakes? Why is one form of measurement not enough for measuring earthquakes?

Name: _____ Date: _____

Single Paragraph Outline

Topic Sentence: _____

_____

_____

- Detail 1: _____

  _____

- Detail 2: _____

  _____

- Detail 3: _____

  _____

- Detail 4: _____

  _____

Concluding Sentence: _____

_____

_____

Name: _____ Date: _____

Writing Prompt

You have been asked to write an informational resource to help others learn about the dangers of earthquakes. Your resource needs to include a paragraph that explains:

- Where and how earthquakes occur

You can also include visuals and diagrams to help the reader.

Name: _____ Date: _____

Narrative Brainstorming Graphic Organizer

Point of View:

Setting:

Characters:

Climax:

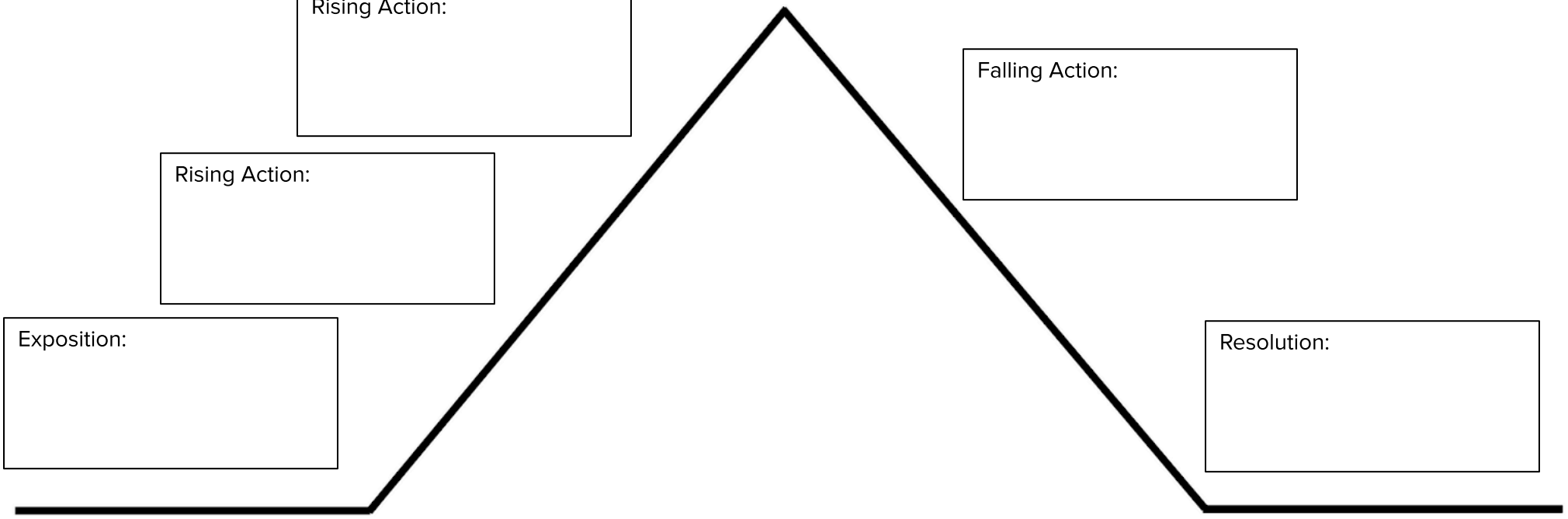
Rising Action:

Falling Action:

Rising Action:

Exposition:

Resolution:



Name: _____ Date: _____

Temporal Words and Phrases

Read the text below, noticing any temporal words or phrases that help the reader understand when events are occurring.

One morning, Mia was sitting in her room, quietly drawing, when she felt a slight tremor beneath her feet. At first, she thought it was just her imagination, but then the vibrations grew stronger, rattling her toy blocks off the shelf. Suddenly, the floor beneath her feet buckled violently, and her heart raced with fear as she scrambled to her feet. As the room swayed and the walls groaned, she remembered what her teacher had said about "Drop, Cover, and Hold On." Without thinking, she ducked under her bed as the shaking intensified, her small hands clutching the legs of the bed for dear life. Moments later, the tremor finally stopped, leaving a heavy silence in its wake. After a tense pause, Mia peeked out from under the bed, her wide eyes searching the room for signs of danger. At last, when the sounds of distant sirens reached her ears, she slowly emerged, feeling both relieved and unsure of what had just happened.

Name: _____ Date: _____

Writing Prompt

Write an account of a young person dealing with a natural disaster. Your story should:

- Be written in first-person point of view
- Include details and vocabulary about the natural disaster you learned about during the unit
- Use dialogue and description to depict the narrator's thoughts and feelings
- Use temporal words and phrases to show sequence of events

Name: _____ Date: _____

Narrative Brainstorming Graphic Organizer

Point of View:

Setting:

Characters:

Climax:

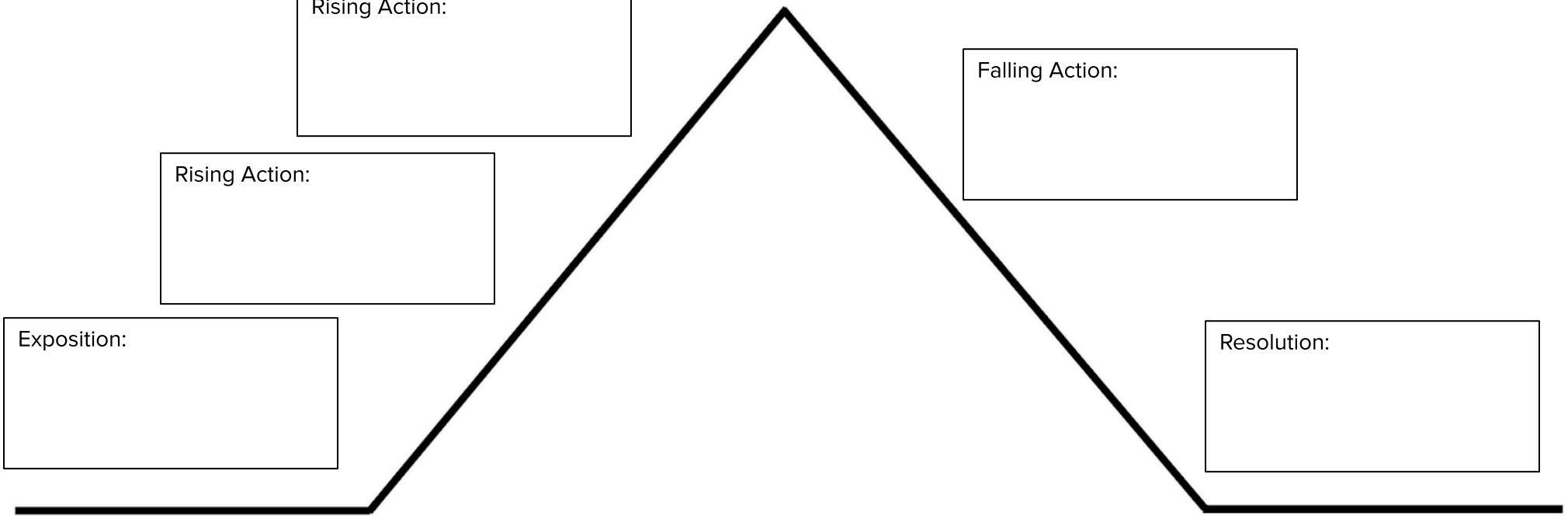
Rising Action:

Falling Action:

Rising Action:

Exposition:

Resolution:



Name: _____ Date: _____

Writing Prompt

Complete a narrative story plan for the following prompt: Write an account of a young person dealing with a natural disaster.

Name: _____ Date: _____

Narrative Brainstorming Graphic Organizer

Point of View:

Setting:

Characters:

Climax:

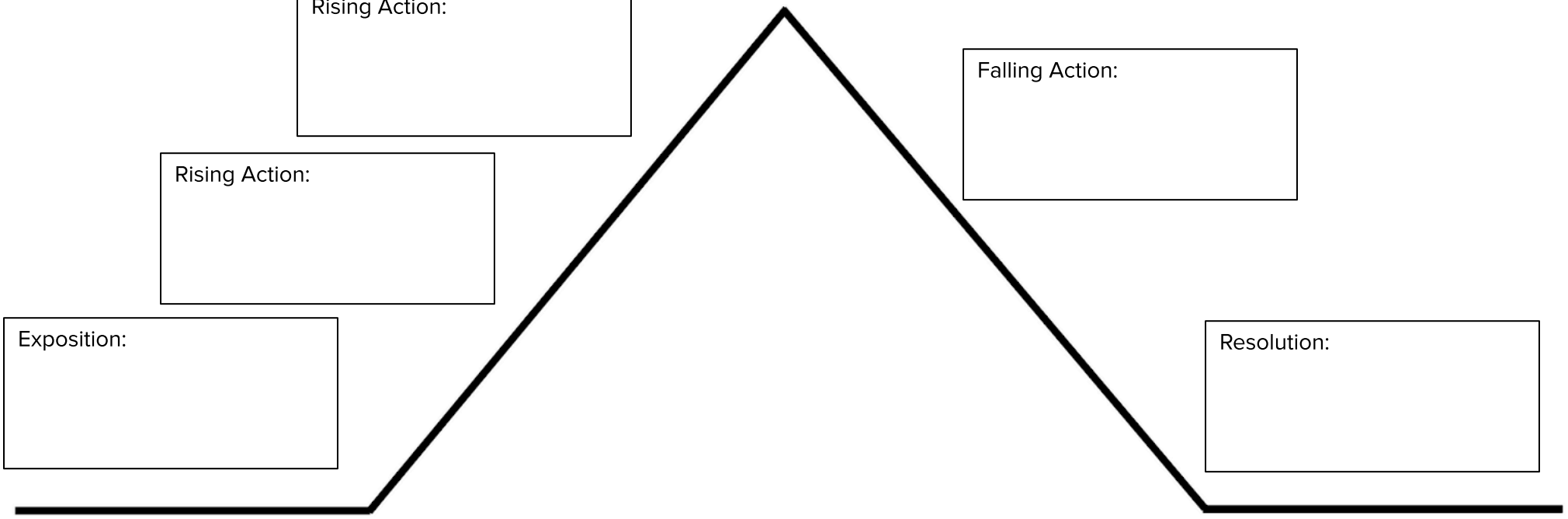
Rising Action:

Falling Action:

Rising Action:

Exposition:

Resolution:



Name: _____ Date: _____

Writing Prompt

Begin drafting a story by including details that describe the setting and the natural disaster in the story.

Name: _____ Date: _____

Narrative Brainstorming Graphic Organizer

Point of View:

Setting:

Characters:

Climax:

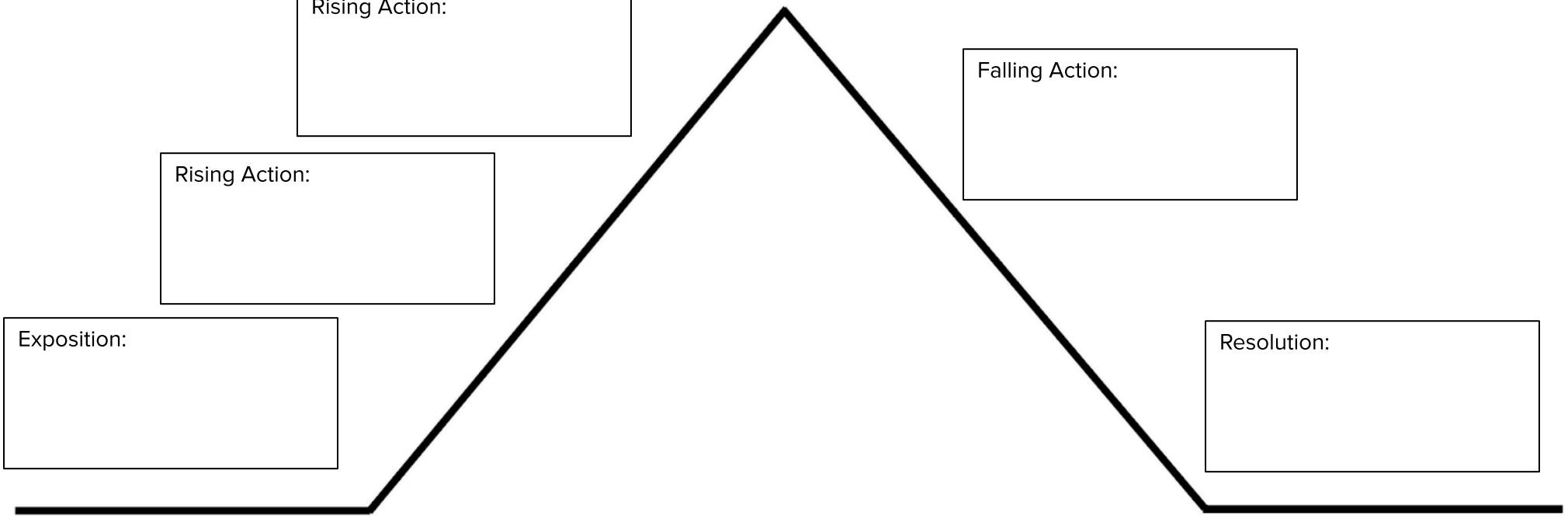
Rising Action:

Falling Action:

Rising Action:

Exposition:

Resolution:



Name: _____ Date: _____

Writing Prompt

Finish drafting the story, adding dialogue and description to show the narrator's thoughts and feelings throughout the story.

Name: _____ Date: _____

Temporal Words and Phrases

Read the text below, noticing any temporal words or phrases that help the reader understand when events are occurring.

One morning, Mia was sitting in her room, quietly drawing, when she felt a slight tremor beneath her feet. At first, she thought it was just her imagination, but then the vibrations grew stronger, rattling her toy blocks off the shelf. Suddenly, the floor beneath her feet buckled violently, and her heart raced with fear as she scrambled to her feet. As the room swayed and the walls groaned, she remembered what her teacher had said about "Drop, Cover, and Hold On." Without thinking, she ducked under her bed as the shaking intensified, her small hands clutching the legs of the bed for dear life. Moments later, the tremor finally stopped, leaving a heavy silence in its wake. After a tense pause, Mia peeked out from under the bed, her wide eyes searching the room for signs of danger. At last, when the sounds of distant sirens reached her ears, she slowly emerged, feeling both relieved and unsure of what had just happened.

Name: _____ Date: _____

Writing Prompt

Revise the story, adding temporal words and phrases to help show the sequence of events and a resolved ending.

Name: _____ Date: _____

Today's reading was *Unforgettable Natural Disasters (TIME FOR KIDS Nonfiction Readers)* pg. 30 – 41.

1. What causes flooding?

2. Why are floods extremely **destructive**? Give a specific example.

3. Explain what happened during the "worst flood in modern history" (p. 32). What destruction did it cause?

4. What damage does flooding from hurricanes cause? Give examples from Hurricane Katrina and Hurricane Sandy.

5. How does a tsunami form? What type of damage do tsunamis cause? Give specific examples from the Japanese Tsunami of 2011.

Name: _____ Date: _____

Writing Prompt

absorb excess

What type of damage and destruction is caused by flooding? Support your answer with 2–3 specific examples.

Name: _____ Date: _____

Today's reading was *Hurricanes* pg. 1 – 13.

1. What is a hurricane?

2. What are the three kinds of storms called tropical cyclones? Explain the key features of each type of storm.

3. What does the photograph on page 10 show? Why does Simon include it?

4. What is the eye of a hurricane?

5. Explain why the hurricane that hit Galveston in September 1900 was so deadly. Use the words storm surge, destruction, and coast in your answer.

Name: _____ Date: _____

Writing Prompt

atmosphere

Describe where and how hurricanes occur.

Name: _____ Date: _____

Today's reading was *Hurricanes* pg. 14 – 23.

1. Why are hurricanes considered the world's worst storms?

2. Why are hurricanes **destructive**? Give multiple examples. Use at least one modal verb in your response.

Name: _____ Date: _____

Writing Prompt

moderate catastrophic

Create and present a mini-poster about one specific category of hurricane to teach your classmates about what makes that category unique.

Name: _____ Date: _____

Today's reading was *Hurricanes* pg. 24 – 32FEMA Hurricanes Fact Sheet.

1. What types of hurricane and storm warnings exist? How are they used?

2. What should you do if you are caught in a hurricane? Try to include at least one modal verb in your response.

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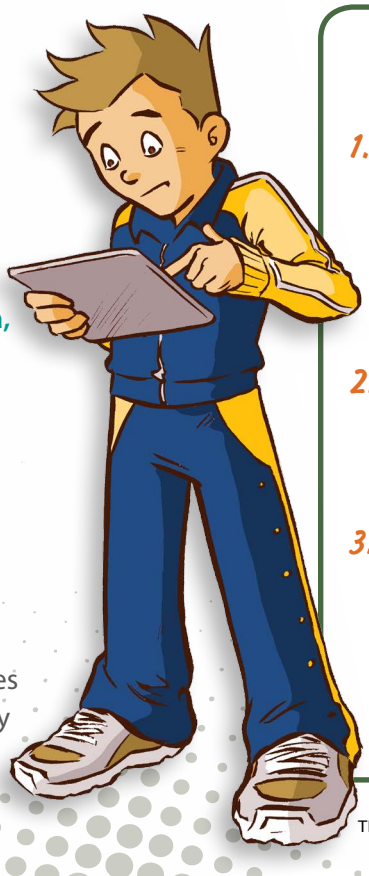
Hurricanes

Hurricanes are severe tropical storms that form in the southern Atlantic Ocean, Caribbean Sea, Gulf of Mexico, and in the eastern Pacific Ocean. They gather heat and energy through contact with warm ocean waters. Evaporation from the seawater increases their power. Hurricanes rotate in a counter-clockwise direction around an "eye." Hurricanes have winds at least 74 miles per hour. When hurricanes come onto land, their heavy rain, strong winds, and large waves can damage buildings, trees, and cars.

Am I at risk?

Hurricanes are most common between June and November, and most often hit states like Florida, Alabama, Mississippi, Louisiana, Georgia, Texas, South Carolina, and North Carolina. But they can affect all states along the eastern shore, all the way up to Maine, and can even occur on the West Coast and Pacific Islands.



Did you know?

There are six lists of names for tropical cyclones and hurricanes. They get rotated every year. There is a committee that comes up with the names. If a storm is particularly devastating, the committee meets to decide on a name to replace it in the list.

FACT CHECK

1. Hurricanes can produce which of the following?
   a. Tornadoes
   b. Storm surges
   c. 155 miles per hour winds
   d. All of the above
2. Hurricane seasons lasts from ____ to ____ .
   a. August to December
   b. June to November
   c. January to July
3. **True or False?** Hurricanes can cause flash floods, landscapes, and mud slides.

ANSWERS
(1) D, All of the above.
(2) B, but the peak season is from mid-August until late October.
(3) True. Hurricanes can produce a lot of rain!

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For more facts and info on hurricanes visit
http://www.ready.gov/kids/know-the-facts/hurricanes
http://www.nhc.noaa.gov/

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Hurricanes
Be Prepared

BEFORE

- Build an emergency kit.
- Make a family communications plan.
- Help your parents bring in outdoor items like potted plants, patio furniture, decorations, and garbage cans. They can fly in strong winds!

DURING

- Don't open the refrigerator or freezer. In case you lose power, you want the cold air to stay in!
- Stay away from windows and glass doors. They could break and hurt you.
- Don't go outside when the rain or winds stop. This is the eye of the storm, or a short "rest," and it will start again.
- If need be, stay inside a closet or a room without windows. You can also lie on the floor under a table or sturdy object.
- Listen to your parents or safety authorities for important instructions.

AFTER

- Don't go outside without a grown-up.
- Don't go near any wires that are loose or dangling. They could electrocute you!
- Tell your parents if you smell gas.
- Don't drink water from the faucet unless your parents say it's okay.
- Text, don't talk. Unless there's a life-threatening situation, if you have a cell phone, send a text so that you don't tie up phone lines needed by emergency workers. Plus, texting may work even if cell service is down.

WORDS TO KNOW

Eye The center of the storm and the time when winds and rains die down. But it will start up again very quickly.

Tropical An area of the country that is closer to the equator

Storm Surge Heavy waves caused by high wind and a lot of rain. These can be dangerous.

Evacuation Leaving an area declared unsafe by officials. Always follow instructions to evacuate your home or neighborhood and if need be to go someplace safer.

BE A HERO!™

For more facts and info on hurricanes visit http://www.nhc.noaa.gov/

Name: _____ Date: _____

Writing Prompt

forecast

How do forecasters predict hurricanes?

Name: _____ Date: _____

Progressive Verb Tense

Name the Verb Tense

In the sentences below, look at the underlined verb or verb phrase. Then, label the verb as being in the simple or progressive tense, along with the correct tense (past, present, or future). Identify the tense of the verb, labeling it with one of the following tenses:

- Past tense
- Present tense
- Future tense
- Progressive past tense
- Progressive present tense
- Progressive future tense

Example:

The wolves <u>were howling</u> at the moon on the cold night.

__progressive past tense_____

1. Every second, a large hurricane <u>releases</u> the energy of ten atomic bombs like those used in World War II.

   _____

2. During the earthquake, people <u>were hiding</u> under tables.

   _____

3. Because of the flood, people <u>will be cleaning</u> the area for many months.

   _____

4. Hot lava <u>flowed</u> down the side of the mountain.

   _____

5. Even today, the earth's plates are shifting and pressing against each other.

_____

Name: _____ Date: _____

Writing Prompt

Identify the progressive verb phrases in the paragraph below by underlining the verb phrases, then labeling them as *progressive past*, *progressive present*, or *progressive future*.

> During the eruption of Mount Vesuvius in AD 79, ash and rocks were flying into the air, covering the nearby cities. People were running away in fear as the ground shook beneath them. Many were trying to grab their belongings while the volcano was erupting. Today, archaeologists are digging at the sites of Pompeii and Herculaneum, uncovering the stories of the people who lived there. As they dig, they are finding items that show how people lived before the eruption, giving us a glimpse into the past that was buried under ash for so long. For years to come, scientists will be digging for more clues that can teach them about this historic natural disaster.

Name: _____ Date: _____

Single Paragraph Outline

Topic Sentence: _____

_____

_____

- Detail 1: _____

  _____

- Detail 2: _____

  _____

- Detail 3: _____

  _____

- Detail 4: _____

  _____

Concluding Sentence: _____

_____

_____

Name: _____ Date: _____

Single Paragraph Outline Sample

Topic Sentence: _Advance warning and preparation can greatly reduce the risks of hurricanes.

- *Detail One:* _forecasters track storm_____
- *Detail Two:* _warn people in path_____
- *Detail Three*: _evacuate or get supplies_____
- *Detail Four*: __avoid flooded areas_____

Concluding Sentence: _Hurricanes can be catastrophic, but people can stay safe by__ receiving proper warning and taking measures to prepare for the storm._____

Name: _____ Date: _____

Writing Prompt

You have been asked to write an informational resource to help others learn about the dangers of hurricanes. Your resource needs to include a paragraph that explains:

- How the risks of hurricanes can be reduced

You can also include visuals and diagrams to help the reader.

Name: _____ Date: _____

Today's reading was *Wildfires* pg. 10 – 21.

1. What do fires need to burn? What causes a fire?

2. Why are wildfires considered a fact of life in the wilderness, and what has been the impact of aggressively fighting them?

3. What policy did Yellowstone Park officials create in 1972? Why did they abandon the policy in 1988?

4. Describe the destruction caused by the wildfire in Yellowstone in 1988. Include details about how the wildfire spread.

5. How did the summer of fire finally end? Why?

Name: _____ Date: _____

Writing Prompt

carelessness flammable

Explain what happened during the Yellowstone fires of 1988. What impact did the fires have on the park? Use the words merged, **carelessness**, **flammable**, and intense in your answer.

Name: _____ Date: _____

Today's reading was *Wildfires* — pg. 26 - end.

1. What impact did the fire have on Yellowstone National Park? Explain.

2. Why do firefighters purposefully start some forest fires?

3. What does the statement "Using fires wisely prevents forest fires" (p. 26) mean? Give an example. Try to use the modal verbs *can*, *could*, or *should* in your response.

Name: _____ Date: _____

Writing Prompt

drought

The author ends by saying,

> "Wildfires are neither good nor bad. In forests and grasslands, they are part of the endless cycle of change" (p. 30).

Analyze what the author means by this.

Name: _____ Date: _____

Single Paragraph Outline

Topic Sentence: _____

_____

_____

- Detail 1: _____

  _____

- Detail 2: _____

  _____

- Detail 3: _____

  _____

- Detail 4: _____

  _____

Concluding Sentence: _____

_____

_____

Name: _____ Date: _____

Writing Prompt

You have been asked to write an informational resource to help others learn about wildfires. Your resource needs to include a paragraph that explains:

- The effects of wildfires

You can also include visuals and diagrams to help the reader.

Ready
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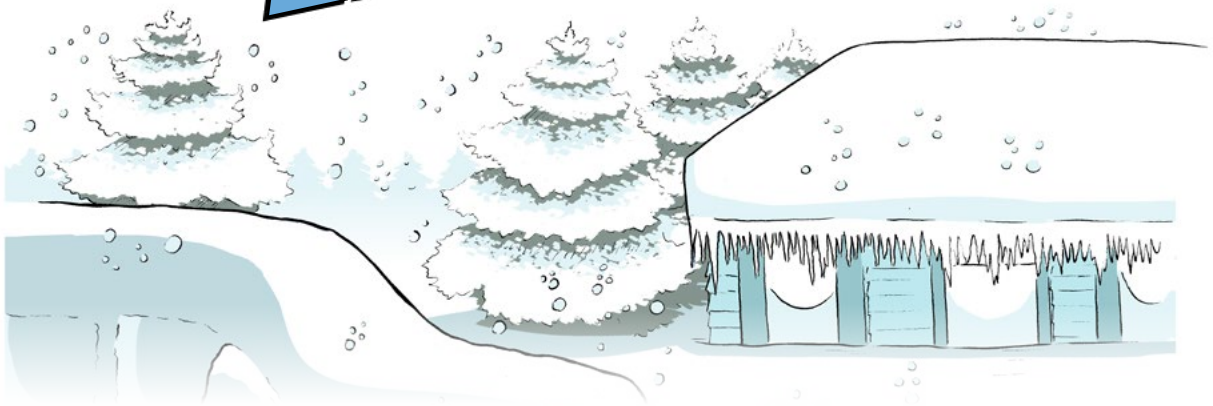
FEMA

Winter Storms/ Extreme Cold



Winter storms can range from a normal snow over a few hours to a blizzard with blinding, wind-driven snow that lasts for several days. Many winter storms bring dangerously low temperatures and sometimes, strong winds, icing, sleet, and freezing rain. One of the main concerns is that winter weather can knock out heat, power, and communication, sometimes for days at a time. Heavy snowfall and extreme cold can have serious effects on an entire region. Icy roadways can cause serious accidents, and sometimes people die from being in really cold temperatures for too long.

Am I at risk?

Almost everyone in the United States can be affected by winter storms and extreme cold.

FACT CHECK

1. Uncontrollable shivering, memory loss, mumbling, slurred speech and feeling tired can all be signs of what cold weather related condition? _____

   _____

2. **True or False?** Wet clothing chills the body quickly.

3. Why should you not eat snow?_____

   _____

4. Signs of frostbite are:
   - **a.** Loss of feeling in fingers, toes, ear lobes, tip of the nose
   - **b.** Numbness
   - **c.** White, gray, or pale appearance of skin
   - **d.** All of the above

ANSWERS

(1) Hypothermia. If you see signs of hypothermia in someone, get them to a warm location, remove wet clothing, warm the center of the body first by giving warm beverages, and get medical help as soon as possible.
(2) True. Wet clothing loses its ability to insulate heat. Keep dry. Change wet clothing frequently.
(3) It lowers your body temperature. Melt it first before eating. Even better, drink some hot chocolate instead!
(4) D, all are signs of frostbite. Frostbite is an injury to the body caused by freezing and can permanently damage the body. Get out of the cold or cover up skin at the first signs of redness or pain in any skin area.

BE A HERO!™

For more facts and info on winter storms and extreme cold visit
http://www.ready.gov/kids/know-the-facts/winter-storms-and-extreme-cold
http://www.bt.cdc.gov/disasters/winter/

Ready
Prepare. Plan. Stay Informed.

FEMA

Winter Storms/ Extreme Cold

Be Prepared

BEFORE

- Build an emergency kit.
- Make a family communications plan.
- Help your parents sprinkle sand on sidewalks and walkways. This helps to make them less slippery.
- Make sure you dress warmly and have extra blankets!
- Bring pets inside.

DURING

- Stay inside! Sidewalks can be very slippery and you can hurt yourself if you fall.
- If you are outside helping to shovel snow, make sure you wear a hat. It helps keep you from losing body heat.
- Wear mittens. They're warmer than gloves.
- Cover your mouth with a scarf to protect your lungs from the cold air.
- Put on dry clothes as soon as you come inside.
- If you can't feel your fingers, toes, ears or nose, or they appear pale white, tell a grown-up immediately. You need to see a doctor.
- Tell a grown up immediately if you can't stop shivering, have trouble remembering things, feel tired or talk funny. You may have hypothermia which can be very dangerous.

AFTER

- Continue to wear layers, a hat, scarf and mittens, or gloves. These will help to keep you warm and protect you from frostbite.

WORDS TO KNOW

Frostbite A medical condition when skin or body tissue is damaged from freezing. It's most common in parts of the body farthest from your heart that are exposed, such as fingers, toes, ears and nose.

Hypothermia A sickness when your body temperature drops below what is needed to be healthy and work properly. It is the opposite of heat stroke.

Freezing Rain Rain that freezes when it hits the ground, creating a layer of ice on roads, walkways, trees and power lines

Sleet Rain that turns to ice before reaching the ground

BE A HERO!™

For more facts and info on winter storms and extreme cold visit http://www.bt.cdc.gov/disasters/winter/

Ready
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FEMA

Drought

Droughts occur when there has not been enough rainfall and the water levels get low. They can happen anywhere in the United States, and droughts increase the risk of other hazards like wildfires, flash floods, and possible landslides or debris flows.

Am I at risk?

Droughts can happen anywhere in the United States.

Did you know?

The water that exists today is the same water that existed a billion years ago! That's why it is called a limited renewable resource. It's always on the move, traveling through the oceans, rivers, ground, and atmosphere.

FACT CHECK

1. Water covers more than _____ % of our earth and is found in oceans, lakes, rivers, and even frozen in ice caps and glaciers, and underground.
   a. 80 **b.** 97 **c.** 50
2. _____ % of the earth's water is saltwater – which people and animals cannot drink, and is not good for many plants. That leaves _____% freshwater!
3. **True or False?** Of the remaining 3% of freshwater, nearly 75% of that is frozen in ice caps and glaciers.
4. _____% of water use happens in the bathroom. Average toilets can use up to _____ gallons of water per flush!

ANSWERS
(1) A
(2) 97%; 3%
(3) True! See why it's a limited resource?
(4) 45%; 7 gallons. That's why you should not flush unless necessary during a drought!)

BE A HERO!™

For more facts and info on drought visit
http://www.ready.gov/kids/know-the-facts/drought
http://drought.unl.edu/DroughtforKids.aspx
http://waterwatch.usgs.gov/index.php?id=ww_drought

Ready
Prepare. Plan. Stay Informed.
FEMA

Drought
Be Prepared

BEFORE

Here are some easy ways to conserve water and avoid drought:

- ✔ Don't pour water down the drain! There may be another use for it, like watering indoor plants.
- ✔ If you want to play in the sprinkler, or water the lawn, try not to water the driveway or sidewalk.

DURING

- ✔ Listen to the rules from authorities. They want to make sure there's enough water for the things we really need.
- ✔ Take short showers, not baths. Showers use less water.
- ✔ Don't let the water run when you brush your teeth.
- ✔ Take a break from using your outdoor water toys. When the drought ends, you can play with them again.

WORDS TO KNOW

Conservation Saving and protecting a natural resource, like water

Natural Resource Something we need that comes from nature like water, trees, and air

Limited Resource A natural resource (like water) that is limited in supply and cannot be replaced if it is used up

Reservoir A natural or manmade lake that collects and stores water

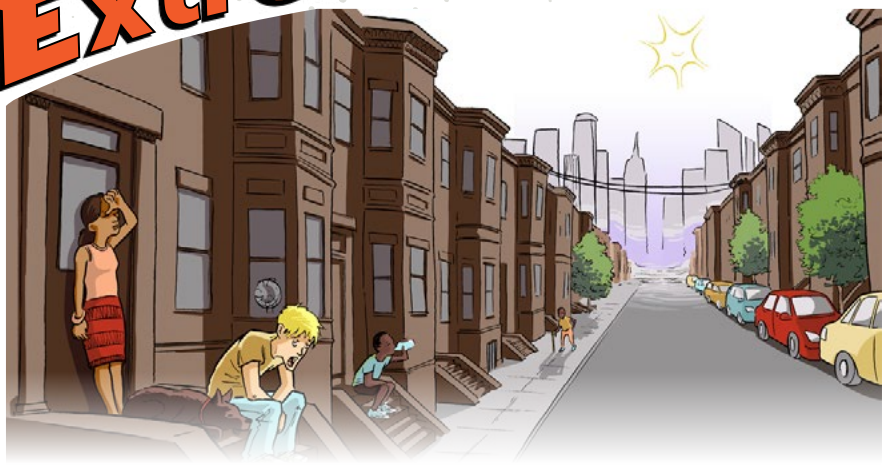
BE A HERO!™

For more facts and info on drought visit
http://drought.unl.edu/DroughtforKids.aspx and
http://waterwatch.usgs.gov/index.php?id=ww_drought

Ready
Prepare. Plan. Stay Informed.

FEMA

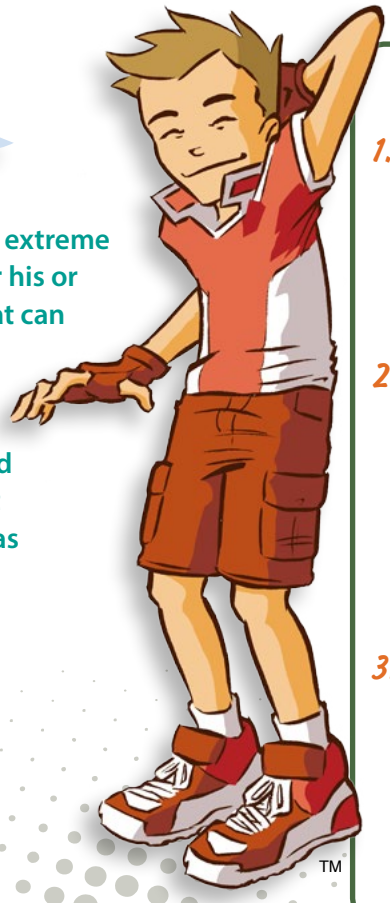
Extreme Heat



Heat kills by pushing the human body beyond its limits. In extreme heat and high humidity (which is when the air has moisture and feels sticky), the body must work extra hard to maintain a normal temperature and keep the body comfortable. A heat wave is an extended period of extreme heat, and there is often high humidity. These conditions can be dangerous for people who don't take care of themselves properly.

Am I at risk?

Sickness can occur if someone has been in extreme heat for too long, or has over-exercised for his or her age or physical condition. Extreme heat can be more dangerous for older people, the very young, and people who are sick or overweight. People who live in cities can be at greater risk because concrete and asphalt store heat for longer and release it throughout the night, so nights don't get as cool as in areas with less concrete.



Did you know?

Heat is the number one weather-related killer in the United States.

FACT CHECK

1. The heat index is:
   - **a.** the number in Fahrenheit that tells us how hot it really feels with humidity and full sunshine
   - **b.** the price of heating costs
   - **c.** a type of thermometer
2. The best thing to protect yourself during a heat wave is:
   - **a.** To stay out of the sun
   - **b.** Use a fan or sit in air conditioning
   - **c.** Take a cold shower or bath
   - **d.** Avoid physical activity and being outside
   - **e.** all of the above
3. **True or False?** In extreme heat, you should drink a lot of water, even when you are not thirsty.

ANSWERS
(1) A.
(2) E. All can help protect you during a heat wave!
(3) True. Drinking water will keep you hydrated and cool down your body.

BE A HERO!™

For more facts and info on extreme heat visit
http://www.ready.gov/kids/know-the-facts/extreme-heat
http://emergency.cdc.gov/disasters/extremeheat/
http://www.noaawatch.gov/themes/heat.php

Extreme Heat

Be Prepared

BEFORE

- Build an emergency kit.
- Make a family communications plan.
- Keep shades closed on windows that get morning or afternoon sun.

DURING

- Never sit in a parked car or leave pets in a parked car.
- Stay inside an air-conditioned area as much as possible.
- Play indoor games and sports.
- Drink lots of water. This is your body's air conditioning!
- Wear loose-fitting clothes in light colors. Did you know dark colors absorb the sun's rays?
- Wear a hat with a wide brim to protect your face and head.
- Spend time in local places with air conditioning, like the library or movie theater.

AFTER

- Don't eat any food that was in the refrigerator if you were without power for more than a day. Food could have spoiled and will make you sick.

WORDS TO KNOW

Humidity The amount of water vapor in the air. Humidity is invisible and can make sweating less effective.

Temperature The measure of how hot or cold something is

Heat Stroke When the body temperature gets too high and can make someone breathe fast, feel dizzy, throw up, get headaches, or feel weak. This can be deadly.

Hyperthermia A dangerous condition where the body absorbs more heat than it can get rid of

BE A HERO!™

For more facts and info on extreme heat visit
http://emergency.cdc.gov/disasters/extremeheat/ and
http://www.noaawatch.gov/themes/heat.php

Name: _____ Date: _____

Writing Prompt

famine

What are other types of **natural disasters**? Describe at least two natural disasters and explain how people can prepare for or prevent them.

Name: _____ Date: _____

Two Paragraph Outline

Topic:_____

_____

Paragraph 1

Topic Sentence:_____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Paragraph 2

Topic Sentence: _____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Name: _____ Date: _____

Research Brainstorming Template

Topic: _____

Question #1:

- _____
- _____
- _____
- _____

Question #2:

- _____
- _____
- _____
- _____

Question #3:

- _____
- _____
- _____
- _____

Question #4:

- _____
- _____
- _____
- _____

Name: _____ Date: _____

Writing Prompt

Research a recent natural disaster (volcanoes, earthquakes, hurricanes, or wildfires). Create a report that includes 2–3 paragraphs, each describing a different aspect of the event.

Name: _____ Date: _____

Research Brainstorming Template

Topic: _____

Question #1:

- _____
- _____
- _____
- _____

Question #2:

- _____
- _____
- _____
- _____

Question #3:

- _____
- _____
- _____
- _____

Question #4:

- _____
- _____
- _____
- _____

Name: _____ Date: _____

Writing Prompt

Choose a recent natural disaster. Generate a list of 3–4 research questions about this natural disaster. Then, select sources that are relevant to your research questions.

Name: _____ Date: _____

Research Brainstorming Template

Topic: _____

Question #1:

- _____
- _____
- _____
- _____

Question #2:

- _____
- _____
- _____
- _____

Question #3:

- _____
- _____
- _____
- _____

Question #4:

- _____
- _____
- _____
- _____

Name: _____ Date: _____

Writing Prompt

Read and gather information about your topic using research questions and selected sources. Organize information into categories that represent topics about the natural disaster.

Name: _____ Date: _____

Two Paragraph Outline

Topic:_____

_____

Paragraph 1

Topic Sentence:_____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Paragraph 2

Topic Sentence: _____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Name: _____ Date: _____

Research Brainstorming Template

Topic: _____

Question #1:

- _____
- _____
- _____
- _____

Question #2:

- _____
- _____
- _____
- _____

Question #3:

- _____
- _____
- _____
- _____

Question #4:

- _____
- _____
- _____
- _____

Name: _____ Date: _____

Writing Prompt

Using your research notes, create a paragraph outline for each question. Outlines should include a topic sentence, 3–4 purposefully ordered supporting details, and a concluding sentence.

Name: _____ Date: _____

Two Paragraph Outline

Topic:_____

_____

Paragraph 1

Topic Sentence:_____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Paragraph 2

Topic Sentence: _____

_____

- Detail: _____
- Detail: _____
- Detail: _____

Concluding Sentence: _____

_____

Name: _____ Date: _____

Writing Prompt

Using the completed outlines, draft each paragraph of your report. Include concrete details that will teach the reader about the topic of each paragraph.

Name: _____ Date: _____

Writing Prompt

Revise your writing by deleting any sentences or information that do not help to show the main idea of the paragraph or section.

Name: _____ Date: _____

Writing Prompt

For each section or main idea of your research project, add at least two text features that will help the reader understand the information.

Vocabulary

Word	Part of Speech	Definition
-able	suffix	
absorb	v.	to soak up, to drink in
atmosphere	n.	the whole mass of air that surrounds Earth
carelessness	n.	not paying close attention
catastrophic	adj.	causing a horrible disaster
destructive	adj.	causing a lot of damage
drought	n.	a long period of time without rain or snow
epicenter	n.	the part of Earth's surface directly above where an earthquake starts
excess	n.	extra, too much of something
extinct	adj.	no longer active
famine	n.	a situation in which many people do not have enough food to eat
fault	n.	a break in the Earth's crust

Word	Part of Speech	Definition
flammable	adj.	easily set on fire
forecast	n.	a prediction of something
havoc	n.	a situation of confusion or destruction
immense	adj.	very large
imminent	adj.	happening soon
in-	prefix	
inactive	adj.	not active; not being used
-less	suffix	
magnitude	n.	a number that shows the strength of an earthquake
moderate	adj.	average in size
natural disaster	n.	an event in nature that causes a lot of damage and often deaths
-ness	suffix	

Word	Part of Speech	Definition
re-	prefix	

Unit Rubrics & Assessments

Narrative Writing Rubric

4th Grade English Language Arts

Rubric Scoring Key	Fully meets (4) All criteria present in the writing	Mostly meets (3) Most criteria present, with some misunderstandings	Partially meets (2) Criteria attempted, but major misunderstandings	Does not meet yet (1) Criteria are not attempted or not enough evidence to rate

Structure	Rubric Score	Notes
Event Sequence Includes all the key components of the narrative arc: exposition, rising action, climax, falling action, resolution; Uses paragraphs to manage the sequence of events by showing a new event or when a new character speaks	4 3 2 1	
Point of View Point of view is clear and consistent throughout the story; Clear understanding of the task's audience and purpose	4 3 2 1	
Setting Includes many details directly and indirectly to describe the place, time, and (if pertinent) the weather conditions of the story; Describes the setting using sensory details, descriptions of the characters' actions, dialogue, or physical appearance	4 3 2 1	
Paragraph Structure Consistently starts new paragraphs appropriately, including when a new event starts or when a new character is speaking	4 3 2 1	

Development	Rubric Score	Notes
Characters Includes one to two major characters; Develops the major character with multiple details and descriptions; Uses both direct and indirect description	4 3 2 1	
Plot Begins by introducing the characters, setting, and background information using sensory details; May begin with dialogue to hook the reader; Major characters experience and solve problems throughout the story; Ends with a resolution, which may include showing how the problem is solved or a lesson that shows how the main character changes or learns something	4 3 2 1	
Precise Words and Phrases Appropriately uses temporal words to help the events in the story unfold logically	4 3 2 1	
Dialogue Appropriately uses dialogue to advance the plot and establish a character's personality; Includes variety of dialogue tags that show how the characters are speaking	4 3 2 1	

Language	Rubric Score	Notes
Grammar Includes complete simple, compound, and complex sentences; Uses nouns correctly, including relative pronouns; Uses verbs correctly, including relative adverbs, the progressive form, and modal auxiliaries; Uses adjectives correctly, including ordering adjectives within sentences according to conventional patterns; Forms and uses prepositional phrases correctly	4 3 2 1	
Conventions Uses correct capitalization conventions; Uses correct punctuation conventions, including commas and quotation marks to mark direct speech and quotations from a text, commas before a coordinating conjunction in a compound sentence; Correctly uses frequently confused words, such as "to" and "too" and "there," "their," and "they're"	4 3 2 1	

Informational Writing Rubric

4th Grade English Language Arts

Rubric Scoring Key	Fully meets (4) All criteria present in the writing	Mostly meets (3) Most criteria present, with some misunderstandings	Partially meets (2) Criteria attempted, but major misunderstandings	Does not meet yet (1) Criteria are not attempted or not enough evidence to rate

Structure	Rubric Score	Notes
Sections Groups information into multiple paragraphs or sections; Consistently uses paragraph structures to organize information depending on the type of information included and the purpose of the writing: sequence or chronology, cause-and-effect, comparison, problem and solution	4 3 2 1	
Introduction Starts by introducing a topic and why it is important; Introduction includes essential background knowledge; Consistently writes in the third-person	4 3 2 1	
Conclusion Includes a concluding section that summarizes the key ideas; Conclusion may include one of the following: question, quote, anecdote, or memorable image	4 3 2 1	

Development	Rubric Score	Notes
Details Includes three to four relevant facts and details to develop and support the topic; Details may include facts, definitions, concrete details, or examples	4 3 2 1	
Text Features As called for by the task, uses three to four text features to reinforce main ideas, including a title, illustrations, headings, labels, captions, bold words, diagrams, photographs, multimedia	4 3 2 1	
Linking Words and Phrases Effectively and consistently uses linking words or phrases to connect ideas or paragraphs	4 3 2 1	

Language	Rubric Score	Notes
Grammar Includes complete simple, compound, and complex sentences; Uses nouns correctly, including relative pronouns; Uses verbs correctly, including relative adverbs, the progressive form, and modal auxiliaries; Uses adjectives correctly, including ordering adjectives within sentences according to conventional patterns; Forms and uses prepositional phrases correctly	4 3 2 1	
Conventions Uses correct capitalization conventions; Uses correct punctuation conventions, including commas and quotation marks to mark direct speech and quotations from a text, and commas before a coordinating conjunction in a compound sentence; Correctly uses frequently confused words, such as "to," and "too," and "there," "their," and "they're"	4 3 2 1	

Name: _____ Date: _____

4th Grade ELA
Natural Disasters

Single Point Narrative Writing Rubric

	Areas for Growth What could I do to make my writing even stronger? How can I improve?	**Criteria** Expectations for my writing assignment:	**Strengths** What am I doing well already? What am I proud of?
Setting		I include details that show where and when the story takes place, including weather conditions.	
Point of View		I use pronouns that match first-person point of view.	
Starting the Story		I orient the reader to the characters and setting by including descriptive details.	
Dialogue		I include dialogue to show a character's thoughts and feelings.	
Temporal Words		I include temporal words and phrases to show the time relationship of events.	

Name: _____ Date: _____

4th Grade ELA
Natural Disasters

Single Point Research Writing Rubric

	Areas for Growth What could I do to make my writing even stronger? How can I improve?	**Criteria** Expectations for my writing assignment:	**Strengths** What am I doing well already? What am I proud of?
Sections		I group information into separate paragraphs for each main idea.	
Details		I include relevant details to support the main idea.	
		Some of my details are concrete examples.	
Text Features		I include multiple text features that teach the reader more about the topic.	

Name: _____ Date: _____

Editing Checklist 1

Language and Conventions Focus Area	✔
Some of my verbs show action.	
Some of my verbs show what something is or is like.	
My verbs are in the correct tense.	

My writing goal:

Name: _____ Date: _____

Editing Checklist 2

Language and Conventions Focus Area	✔
Some of my verbs show action.	
Some of my verbs show what something is or is like.	
My verbs are in the correct tense.	
Verbs in progressive tense show ongoing action.	

My writing goal:

Name: _____ Date: _____

Directions: Read "Facing Tsunamis: Causes, Risks, and Preparation," then answer the questions that follow.

Facing Tsunamis: Causes, Risks, and Preparation

By Fishtank Staff

1 Tsunamis, or "harbor waves" in Japanese, are massive ocean waves caused by other natural forces. Powerful volcanic eruptions, sudden landslides, and even meteor impacts can cause tsunamis; however, most (around 80%) are formed by another **phenomenon**: underwater earthquakes.

2 Underwater earthquakes occur when the Earth's **tectonic plates**, the gigantic solid rocks that make up the layer of the Earth where the **crust** meets the very top of the **mantle**, shift and displace the ocean floor. Tectonic plates move because they are floating on liquid **magma** deeper in the Earth which can cause them to move apart, crash into each other, or slide past one another.

3 When tectonic plates underneath the ocean try to slide past each other, they can become stuck, causing intense pressure to build. Eventually, this pressure must be released, causing an **earthquake.** When earthquakes of a certain **magnitude** form in the ocean, the water displaced by the plates has nowhere to go but up, creating a tsunami.

4 While it sounds like this could happen often because tectonic plates are constantly moving, only around 10-15 tsunamis happen yearly. Luckily, only 2–3 of those create havoc for humans due either to their location or force.

Surface Waves vs. Tsunami Waves

5 Imagine the ocean as a big, wobbly blanket.

6 **Surface waves** are like the ripples you see when you throw a stone into a pond. These waves move along the top of the water and can be pretty big, like the waves you see at the beach. They roll onto the shore fairly close together.

7 **Tsunami waves**, on the other hand, are very different. They're like if the whole blanket (the ocean) got shaken up from underneath, so the waves start deep down below the surface. These waves can travel across the whole ocean, and when they reach the shore, they can become giant, powerful waves that can flood the land. Unlike surface waves, tsunami waves can travel really far without losing much energy!

8 While both involve water movement and can be dangerous, surface waves are caused by wind blowing across the ocean's surface, while tsunamis are set off by powerful underwater events, like earthquakes. Both types of waves can travel long distances, but tsunamis are much faster, more unpredictable, and have much longer wavelengths. The most significant difference, however, lies in their impact. Surface waves typically break as surf, affecting only the ocean's

surface and the nearby coastline. Tsunamis, on the other hand, can cause massive flooding and destruction when they reach land.

Why Are Tsunamis So Dangerous?

9 Tsunamis can be very dangerous. First, they are hard to predict and impossible to stop once they form. While humans have developed some early detection systems for earthquakes, even underwater ones, once a tsunami is triggered, there is little we can do to prevent its impact.

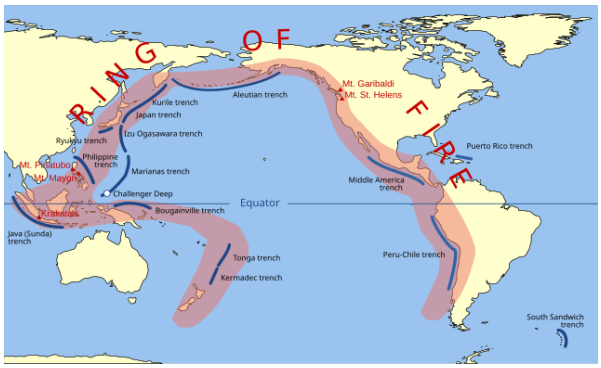
10 Tsunamis are also extremely fast-moving, traveling the deep ocean anywhere from 300–600 mph, similar to the speed of a jet plane. This intense speed does not give cities much time to warn people or evacuate. Adding to difficulties, coastal cities often have large populations, making evacuation efforts before tsunamis nearly impossible and rescue efforts after very complicated.

11 After tsunamis hit coastlines, they often cause extensive flooding that creates other hazards to people, animals, and buildings' internal structures. Strong currents displace everything in their path, making travel and communication even more difficult. While water does eventually **recede** and go back into the ocean after a tsunami, rebuilding a city is hard work. Often, the water mixes with chemicals and sewage and can contaminate farmlands and drinking water that is necessary for humans and animals to survive.

12 One **devastating** tsunami occurred on January 1, 2024. An underwater earthquake—with a magnitude 7.6—struck near the western coastline of Japan, quickly forming tsunami waves ranging from 3 feet to 21 feet in height. The Japan Meteorological Agency immediately issued warnings to all areas that could be impacted, but even with modern advancements in technology, citizens only had minutes to react to this sudden burst of waves. Homes in many cities were reduced to their foundations and many Japanese towns reported homes being completely swept away. The disaster resulted in 515 confirmed fatalities and over 1,300 injuries, despite rescue services and emergency personnel immediately responding. For weeks after, citizens were impacted by **aftershocks** from the earthquake. The tsunami left roads destroyed, sparked from downed power lines, and left thousands without power.

Where Do Tsunamis Happen?

13 Many regions around the world are more prone to tsunamis based on their proximity to tectonic plates and volcanic activity. The area known as the "The Ring of Fire" (pictured) is most at risk for tsunami activity, with roughly 80% of the world's tsunamis occurring in the region. Tsunamis have devastated many lower-lying coastal cities near the Ring of Fire. Other countries that are at a higher risk of tsunamis are countries near the Indian Ocean like Indonesia, India, and Thailand.



What Should People Do During a Tsunami?

14 According to Ready.Gov, the United States' public service campaign that seeks to empower people to respond to emergencies effectively, there are 6 things people should do if they find themselves in a tsunami.

1. If caused by an earthquake, **Drop, Cover, then Hold On** to protect yourself from the earthquake first.
2. Get to high ground as far inland as possible.
3. Be alert to signs of a tsunami, such as a sudden rise or draining of ocean waters.
4. Listen to emergency information and alerts. Always follow the instructions from local emergency managers.
5. Evacuate: DO NOT wait! Leave as soon as you see any natural signs of a tsunami or receive an official tsunami warning.
6. If you are in a boat, go out to sea.

15 Even though scientists cannot predict where the next tsunami will happen, they use deep-water monitor networks (pictured) to detect which earthquakes are most likely to create tsunamis. They can use these earlier warnings to warn those who could be impacted and help leaders make more informed decisions about evacuating. While preventing tsunamis is impossible, organizations like the National Oceanic and Atmospheric Administration work hard to learn from previous disasters and improve warning systems.

1. This question has two parts. First, answer Part A. Then, answer Part B.

   Part A: Read the sentence from paragraph 12 of "Facing Tsunamis"

   > One **devastating** tsunami occurred on January 1, 2024.

   What does the word **devastating** mean as it is used in the sentence?
   a. Providing comfort
   b. Allowing prediction
   c. Causing ruin
   d. Preventing damage

   Part B: Which <u>two</u> details from paragraph 12 best support your answer in Part A?
   a. "An underwater earthquake— with a magnitude 7.6—struck near the western coastline of Japan..."
   b. "Homes in many cities were reduced to their foundations..."
   c. "The Japan Meteorological Agency immediately issued warnings..."
   d. "The disaster resulted in 515 confirmed fatalities and over 1,300 injuries..."
   e. "Citizens only had minutes to react..."

2. This question has two parts. First, answer Part A. Then, answer Part B.

   Part A: What could cause a tsunami to form?
   a. A powerful underwater earthquake.
   b. Tectonic plates that are constantly moving.
   c. Surface waves that turn into tsunami waves.
   d. The sea recedes and the tsunami waves crash onto shore.

   Part B: Which quotation from the text <u>best</u> supports the answer to Part A?
   a. "Tsunamis, or 'harbor waves' in Japanese, are massive ocean waves caused by other natural forces." (paragraph 1)
   b. "Tectonic plates move because they are floating on liquid magma deeper in the Earth...." (paragraph 2)
   c. "When earthquakes of a certain magnitude form in the ocean, the water displaced by the plates has nowhere to go but up..." (paragraph 3)
   d. "These waves can travel across the whole ocean...." (paragraph 7)

3. How does the author organize the section "Surface Waves vs. Tsunami Waves"?
   a. By describing events in the order they happen
   b. By comparing and contrasting two different types of waves
   c. By explaining the causes of tsunamis step by step
   d. By listing reasons tsunamis are dangerous

4. How does the diagram in "Where Do Tsunamis Happen" contribute to the overall understanding of the article?
    a. It clarifies what happens when two plates of the Earth's crust pull apart.
    b. It illustrates why certain coastal cities are more likely to experience tsunamis.
    c. It shows the steps that happen when a tsunami forms.
    d. It explains how pressure is released and how the pressure can cause a volcano.

5. How do the text of Paragraph 12 and the photograph of a damaged house both show the hazards caused by tsunamis?
    a. The text explains that homes were reduced to their foundations, and the photograph shows a house that has been badly damaged.
    b. The text explains that warnings were issued, and the photograph shows a damaged house.
    c. The text explains that people had minutes to react, and the photograph shows a standing house.
    d. The text explains that scientists study tsunamis, and the photograph shows a damaged house.

6. What causes most tsunamis to form, according to the passage?
    a. Wind blowing across the surface of the ocean
    b. Underwater earthquakes that shift tectonic plates and displace water
    c. Heavy rainstorms that raise ocean water levels
    d. Changes in temperature deep in the ocean

7. How does the author organize the section "What Should People Do During a Tsunami?"
    a. By explaining the causes of tsunamis
    b. By presenting a problem and its solution
    c. By listing steps people should follow in a specific order
    d. By comparing different types of natural disasters

8. Explain why tsunamis are hazardous. Use at least two details from the text to support your response.

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Name: _____ Date: _____ Preparing for the Worst: Natural Disasters

Part One: Vocabulary

1. What does it mean if danger is **imminent?**
    a. It is very large.
    b. It is happening soon.
    c. It is very strong and serious.
    d. It is extremely sad or tragic.

2. What is the difference between an **inactive** volcano and an **extinct** volcano?
    a. An inactive volcano never erupts, and an extinct volcano erupts all the time.
    b. An inactive volcano is smaller, while an extinct volcano is larger.
    c. An inactive volcano is newer, while an extinct volcano is older.
    d. An inactive volcano is not erupting now, while an extinct volcano will never erupt again.

3. The **magnitude** of an earthquake tells
    a. where the earthquake hit.
    b. the strength of the earthquake.
    c. when the earthquake will hit.
    d. what happens after the earthquake.

4. What is the difference between **moderate** hurricane damage and **catastrophic** hurricane damage?
    a. Moderate damage can be repaired, while catastrophic damage is very hard to repair.
    b. Moderate damage only affects trees, while catastrophic damage only affects buildings.
    c. Moderate damage happens quickly, while catastrophic damage takes a long time.
    d. Moderate damage is not dangerous, while catastrophic damage is always safe.

5. What does it mean if something is **flammable**?
    a. It can be used to prevent a fire.
    b. It is found as part of the damage of a fire.
    c. It is able to catch on fire easily.
    d. It can survive a fire.

6. How can **carelessness** lead to wildfires?
    a. Carelessness means taking risks on purpose, so a person starts fires even when they know it is dangerous.
    b. Carelessness means not paying enough attention, so a person might forget to fully put out a fire and it could spread.
    c. Carelessness means not caring about the rules, so a person starts a wildfire during a **drought**.
    d. Carelessness means being in a hurry, so a fire spreads before a person has time to stop it.

7. Pick two words from the list below. Use each in a sentence that shows an understanding of the word.

epicenter	fault	forecast	drought

- _____

  _____

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  _____

- _____

  _____

  _____

  _____

Part Two: Content Knowledge and Understandings

8. Explain how natural events can become disasters.

   In your answer, make sure to:
   - Identify two natural events that can become a disaster
   - Explain how each natural event happens
   - Explain what makes the event become a disaster
   - Use two to three vocabulary words from the unit

   You may use the text and your annotations from the unit to help answer the question.

Student: _____ Examiner: _____ Date: _____

Words Read Correctly: _____ Errors: _____

Excerpt from *EARTHQUAKES*

Why do most earthquakes in the United States occur in California? The answer 13
lies deep within Earth. Our planet's solid rocky crust floats on the mantle, 26
a 1,800-mile-thick layer of very hot and dense rock that slowly churns around like a 41
huge pot of boiling soup in very slow motion. The slowly moving mantle carries along 56
the solid crust, which is cracked like an eggshell into a number of huge pieces called 72
plates. 73

The plates float slowly about on the mantle up to four inches a year. As the plates 90
move, they run into or pull away from each other, producing enormous strains in 104
the rocks along their edges. The United States and Canada are riding on the North 119
American plate, which is slowly moving against the Pacific plate. The colliding plates 132
cause most of the earthquakes along the West Coast. But earthquakes can occur 145
anywhere there are stresses in underlying rocks. 152

The San Andreas fault is the boundary line between the North American and the 166
Pacific plates. It winds seven hundred miles through southern California to just north 179
of San Francisco, where it heads west across the floor of the Pacific Ocean. Along the 195
way, it slashes under houses and dams, across deserts and farms, and through towns 209
and cities where more than 20 million people live. 218

Simon, Seymour. *Earthquakes*, Harper, 1991, pp. 13-14.

Excerpt from *EARTHQUAKES*

Why do most earthquakes in the United States occur in California? The answer lies deep within Earth. Our planet's solid rocky crust floats on the mantle, a 1,800-mile-thick layer of very hot and dense rock that slowly churns around like a huge pot of boiling soup in very slow motion. The slowly moving mantle carries along the solid crust, which is cracked like an eggshell into a number of huge pieces called plates.

The plates float slowly about on the mantle up to four inches a year. As the plates move, they run into or pull away from each other, producing enormous strains in the rocks along their edges. The United States and Canada are riding on the North American plate, which is slowly moving against the Pacific plate. The colliding plates cause most of the earthquakes along the West Coast. But earthquakes can occur anywhere there are stresses in underlying rocks.

The San Andreas fault is the boundary line between the North American and the Pacific plates. It winds seven hundred miles through southern California to just north of San Francisco, where it heads west across the floor of the Pacific Ocean. Along the way, it slashes under houses and dams, across deserts and farms, and through towns and cities where more than 20 million people live.

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Texts
&
Supporting Readings

In addition to the materials in this document, students will engage with third party, copyrighted materials as part of this unit. To see a list of those texts and their authors please visit: https://www.fishtanklearning.org/curriculum/ela/4th-grade/materials/