Topic: Volcanoes

Tier: 1

Text Type: Expository

Word Count: 370

Lexile Level: 980

Skills: Vocabulary
Reading Strategies
Summarization
Cause and Effect
Graphic Organizer
Comprehension

Lesson 1
Time: 20 minutes
Skills: Vocabulary

Lesson 2
Time: 20 minutes
Skills: Reading Strategies
Student Pages: Fire and Ice

Lesson 3
Time: 25 minutes
Skills: Summarization
Student Pages: Fire and Ice, Get the Gist

Lesson 4
Time: 20 minutes
Skills: Cause and Effect, Graphic Organizer
Student Pages: Causes and Effects

Lesson 5
Time: 20 minutes
Skills: Comprehension
Student Pages: Fire and Ice, Fire and Ice Assessment

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Note: Words in bold are said aloud by the teacher.

20 minutes

Build Background and Develop Vocabulary

Write the word *volcano* on the board. **What words do you know that have something to do with a volcano?** Make a list of students' words or concepts on the board. As students contribute to the list, have each student who contributes explain why he or she suggested the word. Clarify ideas or elaborate on concepts. Leave this list on the board so that you can return to it in the next lesson.

Make a list of the following words if they were not listed in the brainstorming activity, and discuss the words' meanings and their connection to volcanoes.

erupt – to force out or release something suddenly and violently

tectonic plates – very large pieces of Earth's surface that crash into each other and pull apart

magma – melted rock inside Earth

lava – melted rock that comes out of a volcano

Independent Practice

After the discussion, have each student write a paragraph about what he or she knows about volcanoes. The paragraph should include the four concepts listed above.

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20 minutes

Preview Text

Begin by having each student share his or her paragraph about volcanoes from the previous lesson.

Now distribute "Fire and Ice" (Student Activity 1). **Before reading, it is important to skim, or quickly look over, what you are going to read. Why do you think this is important?** Allow time for responses. **Skimming helps us see what the text is going to be about. Skimming helps determine the type of text. Is it fiction or expository? If it is a story, or fiction, we know that we will have characters, a setting, a problem, and a solution. If it is expository, the author is going to give us information on a topic. Since these types of texts are read differently, it is important to know the type before you start. While skimming, you might see words you do not recognize or know the meaning of. These might cause a problem when reading. We can clarify those words before getting started. When I skim, I usually read the first couple of sentences in the first paragraph. Then I read the first sentence of each remaining paragraph. If there are headings, I read those. That will give me a sense of what the passage is about.**

Let's skim this passage. Since it is not a long passage, take a few seconds to skim it. Allow students about 30 seconds to skim the passage. **What did you find out?** Allow time for responses.

Read 1

I know that the passage is expository and that it tells about a volcano erupting in Iceland. Now, it's time to read. Have students read the first paragraph and stop. After all students have finished reading the first paragraph, discuss what has been read and guide students through various reading strategies with the following guiding questions. If possible, display these questions on the board.

- **What does this remind you of so far? Where have you read about volcanoes before?**
- **Do you understand everything you read? If not, what do you not understand?**
- **What questions do you have?**
- **What do you think you will find out as you continue to read?**
- **What picture have the words painted in your mind so far?**
- **What do we know so far?**

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Read 1 (cont.)

Now I want you to read the next paragraph and stop. After students have finished reading, have them ask themselves one of the guiding questions. Follow this same procedure with the rest of the passage, stopping two additional times—after the third paragraph and then at the end of the passage.

Now, let's look back at our list of words about volcanoes. What new words can we add to this list now? Add the words to the list of words or concepts. Any words learned that were not a part of the original list should be added.

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25 minutes

Read 2

Redistribute or have students take out "Fire and Ice" (Student Activity 1). **Reread the passage "Fire and Ice." Pause after each paragraph to summarize what you have read.** Students may work with a partner. Each partner must share his or her summarization with his or her partner before continuing to the next section.

Summarize the Text

Distribute "Get the Gist" (Student Activity 2) to students. **Now, we will summarize the text. To summarize the expository text, we will reread and "get the gist" of each paragraph. "Get the gist" means to understand the main idea or ideas. After we write the main ideas presented in the passage, we will use them to create our summary for the entire passage.** Write the three steps of "Get the Gist" on the board and model the strategy with the first paragraph:

1. Who or what is the paragraph about?

2. What is the most important information about the who or the what?

3. Write the main idea in 15 words or less.

I'll model the strategy for you. Let's look at the first paragraph. Read the paragraph aloud. **Who or what is the paragraph about? This paragraph is about a volcano erupting in Iceland on April 14, 2010.** Write *volcano erupting in Iceland* under number 1. **What is the most important information about the who or the what? The eruption threw so much ash into the skies that airplanes could not travel.** Write this sentence under number 2. **Now, I have to write the main idea of this paragraph in 15 words or less. A volcano in Iceland erupted and shut down all flights.** Write this sentence under number 3. Have each student copy the information onto his or her worksheet.

Now, let's do the next paragraph together. Chorally read paragraph 2. Then find the main idea together by using the Get the Gist strategy.

<u>Example:</u>

1. Who or what is the paragraph about?
Iceland's location on top of the Mid-Atlantic Ridge

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Summarize the Text (cont.)

2. What is the most important information about the who or the what?
The Mid-Atlantic Ridge is an underwater mountain range where two tectonic plates meet. Sometimes these plates can shift and cause earthquakes, or magma comes up between them.

3. Write the main idea in 15 words or less.
The volcano erupted because magma came up between Iceland's two tectonic plates.

Have students determine the main ideas for the remaining paragraphs. After students complete the activity, have them share their work. Answers will vary but should include the main idea of each paragraph.

Suggested main ideas:

Paragraph 3: *After years of dormancy, the volcano showed signs of eruption.*

Paragraph 4: *Iceland's volcanic eruption was bad, but it had some good effects.*

Have each student write a summary paragraph. **Now, I want you to combine the main ideas to write a summary paragraph on the back of your worksheet. In your summary, make sure you include the title of the passage and all the important ideas from the passage.**

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20 minutes

Teach: Cause and Effect

Take a book and slam it down on a table. Watch students' reactions. Then ask why they jumped or why they reacted as they did. After students respond, begin drawing the diagram below on the board. Inside the first box, write *slammed book on table*. Inside the second box, write down the reaction students had.

Today, we will discuss causes and effects. Under the first box, write *Cause*. Under the second, write *Effect*. **A cause is what makes something happen. An effect is what happens.** Point to the cause-and-effect boxes as you refer to them. Use the students' reaction to formulate the following sentences: **You *jumped* because I slammed the book on the table. When you saw or heard me slam the book on the table, you *jumped*. Slamming the book on the table was the cause. *Jumping* was the effect.**

Draw another set of cause-and-effect boxes. In the Cause box, write *not finishing a homework assignment.* Above the Effect box, write *Possible Effects*. **What would be the effects of not finishing a homework assignment?** Have students brainstorm effects. Write each effect inside the Effect box. Review definitions for cause and effect. **What is a cause?** (*what makes something happen*) **What is an effect?** (*what happens*)

Draw the cause-and-effect boxes again. In the Effect box, write *The teacher canceled the museum field trip*. **Why did the teacher cancel the museum field trip, or what might have caused the teacher to cancel the field trip?** Write *Possible Causes* above the Cause box. Have students give reasons why the field trip would be canceled. Record their responses in the Cause box. Review the definitions for cause and effect.

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Teach (cont.)

After students have a good understanding of cause and effect, have them think of some examples that happen to them in their daily lives and use the terms *cause* and *effect* to describe them. (For example, "The cause was *I did not wash the dishes when it was my night to do them*. The effect was *I had to wash them for the entire week*.")

We can find cause-and-effect relationships in text when we read. We look for things or events that happened. Then we ask what caused them to happen.

Authors sometimes use words that signal causes and effects. Here are some of those words. Write the list of words on the board as you say them.

so
therefore
because
If . . . then
When . . .
as a result
This led to . . .
causes
effects
This allows . . .

Guided Practice: Cause and Effect

Now we will use what we know about cause-and-effect relationships as we read. Distribute "Causes and Effects" (Student Activity 3). **We will read this passage together. As we read, pay attention to signal words and cause-and-effect relationships.** Read the passage chorally with students. **Did you notice some causes and effects?** Have students skim the text for cause-and-effect signal words and underline each one. **For each signal word or phrase, identify the cause-and-effect relationship.** Assist students in recording the causes and effects from the passage onto the graphic organizer at the bottom of the page. Not all cause-and-effect relationships have signal words. Remind students to ask themselves what happened and what caused it to happen to find the cause-and-effect relationships.

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Independent Practice: Cause and Effect

Return to the cause-and-effect relationships created during the Teach section. Have each student use the signal words to draft a story around one of the following: *not finishing a homework assignment* or *The teacher canceled the museum field trip*. The story should include cause-and-effect relationships. Have students share their drafts with the group.

Observe and chart progress of each student's ability to identify cause-and-effect relationships.

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20 minutes

Assessment

For this lesson, redistribute or have students take out "Fire and Ice" (Student Activity 1). Also, distribute "Fire and Ice: Assessment" (Student Activity 4).

I want you to reread the passage "Fire and Ice" and answer the questions. Notice that after each question you must provide evidence from the text. You may copy the sentence or sentences from the passage where you found the information to support your answer.

Collect the papers or designate a place for students to put completed papers.

Use data from this assessment to plan further instruction. Students will benefit from feedback, so plan to go over the assessment as soon as possible with the group.

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Name: _____ Date: _____

Fire and Ice

Who could bring air travel in Europe to a screeching halt? The Roman god Vulcan, that's who. And he did, on April 14, 2010, when a volcano in Iceland erupted. The explosion sent a huge cloud of ash spewing across the skies of northern Europe. This made visibility so bad that airports were forced to stop all flights.

In reality, it wasn't an ancient god who caused the earth to spit fire into the heavens. It was Iceland's location. In spite of its "icy" name, this island country is a volcano paradise. It sits atop a long underwater mountain range known as the Mid-Atlantic Ridge. This ridge follows the line where two tectonic plates meet. Tectonic plates are vast fragments of Earth's crust—kind of like puzzle pieces that don't quite fit. They exert huge amounts of pressure on each other. Sometimes, they slip, creating earthquakes. Other times, hot boiling magma from Earth's center finds its way up between them, which causes volcanic eruptions. This is what happened on April 14, 2010, when the Icelandic volcano Eyjafjallajökull erupted. (You don't need to be able to pronounce this name, but you might like to know that it means "island-mountain glacier.")

The eruption actually started weeks earlier, when the volcano began stretching and yawning after about 200 years of dormancy. On March 20, 2010, people noticed a huge red cloud glowing above the mountain. In the following days, fountains of fire began spitting through cracks in the volcano's surface. Next, liquid snakes of lava began sliding down the mountain. Finally, on April 14, a volcanic explosion sent huge plumes of fire and ash miles into the sky. This is when all the major airports of northern Europe realized they were in trouble.

The god Vulcan isn't known for his playfulness—and the airline companies certainly weren't laughing. But in some ways, the eruption was a plus. The event gave Iceland an economic boost as tourists poured into the country to witness the spectacle. And, as one scientist pointed out, natural events like this one have a lot to teach us about the way the planet takes care of itself. "It's a laboratory exercise," he said, "and the lab is the Earth itself."

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Name: _____ Date: _____

Get the Gist

Paragraph 1

1. Who or what is the paragraph about?
2. What is the most important information about the who or the what?
3. Write the main idea in 15 words or less.

Paragraph 2

1. Who or what is the paragraph about?
2. What is the most important information about the who or the what?
3. Write the main idea in 15 words or less.

Paragraph 3

1. Who or what is the paragraph about?
2. What is the most important information about the who or the what?
3. Write the main idea in 15 words or less.

Paragraph 4

1. Who or what is the paragraph about?
2. What is the most important information about the who or the what?
3. Write the main idea in 15 words or less.

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Name: _____ Date: _____

Causes and Effects

Read the paragraph below. Underline any cause-and-effect signal words. Record the causes and effects on the graphic organizer.

An earthquake is a sudden movement of the earth's crust. The earth's crust is like huge puzzle pieces floating atop magma. These puzzle pieces are known as tectonic plates. The plates are free to slowly move. They can move toward each other, away from each other, or under each other. Normally, the plates move and stick together until the forces pushing on them become too great. When this happens, one of the plates moves away suddenly.

Imagine throwing a rock in a pond. When the rock hits the water, you see ripples, or circles of waves moving outward from the center. This same effect takes place under the earth's surface when one of the plates moves suddenly. The shock of the movement creates waves. As a result, the waves are felt as an earthquake. Sometimes there are several small shocks before a devastating earthquake.

Cause		Effect
	→	
	→	
	→	

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Causes and Effects (Answer Key)

Read the paragraph below. Underline any cause-and-effect signal words. Record the causes and effects on the graphic organizer.

An earthquake is a sudden movement of the earth's crust. The earth's crust is like huge puzzle pieces floating atop magma. These puzzle pieces are known as tectonic plates. The plates are free to slowly move. They can move toward each other, away from each other, or under each other. Normally, the plates move and stick together until the forces pushing on them become too great. When this happens, one of the plates moves away suddenly.

Imagine throwing a rock in a pond. When the rock hits the water, you see ripples, or circles of waves moving outward from the center. This same effect takes place under the earth's surface when one of the plates moves suddenly. The shock of the movement creates waves. As a result, the waves are felt as an earthquake. Sometimes there are several small shocks before a devastating earthquake.

Cause		Effect
Forces pushing on the plates become too great.	→	One of the plates moves away suddenly.
One of the plates moves suddenly.	→	Waves like ripples are produced under the earth's surface.
Waves are produced under the surface.	→	The waves are felt as an earthquake.

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Name: _____ Date: _____

Fire and Ice: Assessment

Reread "Fire and Ice." Read the questions and circle the best answer for each one. Provide evidence from the text in the space after each question.

1. What forced airports to stop all flights on April 14, 2010?

   A. Many tourists wanted to fly to witness the spectacle.
   B. Pilots could not see clearly enough to fly the planes.
   C. The Mid-Atlantic Ridge moved too quickly and slipped.
   D. The Roman god Vulcan caused a volcano to erupt.

Evidence: _____

2. Volcanic eruptions are caused when . . .

   A. underwater mountains break into pieces.
   B. the Roman god Vulcan wants an eruption.
   C. tectonic plates exert huge amounts of pressure.
   D. magma makes its way to the surface of the earth.

Evidence: _____

3. What words from the passage help the reader understand the meaning of *dormancy*?

   A. actually started
   B. began stretching and yawning
   C. glowing above the mountain
   D. 200 years

Evidence: _____

4. Why were airline companies not laughing the week of April 14, 2010?

   A. They lost a lot of money in the shutdown.
   B. Their pilots had to work overtime.
   C. Iceland was getting many tourists.
   D. The Mid-Atlantic Ridge went underwater.

Evidence: _____

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Fire and Ice: Assessment (Answer Key)

Reread "Fire and Ice." Read the questions and circle the best answer for each one. Provide evidence from the text in the space after each question.

1. What forced airports to stop all flights on April 14, 2010?

   A. Many tourists wanted to fly to witness the spectacle.
   B. Pilots could not see clearly enough to fly the planes.*
   C. The Mid-Atlantic Ridge moved too quickly and slipped.
   D. The Roman god Vulcan caused a volcano to erupt.

Evidence: The explosion sent a huge cloud of ash spewing across the skies of northern Europe. This made visibility so bad that airports were forced to stop all flights.

2. Volcanic eruptions are caused when . . .

   A. underwater mountains break into pieces.
   B. the Roman god Vulcan wants an eruption.
   C. tectonic plates exert huge amounts of pressure.
   D. magma makes its way to the surface of the earth.*

Evidence: Other times, hot boiling magma from Earth's center finds its way up between them, which causes volcanic eruptions.

3. What words from the passage help the reader understand the meaning of *dormancy*?

   A. actually started
   B. began stretching and yawning*
   C. glowing above the mountain
   D. 200 years

Evidence: Stretching and yawning is something people often do after they wake up. After 200 years of dormancy things started happening, such as fountains of fire spitting through cracks.

4. Why were airline companies not laughing the week of April 14, 2010?

   A. They lost a lot of money in the shutdown.*
   B. Their pilots had to work overtime.
   C. Iceland was getting many tourists.
   D. The Mid-Atlantic Ridge went underwater.

Evidence: On April 14, 2010, a volcano in Iceland erupted. The explosion sent a huge cloud of ash spewing across the skies of northern Europe. This made visibility so bad that airports were forced to stop all flights.

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