

Scan Lesson 1. In your Science Journal, write three questions that you have about earthquakes. Try to answer your questions as you read.

Main Idea

What are earthquakes?

I found this on page _____.

Where do earthquakes occur?

I found this on page _____.

I found this on page _____.

Details

Define earthquakes.

Summarize the distribution of earthquakes on Earth.

Categorize information about the relationship between earthquake events and plate boundaries.

Boundary Type	Depth of Earthquake	Other Details
Convergent boundaries		
Divergent boundaries		
Convergent boundaries involving two continents		

I found this on page _____.

Illustrate rock deformation, and write a short description of how this process works.

Drawing	Description

Lesson 1 | Earthquakes (continued)

Main Idea

I found this on page _____.

Details

Describe each type of fault.

Type of Fault	Description	Location
Strike-slip		
Normal		
Reverse		

I found this on page _____.

Distinguish between an earthquake's focus and its epicenter.

Seismic Waves

I found this on page _____.

Compare the 3 types of seismic waves. Provide at least three details about each type.

Type of Fault	Description
Primary waves (P-waves)	
Secondary waves (S-waves)	
Surface waves	

Main Idea

Mapping Earth's Interior
I found this on page _____.

I found this on page _____.

I found this on page _____.

Details

Identify what scientists have discovered about Earth's interior by studying seismic waves.

Inner and outer core: _____

Mantle: _____

Distinguish between a seismometer and a seismogram.

Seismometer	Seismogram

Sequence the steps followed in locating an earthquake's epicenter.

<p>Find the arrival time difference.</p> <p>Determine the _____ between the appearance of the first _____ and the first _____ on the seismogram.</p>
<p>Find the distance to the epicenter.</p> <p>Use a _____ to determine _____. Find the time difference on the _____. Read the distance from the epicenter on the _____.</p>
<p>Plot the distance on the map.</p> <p>Draw a _____ around the seismometer location so that all points are the same distance from the station determined in Step 2.</p> <p>Repeat these steps for at least _____ more seismometer locations. The epicenter is _____.</p> <p>_____</p>

Main Idea

Determining Earthquake Magnitude

I found this on page _____.

Details

Compare and contrast the Richter magnitude scale, the moment magnitude scale, and the Modified Mercalli scale.

Richter Magnitude Scale

The scale uses the amount of _____
 at a given _____ from an earthquake
 to determine _____

All
 Measure the size, or intensity, of
 an earthquake

Moment Magnitude Scale

Measures the _____

 released by an earthquake;
 energy released depends on:

1. the size of the _____;
2. the _____ that occurs;
3. the _____ of the rocks.

Modified Mercalli Scale

Measures the _____
 _____ that
 results from _____
 Determined based on

 Scale ranges from _____
 to _____

I found this on page _____.

Record four indicators that seismologists use to determine earthquake risk.

1. _____
2. _____
3. _____
4. _____

Analyze It Explain why two different earthquakes with the same Richter magnitude scale readings could have very different Modified Mercalli scale numbers.

Lesson 2 Volcanoes

Predict three facts that will be discussed in Lesson 2 after reading the headings. Record your predictions in your Science Journal.

Main Idea

What is a volcano?

I found this on page _____.

How do volcanoes form?

I found this on page _____.

I found this on page _____.

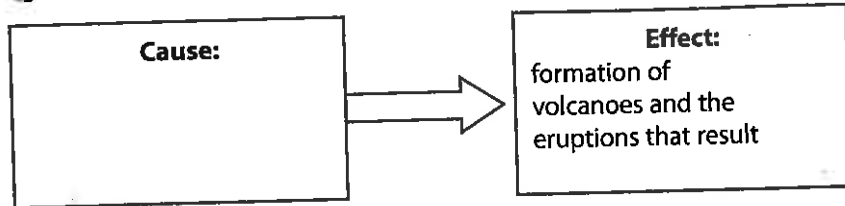
I found this on page _____.

I found this on page _____.

Details

Define volcano. Include in your definition the term for the molten rock beneath Earth's surface.

Identify the cause of the formation of volcanoes.



Sketch the movement of plates where volcanoes occur.

Area	Sketch
Convergent boundaries	
Divergent boundaries	
Hot spots	

Main Idea

Where do volcanoes form?

I found this on page _____.

I found this on page _____.

I found this on page _____.

Types of Volcanoes

I found this on page _____.

I found this on page _____.


Details

Identify the location of most of the world's active volcanoes.


Explain the relationship between the Ring of Fire, volcanoes, and plate boundaries.

Record 4 factors that scientists monitor to determine the likelihood of a volcanic eruption.

1. _____
2. _____
3. _____
4. _____

 **Identify** the 2 characteristics scientists use to classify volcanoes.

1. _____
2. _____

 **Model** the shapes and sizes of the 3 types of volcanoes. Label your drawings.

Main Idea

Volcanic Eruptions

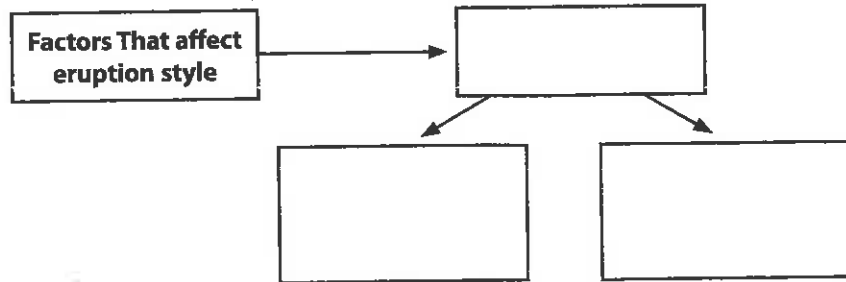
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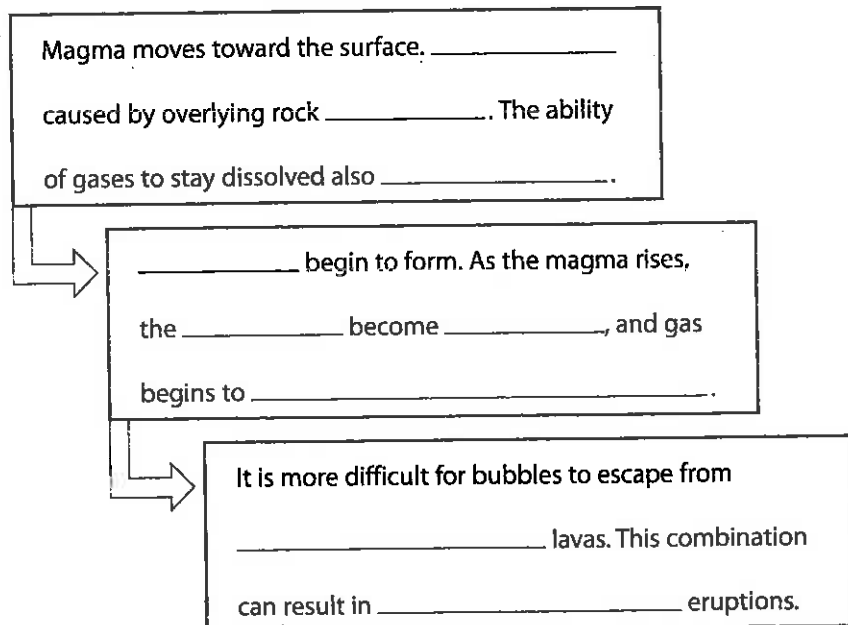
Identify 3 factors that affect eruption style.



Distinguish among magmas with different silica content.

Silica Content	Viscosity	Where these eruptions commonly occur
Low		
High		
Intermediate		

Sequence steps that lead to explosive eruptions as dissolved gases escape from magma.



Main Idea

Details

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I found this on page _____.

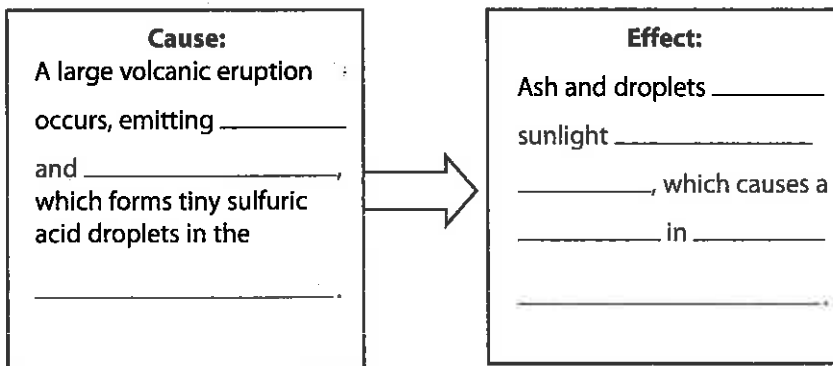
Volcanic Eruptions and Climate Change

I found this on page _____.

Describe four effects of volcanic activity.

Activity	Effects
Lava flows	
Ash fall	
Mudflows	
Pyroclastic flow	

Identify the effect of volcanic eruptions on climate.



Connect It The Cascade Range in the northwestern United States has many volcanoes, including Mount St. Helens. These mountains are at a convergent plate boundary. Identify the type of volcano you would most expect to find in the Cascade Range and the nature of its eruptions.
