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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 1: Earth Is Always Changing

### Comprehension Questions

1. What did Earth probably look like millions of years ago?
  - a. Continents were drifting together.
  - b. *There was only one big continent — a supercontinent.*
  - c. Earth was mostly land.
  - d. Earth looked just like it does today.
  
2. How is Earth like an egg?
  - a. *Earth's crust is a bit like the shell of an egg, the mantle is like the egg white, and the core is like the yolk.*
  - b. Earth is the same shape as an egg.
  - c. The mantle and core of Earth are made of a thick liquid like egg yolk.
  - d. The crust of Earth is solid and has no cracks in it.
  
3. What is plate tectonics?
  - a. Digging 20 miles into the ground.
  - b. The study of ancient fossils from the Pangea.
  - c. *The movement of large pieces of Earth's crust.*
  - d. Plants spreading across two continents.

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 1: Earth Is Always Changing

### Vocabulary Questions

1. \_\_\_\_\_ is the study of how Earth changes over time.
  - a. Wegener
  - b. Celsius
  - c. Vulcan
  - d. Geology
  
2. A \_\_\_\_\_ is a part of an animal or plant that has hardened into rock or left its shape in a rock.
  - a. fossil
  - b. mantle
  - c. crust
  - d. plate
  
3. Earth's \_\_\_\_\_ is made up of partly molten (melted) rock and metal.
  - a. mantle
  - b. crust
  - c. core
  - d. tectonic plate
  
4. One system of measuring temperature is called \_\_\_\_\_ degrees.
  - a. Celsius
  - b. core
  - c. Pangea
  - d. liquid

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 2: What Causes Volcanoes?

### Comprehension Questions

1. What do all volcanoes have in common?
  - a. All volcanoes are formed over a plume.
  - b. All volcanoes require a plate collision.
  - c. All volcanoes are at least two million years old.
  - d. *All volcanoes are formed by hot molten rock called magma.*
  
2. What creates most of the volcanoes on earth?
  - a. Strong winds from a tornado.
  - b. *Tectonic plates crashing together or pulling apart.*
  - c. The cooling of lava.
  - d. Water boiling at 450 degrees Celsius.
  
3. Where do hot spot volcanoes form?
  - a. *They form over a plume which is a column or channel of magma underneath one of Earth's plates.*
  - b. They form along the Ring of Fire in the Indian Ocean.
  - c. They form inside the chambers (pockets) of a volcano.
  - d. They form in Iceland along a crack under the Atlantic Ocean.

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 2: What Causes Volcanoes?

### Vocabulary Questions

1. Molten rock that forms in Earth's mantle or middle layer is called \_\_\_\_\_.
  - a. core gas
  - b. tectonic plates
  - c. *magma*
  - d. chamber rock
  
2. A \_\_\_\_\_ is a channel of magma that rises up from the mantle underneath one of Earth's plates.
  - a. boundary
  - b. *plume*
  - c. drift
  - d. fossil
  
3. The line of volcanoes around the edges of the Pacific Ocean is called \_\_\_\_\_.
  - a. *the Ring of Fire*
  - b. the Pangea
  - c. Iceland
  - d. the Vulcan Ring
  
4. When molten rock pours out onto Earth's surface, volcanologists call it \_\_\_\_\_.
  - a. soda gas
  - b. metal
  - c. *lava*
  - d. crust

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 3: A Monster Volcano

### Comprehension Questions

1. What are some of the clues that Mount Pelée gave when it was about to erupt?
  - a. All the ants, snakes and centipedes disappeared.
  - b. Fish in the ocean suddenly died and black ash filled the sky.
  - c. Loud booms like thunder came from the mountain.
  - d. Toxic gas killed birds, and the mountain began to grow in size.
  
2. How did people nearby react to the clues?
  - a. Most people did not believe that the mountain was about to erupt.
  - b. Most people built thick stone walls around their homes.
  - c. People left the island and went to Martinique.
  - d. People blamed Charles Thompson for the problems.
  
3. Why do scientists say that pyroclastic flows are killers?
  - a. Because a pyroclastic flow can drift to other continents.
  - b. Because a pyroclastic flow can form hot spots that become volcanoes too.
  - c. Because a pyroclastic flow is extremely hot and can burn anything in its path.
  - d. Because a pyroclastic flow contains enough water to drown people.

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 3: A Monster Volcano

### Vocabulary Questions

1. \_\_\_\_\_ gas will hurt or kill people and animals when they breathe it.
  - a. soda
  - b. planet
  - c. toxic
  - d. molten
  
2. A \_\_\_\_\_ is a cloud of hot gas that blasts out of a volcano and moves very fast.
  - a. pyroclastic flow
  - b. volcanologist
  - c. supercontinent
  - d. Celsius
  
3. Mount Pelée started giving off a gas that smelled like rotten eggs. The smell told people that there was \_\_\_\_\_ in the gas.
  - a. magma
  - b. sulfur
  - c. black ash
  - d. egg yolk
  
4. People in the city of St. Pierre didn't pay much attention to the \_\_\_\_\_ that were coming from Mount Pelée.
  - a. animals
  - b. geologists
  - c. clues
  - d. fossils

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 4: What Causes Earthquakes?

### Comprehension Questions

1. What kind of movement causes earthquakes?
  - a. The movement of a pyroclastic flow.
  - b. *The movement of Earth's tectonic plates rubbing against each other or sliding under each other.*
  - c. The movement of lava deep in Earth's core.
  - d. The movement of active volcanoes.
  
2. What is an earthquake zone?
  - a. *An area where scientists expect earthquakes to happen.*
  - b. An area where earthquakes never happen.
  - c. An area that contains active volcanoes.
  - d. An area where large earthquakes happen every year.
  
3. Why do tectonic plates sometimes move suddenly or jump?
  - a. Because magma explodes in a chamber in Earth's crust.
  - b. Because a volcano has just erupted.
  - c. Because too many cars and trucks are moving through an earthquake zone.
  - d. *Because the edges of the plates are rocky, rough, and bumpy.*

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 4: What Causes Earthquakes?

### Vocabulary Questions

1. The tectonic plates are always moving, causing thousands of \_\_\_\_\_ every day around the world.
  - a. volcanoes
  - b. deaths
  - c. *earthquakes*
  - d. dotted lines
  
2. A crack or line in Earth's crust is called a \_\_\_\_\_.
  - a. plate
  - b. *fault*
  - c. zone
  - d. boundary
  
3. Farmers plow the soil and cut long straight rows called \_\_\_\_\_.
  - a. *furrows*
  - b. edges
  - c. fields
  - d. centipedes
  
4. As time goes by, \_\_\_\_\_ builds and builds in the place where the tectonic plates are stuck.
  - a. a furrow
  - b. *pressure*
  - c. the plate
  - d. distance



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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 5: Monster Earthquakes

### Comprehension Questions

1. How do scientists tell how strong an earthquake was?
  - a. By using a seismograph and the Richter Scale.
  - b. By using a Chinese invention that is nearly 2000 years old.
  - c. By looking at how much damage the earthquake caused.
  - d. By measuring how far the tectonic plates moved.
  
2. What was the strongest earthquake that scientists have measured?
  - a. An earthquake that happened just before Mount Pelée erupted.
  - b. An earthquake in China in the year 132.
  - c. An earthquake in California.
  - d. An earthquake in Chile in 1960.
  
3. What was the second strongest earthquake?
  - a. An earthquake in the Atlantic Ocean near a volcanic hot spot.
  - b. An earthquake near Japan that killed 30,000 people.
  - c. An earthquake in Alaska in 1964.
  - d. The Great Earthquake of 1906 that struck in San Francisco.

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 5: Monster Earthquakes

### Vocabulary Questions

1. \_\_\_\_\_ are smaller earthquakes that come after a bigger one on the same fault.
  - a. Uplifts
  - b. Foreshocks
  - c. Faults
  - d. Aftershocks
  
2. Today, earthquakes are measured and recorded on a machine called a \_\_\_\_\_.
  - a. seismograph
  - b. Richter
  - c. dragon head
  - d. tape recorder
  
3. The strength of an earthquake is called its \_\_\_\_\_.
  - a. zone
  - b. magnitude
  - c. scale
  - d. boundary
  
4. The \_\_\_\_\_ of an earthquake is the ground above the place in the crust where an earthquake starts.
  - a. island
  - b. epicenter
  - c. hot spot
  - d. plume

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 6: Killer Waves and Other Long Distance Damage

### Comprehension Questions

1. How can an earthquake kill people thousands of miles away?
  - a. By creating killer waves that travel thousands of miles across the ocean.
  - b. By putting deadly sulphur gas into the air.
  - c. By creating volcanoes thousands of miles away.
  - d. By starting a super-hot pyroclastic flow that travels at 200 miles an hour.
  
2. What events can cause tsunamis?
  - a. Forest fires, cracks in Earth's crust and pyroclastic flows.
  - b. Flooding rivers.
  - c. Earthquakes, volcanic eruptions in or near the ocean, or giant landslides.
  - d. Thunderstorms.
  
3. How did the eruption of Tambora kill people on the other side of the world?
  - a. Dust and gas from the eruption caused temperatures to go down all around the world, and this destroyed crops and caused famine.
  - b. The atmosphere got so hot that people on the other side of the world were burned to death.
  - c. The volcano caused dangerous earthquakes all around the world.
  - d. The ash from the volcano made crops around the world turn a reddish color.

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 6: Killer Waves and Other Long Distance Damage

### Vocabulary Questions

1. The blanket of air around Earth is called the \_\_\_\_\_.
  - a. uplift
  - b. plume
  - c. atmosphere
  - d. mantle
  
2. In a \_\_\_\_\_, people starve because they don't have enough food to eat.
  - a. fault
  - b. famine
  - c. pyroclastic flow
  - d. death toll
  
3. A giant wave that is caused by an earthquake or volcano is called \_\_\_\_\_.
  - a. an aftershock
  - b. an earthquake zone
  - c. a tsunami
  - d. a plate
  
4. People can die in earthquakes when buildings and roads \_\_\_\_\_.
  - a. collapse
  - b. erupt
  - c. collide
  - d. drift

# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 7: Fighting Volcanoes and Earthquakes

### Comprehension Questions

1. How are volcanologists trying to save people from volcanoes?
  - a. Volcanologists use tools to monitor the land, and then they try to predict when a volcano is likely to erupt.
  - b. Volcanologists learn first aid, and then join rescue teams to save people.
  - c. Volcanologists teach people to use the Richter Scale.
  - d. Volcanologists give a seismograph to every village and city that is near a volcano.
2. How are scientists trying to save people from earthquakes and tsunamis?
  - a. By making sure that everybody has left the city before an earthquake or tsunami arrives.
  - b. By telling everyone they should never live in countries where earthquakes and tsunamis are possible.
  - c. By designing buildings that won't collapse in earthquakes and by setting up systems to warn people about tsunamis.
  - d. By sending records of the death toll all around the world.
3. How did cold water save a town in Iceland?
  - a. Scientists sprayed the hot lava with cold sea water to stop the lava flow from destroying the town.
  - b. A cold rain put out the fires that were started by a volcano.
  - c. A rescue team brought cold water from Alaska to Iceland so that the people there had clean water to drink.
  - d. Scientists used airplanes to drop chunks of sea ice into the mouth of a volcano.

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# Understanding Volcanoes and Earthquakes

Start-to-Finish® Core Content



## Chapter 7: Fighting Volcanoes and Earthquakes

### Vocabulary Questions

1. An active volcano is a dangerous place to be. People who live nearby must \_\_\_\_\_.
  - a. move inside
  - b. build
  - c. spray
  - d. *evacuate*
  
2. Scientists use seismographs to \_\_\_\_\_ the land around a volcano.
  - a. pressure
  - b. *monitor*
  - c. swell
  - d. dig
  
3. Scientists use many tools to help them make \_\_\_\_\_ about volcanoes, earthquakes and tsunamis.
  - a. clues
  - b. furrows
  - c. *predictions*
  - d. pictures
  
4. \_\_\_\_\_ are rules or laws that builders must follow to make buildings safer during earthquakes.
  - a. *Building codes*
  - b. Pangeas
  - c. Epicenters
  - d. Plate tectonics