Name _____ **Date** _____

Earthquakes

Key Words		
aftershocks	constructive	destructive
earthquake	energy	fault
islands	landforms	ocean
plates	radiate	surface
waves		

Earthquakes can change the Earth's **surface** quickly and dramatically. They can occur suddenly and without warning, causing buildings and bridges to collapse in just a few seconds. Homes and entire cities can be destroyed by earthquakes. An **earthquake** is a sudden movement of the rocks and rock slabs in the Earth's crust. These movements might be so small that people cannot even feel them. Stronger earthquakes may be felt by people many miles away from where the earthquake takes place. Earthquakes can last from several seconds to several minutes and are often followed by aftershocks. **Aftershocks** are smaller earthquakes **radiating** from the center of the first earthquake.

Earthquakes often happen along cracks in the Earth's crust known as **faults.** During an earthquake, pressure in the crust causes movement along these faults. **Energy** can be released at faults in the form of earthquakes. The energy released at the faults travels outward from the fault in waves. These waves make the crust tremble and quake, often causing it to buckle. Thousands and thousands of earthquakes occur each year all around the world. Of these thousands of earthquakes, only about 100 are strong enough to cause damage.

Earthquakes can happen anywhere at any time. However, they are not common in all parts of the world. Most of the earthquakes happening each year take place around the edge of the Pacific Ocean. This area is often called "the Ring of Fire" by scientists that study earthquakes. Eighty percent of the world's earthquakes occur in the Ring of Fire. Two types of earthquakes occur in these areas: deep-focus

earthquakes and shallow-focus earthquakes. Deep-focus earthquakes begin much farther below the surface than do shallow-focus earthquakes.

Earth's crust is broken into "plates" or sections. These plates fit together like a giant jig-saw puzzle. Many of the plates are located in the Pacific Ocean. The plates do not move slowly and steadily against each other along the faults. Instead, they stick together until the forces pushing on them become very great. Then one of the plates makes a quick movement. The jolt of this movement produces waves in the crust like ripples in a pond. These waves are felt as an earthquake.

Earthquakes on the Earth's surface can do more than shake buildings and city streets. As a result of the shaking, explosions and fires can occur. Earthquakes can also trigger landslides and create new **landforms**. In some places, land may drop during an earthquake. In other places, land may rise. Valleys, mountains, and new volcanoes have been formed as a result of earthquakes. Just as they do on land, earthquakes can change the features on the ocean floor. Earthquakes can cause the ocean floor to "sink", creating deep trenches and causing tsunamis. Sometimes volcanoes form in these trenches. The repeating eruptions of volcanoes can change the shape of the ocean floor and even lead to the creation of new islands in the middle of the ocean. Due to the changes they cause in the Earth's surface, earthquakes can be both **constructive** and **destructive**.

1. Think carefully about what you have read. Which of the following statements BEST describes the Earth's surface?

- **A** The Earth's surface has not changed in thousands of years.
- **B** No one knows why the Earth's surface changes.
- **C** Constructive and destructive forces are constantly changing Earth's surface.
- **D** Changes in the Earth's surface occur so slowly that they are hardly noticeable.

2. In which of these ways can earthquakes build up new land?

- **A** Earthquakes can cause land under the oceans to sink, creating deep trenches.
- **B** Earthquakes cause homes, buildings, and bridges to collapse.
- **C** Mountains and volcanoes can be formed by the action of earthquakes.
- **D** Aftershocks from earthquakes can cause explosions and fires.

3. What is the “Ring of Fire”?

A The part of the Earth where the most deep-focus earthquakes occur

B The burning of cities and land that occurs after an earthquake

C The waves that radiate out from an earthquake to the surrounding areas

D The edge of the Pacific Ocean where most earthquakes on the Earth occur every year

4. Which of the following is the MOST LIKELY cause of a new island forming in the middle of the ocean?

A Earthquakes creating tsunamis in the ocean

B Repeated eruptions of a volcano on the ocean floor

C Earthquakes knocking down mountains under the ocean

D Deposition of sediments on the ocean floor by waves

5. ALL earthquakes—

A are caused by the sudden movements of plates in the Earth’s crust

B cause a great deal of destruction around the world

C can be felt by people many miles away

D lead to the creation of new landforms on the Earth’s surface

6. Which of the following is a constructive change to the Earth’s surface caused by earthquakes?

A Formation of deep trenches on the ocean floor

B Breaking rock into sediments by shaking the Earth

C Creation of mountains by plate movement

D Dropping of land in some places following an earthquake

7. What is the main difference between deep-focus earthquakes and shallow-focus earthquakes?

A Deep-focus earthquakes occur farther below the surface.

B Shallow-focus earthquakes occur farther below the surface.

C Deep-focus earthquakes cause more damage than shallow-focus earthquakes.

D Shallow-focus earthquakes occur more frequently than deep-focus earthquakes.

You can often determine the meaning of a word by using the context clues around it. Look at each word below. The numbers in the parentheses tell the paragraph in the reading containing that word. Go back to each paragraph and find the word that fits the definitions. Write the words in the blanks.

8. Sudden movement of rocks or slabs of rock in the Earth's crust (1)

_____

9. Spreading out from the center (1) _____

10. Cracks in the Earth's crust (2) _____

11. Widely found (3) _____

12. Areas surrounding the Pacific Ocean (3) _____

13. Rocky section of the Earth's crust (4) _____

14. Build up new land and landforms (5) _____

15. Tear down or destroy landforms (6) _____

16. Valley or ditch on the ocean floor (6) _____

Road Damage Caused by an Earthquake

aftershocks	constructive
destructive	earthquake
energy	fault
islands	landforms
ocean	plates
radiate	surface
waves	

I have the first card. Who has large bodies of water that cover nearly three-fourths of the Earth's surface?	I have **oceans.** Who has the term for land that is completely surrounded by water?
I have **island.** Who has the term for natural features found on the Earth's surface?	I have **landforms.** Who has the highest landforms with steep sides and pointed tops?
I have **mountains.** Who has the word for forces that build up the Earth's surface?	I have the word **constructive.** Who has a sudden movement of the Earth's crust that can destroy buildings and bridges?
I have **earthquake.** Who has the term for what is released in an earthquake?	I have **energy.** Who has the term for how the energy travels outward from an earthquake?
I have **waves.** Who has the word that means to travel out from the center in waves?	I have **radiate.** Who has the small earthquakes that radiate from the center following a large earthquake?

I have the word **aftershocks.** Who has the upper part of the Earth that meets the atmosphere?	I have **surface.** Who has the word for cracks found in the Earth's surface?
I have **faults**. Who has the word for the large slabs of rocks that move along faults?	I have **plates.** Who has the word for forces that break down or tear apart landforms?
I have the word **destructive?** Who has the first card?	

Name _____ **Home Room** _____

Earthquakes

Directions: Draw a line from word to word to complete the maze as your classmates read the clues.

START	ocean	destructive	**FINISH**
aftershock	islands	plates	landforms
mountains	landforms	fault	ocean
constructive	earthquake	surface	aftershock
mountains	energy	waves	radiate
islands	destructive	fault	energy

1. _____ the natural features of a land surface
2. _____ the largest bodies of water that cover nearly ¾ of the Earth's surface
3. _____ land that is surrounded by water on three sides
4. _____ a force that tears down or breaks apart landforms
5. _____ a shaking of the earth caused by the movements of large slabs of rock in the Earth's crust
6. _____ a force that builds up or creates new landforms
7. _____ a crack in the Earth's crust along which movement occurs
8. _____ a landform with steep sides and a pointed top