

Reading Comprehension

What Makes Earthquakes

DIRECTIONS

Read the article, "What Makes Earthquakes" below then answer the 10 reading comprehension questions that follow. Remember to use your SQ4R strategies for this exercise.

What Makes Earthquakes

They happen as pieces of the earth's crust grind together

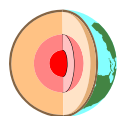
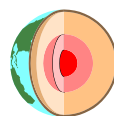
The earth rumbles, shakes and splits open. Windows rattle. Buildings collapse. It's a strong earthquake, an event that happens somewhere on the earth more than twice a day. (Minor earthquakes occur thousands of times a day.) What causes earthquakes, and why are they more common in some places than others? It all has to do with the way the earth's brittle crust, and the viscous layers below it, move. If you could slice the earth in half, it would resemble a giant egg. In the center is an iron core that's almost as hot as the sun. That warms the next layer, the mantle, which encases the core like an egg white around a yolk. The mantle, which is mostly molten rock, is the earth's thickest layer. On top of that sits the thinnest layer, the rigid crust. Like a cracked eggshell, the crust is broken into jagged sections, which are called plates. They float on top of the mantle, drifting roughly as fast as your fingernails grow. The movement is usually smooth, but when plates grind together they can bump and jerk, which leads to the shaking that we know as earthquakes.

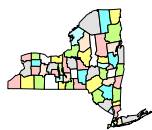
Earthquakes usually happen at "faults," zones where plates meet. Quakes and faults come in many varieties, but there are a few common ones. One of the most famous faults, the San Andreas Fault, is a "transform fault," in

which two plates slide past each other. When the edges of the plates stick together, pressure builds up as the plates themselves continue to move. Eventually the edges break free in a violent, shaking earthquake.

Another kind of fault, a "convergent fault," occurs where plates push against each other. That can make the edges of one or both crumple, causing earthquakes and building mountains. Sometimes one plate slips beneath the other, diving into the hot mantle. The heat melts the plate, which can spew back up as molten rock, bursting through the surface to form a volcano. Finally, a "normal fault" is a place where plates move away from each other. Lava from the mantle bubbles up in the gap between them. When it cools, it forms a new section of crust.

Scientists rate quakes on the Richter scale, invented by Beno Gutenberg and Charles Richter in 1935. Each level on the scale represents a quake 10 times more powerful than the level below. For example, a quake rated at 3 is 10 times more powerful than one rated at 2. Earthquakes aren't very destructive until they reach about 5 on the scale. Much of the damage happens during aftershocks, rumbles that occur as the earth's crust settles into its new configuration. They can give the final push to things knocked loose during the original event.





Reading Comprehension What Makes Earthquakes

NAME: _____

PERIOD: _____

DIRECTIONS

In this activity you will have to complete ten *Reading Comprehension Questions*. Before answering the questions you should use the *SQAR Reading Comprehension Test-Taking Strategies*. We will begin by revisiting those strategies and then use them on the questions below.

1

The scale that scientists use to rate the strength of earthquakes is called the:

- A. earthquake detector.
- B. Richter scale.
- C. Rumble scale.
- D. Fault scale.

3

Which of the following is **NOT** a type of fault?

- A. transform
- B. convergent
- C. obscure
- D. normal

2

Earthquakes are considered destructive after they reach what level on the scale?

- A. 1
- B. 10
- C. 5
- D. 7.5

4

Earthquakes along "faults." What exactly are "faults"?

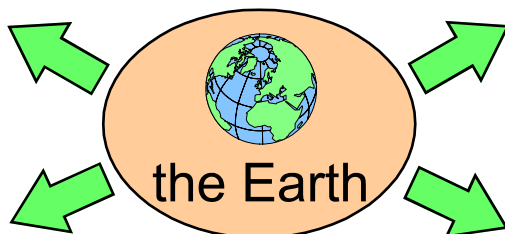
- A. the craters that volcanoes create
- B. the areas where plates meet
- C. any hole in the Earth's crust
- D. where the core meets the mantle

5

To what does the author compare the Earth?

A. a rubber ball

B. a golf ball



C. a segmented rock

D. a giant egg

6

Core is to Hot Iron **AS** Mantle is to:

- A. Rigid Crust
- B. Fragile Crust
- C. Hard Rocks
- D. Molten Rock

8

Which of the following phrases **BEST** expresses the main idea of this article?

- A. Scientists are exploring the San Andreas Fault.
- B. Someone developed the scale for rating earthquakes.
- C. The Earth's crust is always moving and earthquakes occur.
- D. There are many types of rocks and earthquakes.

7

Earthquakes actually occur because the plates floating on the crust:

- A. move smoothly past each other.
- B. grind against each other.
- C. explode upon contact.
- D. form new mountain chains.

9

Based on what you have learned about the scale for measuring the strength of an earthquake, a quake rated a 6 would be 10 times more powerful than one rated as:

- A. 7
- B. 5
- C. 3
- D. 1

10

Complete the sequence:

- ⇒ Two plates slide past each other in a transform fault.
- ⇒ The edges of the plates stick together
- ⇒
- ⇒ The edges break free, causing an earthquake.

- A. The edges heat up and the plates come apart.
- B. One of the plates is driven into the mantle.
- C. Pressure builds up as the plates stick together.
- D. The plates start to melt

