

Chapter 20 Section 1 Guided Reading

1. Where do earthquakes commonly occur?
2. An earthquake is the sudden movement of Earth's crust due to the release of built-up \_\_\_\_\_ energy along a fault.
3. T/F Lithospheric plates slide past each other and stick due to frictional force.
4. When energy builds up in rocks, \_\_\_\_\_ energy converts to \_\_\_\_\_ energy and a motion called stick-slip motion occurs.
  - a) potential, chemical
  - b) potential, nuclear
  - c) potential, kinetic
5. List the three conditions necessary for stick-slip motion to occur.
  - a)
  - b)
  - c)
6. Draw and label Figure 20.3.
7. A good example of a plate boundary with sections that move individually is the \_\_\_\_\_.
8. If a section of a plate boundary only has earthquakes every so often, the force tends to build up and create a (*small, large*) earthquake.
9. An instrument used to record the travel times and strength of seismic waves is called a
  - a) universal testing machine
  - b) transponder
  - c) seismograph

10. Two main types of seismic waves are \_\_\_\_\_ and \_\_\_\_\_ waves.

11. Use "P" or "S" to represent the characteristics of each wave.

First wave to arrive at a seismic station \_\_\_\_\_

A wave that moves side to side \_\_\_\_\_

A wave that moves through solids only \_\_\_\_\_

A wave that has a "push-pull" motion \_\_\_\_\_

A wave that is longitudinal \_\_\_\_\_

A wave that moves through any medium \_\_\_\_\_

12. A seismic wave that causes the most damage because it moves along the surface of Earth is called a \_\_\_\_\_ wave.

a) primary

b) surface

c) secondary

13. Describe the two motions of surface waves.

14. How many stations are necessary to locate the epicenter of an earthquake?

a) 2

b) 5

c) 3

15. What is the difference between the Richter scale and the Modified Mercalli scale

16. Complete the statements below using the Richter Scale.

A \_\_\_\_\_ magnitude earthquake has serious damage over a 100-km area or less

A 2.0 – 2.9 magnitude earthquake is \_\_\_\_\_.

A \_\_\_\_\_ magnitude is considered "light," where no serious damage occurs, but objects shake.

17. What is the Moment magnitude Scale?

18. Complete the statements below using the Modified Mercalli Scale.

A \_\_\_\_\_ earthquake is generally felt by everyone and sleeping people might be awakened.

Some houses collapse and pipes break in a \_\_\_\_\_ earthquake.

Number \_\_\_\_\_ on the scale is when trees sway, chandeliers swing, bells ring, and there is some damage from falling objects.