

CHAPTER

8

DIRECTED READING WORKSHEET

Earthquakes

As you read Chapter 8, which begins on page 194 of your textbook, answer the following questions.

Brace Yourself! (p. 194)

1. Where are you when the earthquake hits?

2. Which of the following statements is NOT true of the Great Hanshin earthquake?

- a. It ruptured natural gas lines and broke water pipes.
- b. It lasted for two minutes.
- c. It left 300,000 people homeless.
- d. It destroyed almost 200,000 buildings.

3. According to the text, what will you study in this chapter?

What Do You Think? (p. 195)

Answer these questions in your ScienceLog now. Then later, you'll have a chance to revise your answers based on what you've learned.

Investigate! (p. 195)

4. What is the purpose of this activity?

Chapter 8, continued

Section 1: What Are Earthquakes? (p. 196)

5. The science of studying earthquakes is called _____.

Where Do Earthquakes Occur? (p. 196)

For questions 6–8, determine whether each statement is true or false. Then explain your answer.

6. Earthquakes happen only along tectonic plate boundaries.

7. Earthquakes only occur when plates push toward each other.

8. Look at Figure 1 at the bottom of page 196. The largest earthquake zone surrounds the Pacific Ocean.

What Causes Earthquakes? (p. 197)

9. If deformation is _____, it changes the shape of rock, but does not cause earthquakes. If deformation is _____, it leads to earthquakes when the stretched rock breaks and releases energy.

10. Elastic rebound occurs when rock suddenly returns to its undeformed shape and causes an earthquake.

True or False? (Circle one.)

Chapter 8, continued

Are All Earthquakes the Same? (p. 198)

Use the chart and the diagram on pages 198 and 199 to answer the following questions.

11. _____ plate movement is associated with the strongest earthquakes. (Convergent or Divergent)
12. When an earthquake is caused by transform plate motion, the earthquake is likely to be moderate and shallow. True or False? (Circle one.)
13. Divergent motion creates _____ faults as blocks of _____ move away from each other. (reverse or normal, crust or mantle)

How Do Earthquakes Travel? (p. 200)

14. A _____ is a seismic wave that travels through the Earth's interior.

For statements 15–20, write a *P* in the space provided if the phrase is a characteristic of a P wave, and write an *S* in the space provided if the phrase is a characteristic of an S wave.

15. _____ This wave is also called a pressure wave.
16. _____ This wave is the slower of the two.
17. _____ This wave travels through solids, liquids, and gases.
18. _____ This wave is the fastest seismic wave.
19. _____ This wave shears rock back and forth.
20. _____ This wave travels only through solids.
21. If you experienced a surface wave, it might feel like you were riding on a roller coaster. True or False? (Circle one.)
22. Why are surface waves the most destructive waves?

Review (p. 201)

Now that you've finished Section 1, review what you learned by answering the Review questions in your ScienceLog.