

Chapter 8 Earthquakes and Earth’s Interior

Section 8.1 What Is an Earthquake?

This section explains what earthquakes and faults are and what causes earthquakes.

Reading Strategy


Building Vocabulary As you read this section, write a definition for each vocabulary term in your own words. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

Vocabulary	Definition
earthquake	a.
fault	b.
focus	c.
epicenter	d.

- Circle the letter of the approximate number of major earthquakes that take place each year.
 - about 50
 - about 75
 - about 3000
 - about 30,000

Earthquakes

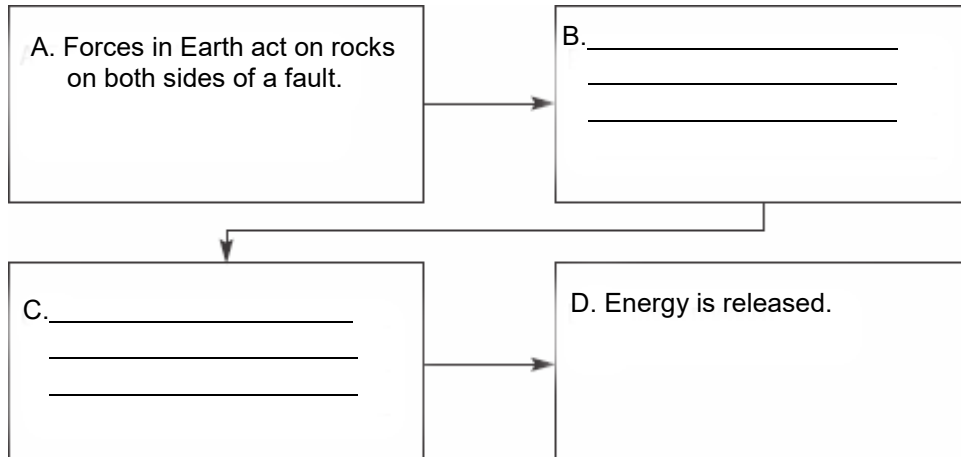
Match each description with its earthquake feature.

	Description	Earthquake Feature
_____	2. Earth vibration caused by rapid energy release	a. epicenter
_____	3. energy that radiates in all directions from the earthquake origin	b. focus
_____	4.  fracture where movement has occurred	c. seismic wave
_____	5. surface location directly above where an earthquake originates	d. fault
_____	6. location within Earth where an earthquake originates	e. earthquake

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The Cause of Earthquakes

7. Is the following sentence true or false? It was not until after the 1906 San Francisco earthquake was studied that the actual cause of earthquakes was understood. _____
8. Complete the flowchart to show the sequence of events that occur when rocks are deformed along a fault.



9. The _____ hypothesis states that when rocks are deformed, they bend and then break, releasing stored energy.
10. 🌀 What causes most earthquakes? _____

11. Is the following sentence true or false? Most earthquakes occur along existing faults. _____
12. Circle the letter of small Earth movements that occur following a major earthquake.
 - a. foreshocks
 - b. slippage
 - c. aftershocks
 - d. foci
13. The _____ is one of the most studied fault systems in the world.
14. What is fault creep? _____

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Section 8.2 Measuring Earthquakes

This section discusses types of seismic waves and how earthquakes are located and measured.

Reading Strategy

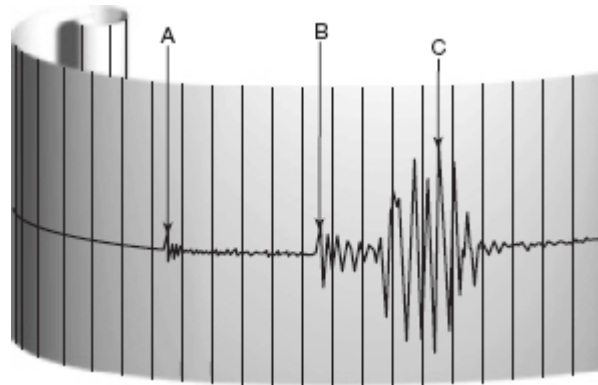
Outlining As you read, fill in the outline with the important ideas in this section. Use the orange headings as the main topics and the blue headings as subtopics.

Measuring Earthquakes	
I. Seismic Waves	
A. Body Waves	
B. _____	
C. _____	
II. _____	
A. _____	
B. _____	
III. _____	
A. _____	
B. _____	
C. _____	
IV. _____	

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Recording Seismic Waves

1. Circle the letter of the type of seismic wave that shakes particles at right angles to their direction of travel.
 - a. P waves
 - b. S waves
 - c. surface waves
 - d. compression waves



2. The figure shows a typical recording of an earthquake. Select the appropriate letter in the figure that identifies each of the following types of seismic waves.
 - _____ surface wave
 - _____ S wave
 - _____ P wave

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3. Circle the letter of the name of the recording of the three types of seismic waves in the figure on page 57.
- a. seismograph
 - b. seismogram
 - c. seismic wave
 - d. travel-time graph

Measuring Earthquakes

4. What two types of measurements do scientists use to describe the size of earthquakes? _____

Match each description with its term related to earthquake measurement.

Description	Term
_____ 5. derived from the amount of displacement that occurs along a fault zone	a. intensity
_____ 6. based on the amplitude of the largest seismic wave recorded on a seismogram	b. magnitude
_____ 7. <input type="checkbox"/> measure of the size of seismic waves or amount of energy released at the earthquake source	c. Richter scale
_____ 8. <input type="checkbox"/> measure of the amount of earthquake shaking at a location based on damage	d. moment magnitude scale
9. <input type="checkbox"/> What measurement do scientists today use for earthquakes? _____	
10. <input type="checkbox"/> Why is the answer to question 9 the most widely used measurement for earthquakes? _____ _____ _____	

Locating an Earthquake

11. Is the following sentence true or false? On a seismogram, the greater the interval is between the arrival of the first P wave and the first S wave, the greater the distance to the earthquake source.

12. Is the following sentence true or false? You can use travel-time graphs from two seismographs to find the exact location of an earthquake epicenter. _____

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Section 8.3 Earthquake Hazards

1. What are the 5 earthquake hazards?

1 _____

2 _____

3 _____

4 _____

5 _____

Causes of Earthquake Damage

2. What does seismic shaking mean?

3. When liquefaction occurs, what happens to the soil?

4. When liquefaction occurs, what happens to buildings? _____

5. When liquefaction occurs, what happens to storage tanks and sewer lines? _____

6. What is a landslide?

7. How is a mudflow different from a landslide?

8. What 3 things can cause a tsunami?

1 _____

2 _____

3 _____

9. How fast can tsunamis move? _____

10. What is the highest a tsunami can get? _____

Reducing Earthquake Damage

11. Where are earthquakes most frequent? _____

12. What do scientists call an area along a fault where no earthquake activity has occurred for a long time? _____

13. Is the following sentence true or false? Methods used to make short-range earthquake predictions have not been successful. _____

14. Is the following sentence true or false? Scientists are able to make accurate long-term earthquake predictions based on their understanding of how earthquakes occur.

15. List 3 ways to make buildings more earthquake resistant.

1 _____

2 _____

3 _____

16. What do they install on gas pipes and water pipes to keep them from breaking?

1 _____

2 _____

17. List 3 things you could do if you found yourself in an earthquake.

1 _____

2 _____

3 _____