

Earthquakes Quiz Answer Key PDF

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What is the recommended safety action during an earthquake?

- A. Run outside
- B. Stand under a doorway
- C. Drop, Cover, and Hold On ✓**
- D. Stay in bed

What is the primary cause of most earthquakes?

- A. Volcanic eruptions
- B. Tectonic plate movements ✓**
- C. Mining activities
- D. Weather changes

How do early warning systems help mitigate the impact of earthquakes?

Early warning systems help mitigate the impact of earthquakes by providing alerts seconds to minutes before shaking occurs, enabling people to take cover and automated systems to respond.

Which type of seismic wave is the fastest?

- A. Surface waves
- B. Secondary waves (S-waves)
- C. Primary waves (P-waves) ✓**
- D. Love waves

Explain how tectonic plate movements cause earthquakes.

The movement of tectonic plates causes earthquakes by accumulating stress along faults until it is released suddenly, resulting in seismic activity.

Which technological tools are used in modern seismology? (Select all that apply)

- A. Seismometers ✓
- B. Accelerometers ✓
- C. Barometers
- D. Early warning systems ✓

Describe the differences between P-waves and S-waves in terms of their properties and movement.

P-waves (primary waves) are longitudinal waves that compress and expand the material they move through, allowing them to travel through solids, liquids, and gases. In contrast, S-waves (secondary waves) are transverse waves that move the ground perpendicular to their direction of travel, and they can only propagate through solids.

Which scales are used to measure the intensity and magnitude of earthquakes? (Select all that apply)

- A. Richter scale ✓
- B. Mercalli scale ✓
- C. Beaufort scale
- D. Moment magnitude scale (M_w) ✓

What type of wave causes the most damage during an earthquake?

- A. P-waves
- B. S-waves
- C. Surface waves ✓
- D. Rayleigh waves

Which of the following are effects of earthquakes? (Select all that apply)

- A. Ground rupture ✓
- B. Tsunami ✓
- C. Soil liquefaction ✓

D. Increased rainfall

Which instrument is used to detect and measure earthquakes?

- A. Thermometer
- B. Barometer
- C. Seismometer ✓**
- D. Anemometer

Discuss the impact of the 2011 Tohoku earthquake on Japan's infrastructure and disaster preparedness.

The impact of the 2011 Tohoku earthquake on Japan's infrastructure was profound, resulting in extensive damage to roads, bridges, and utilities, which prompted the government to invest heavily in disaster preparedness measures, including stricter building regulations and the establishment of more robust emergency response protocols.

What are some methods to prepare for an earthquake? (Select all that apply)

- A. Securing heavy items ✓**
- B. Creating emergency plans ✓**
- C. Building underground shelters
- D. Having emergency kits ✓**

What are some common features of earthquake-prone zones? (Select all that apply)

- A. Located along tectonic plate boundaries ✓**
- B. High volcanic activity ✓**
- C. High altitude
- D. Presence of fault lines ✓**

Which of the following are types of seismic waves? (Select all that apply)

- A. P-waves ✓**
- B. S-waves ✓**
- C. X-waves

D. Surface waves ✓

On which scale is the magnitude of an earthquake commonly measured?

- A. Beaufort scale
- B. Richter scale ✓**
- C. Fujita scale
- D. Kelvin scale

In what ways can urban planning and building codes reduce the damage caused by earthquakes?

Urban planning can reduce earthquake damage by implementing strict building codes that require structures to be designed for seismic resilience, using materials that can absorb shock, and zoning laws that prevent construction in high-risk areas.

Which region is known as the most earthquake-prone area in the world?

- A. The Sahara Desert
- B. The Pacific Ring of Fire ✓**
- C. The Amazon Rainforest
- D. The Arctic Circle

Which historical earthquake occurred in 1906?

- A. The San Francisco earthquake ✓**
- B. The Haiti earthquake
- C. The Tohoku earthquake
- D. The Lisbon earthquake

What are the key differences between the Richter scale and the moment magnitude scale (M_w)?

The key differences between the Richter scale and the moment magnitude scale (M_w) are that the Richter scale is based on the amplitude of seismic waves recorded by seismographs, while the moment magnitude scale accounts for the seismic moment, which includes the area of the fault that slipped, the amount of slip, and the rigidity of the rocks involved, making M_w more reliable for measuring larger earthquakes.