Name: _____ **Date:** _____

Answer Key: Plate and Peak Rumble for 8th Grade

Examine Earth's mechanics through 10 targeted questions on crustal shifts and seismic activity. Not just definitions—real-world geological patterns and evidence.

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1. Which layer of the Earth, known for its plastic-like flow, allows the lithospheric plates to move across the planet's surface?

Answer: B) Asthenosphere

The asthenosphere is the semi-fluid layer of the mantle directly below the lithosphere that permits plate motion through convection.

2. The _____ is a massive underwater mountain range formed by a divergent boundary where the seafloor is actively spreading.

Answer: C) Gakkel Ridge

The Gakkel Ridge is a divergent boundary in the Arctic Ocean where tectonic plates pull apart and volcanic activity creates new crust.

3. True or False: Most earthquakes occur in the middle of tectonic plates rather than at the boundaries.

Answer: B) False

The vast majority of seismic activity occurs at plate boundaries where stress builds up as plates interact; intraplate earthquakes are much rarer.

4. When an oceanic plate collides with a continental plate, it sinks into the mantle because it is more dense. What is this process called?

Answer: B) Subduction

Subduction occurs at convergent boundaries where a denser plate (usually oceanic) slides beneath a less dense plate.

5. The _____ of an earthquake is the specific point on the Earth's surface directly above where the first rupture in the crust occurs.

Answer: C) Epicenter

Name: _____ **Date:** _____

The epicenter is the surface location of an earthquake, while the focus (or hypocenter) is the actual location underground where the energy is released.

6. True or False: Composite volcanoes (stratovolcanoes) are typically known for explosive eruptions due to the high gas content and thick magma.

Answer: A) True

Stratovolcanoes, like Mount Pinatubo or Mt. St. Helens, have viscous magma that traps gases, leading to highly explosive and dangerous eruptions.

7. Which of these is the most likely result of two continental plates colliding at a convergent boundary?

Answer: C) Folding and mountain building

When two continental plates collide, neither is dense enough to subduct easily, so the crust thickens and folds upward to form non-volcanic mountain ranges.

8. During an earthquake, _____ waves are the first to arrive at a seismic station because they travel the fastest through the Earth.

Answer: B) Primary (P)

P-waves are longitudinal waves that travel faster than any other seismic waves, arriving first at recording instruments.

9. Shield volcanoes, like those found in the Galapagos Islands, are primarily formed by which type of lava?

Answer: A) Thin, runny basaltic lava

Shield volcanoes have broad, gentle slopes because they are built from many layers of low-viscosity (runny) lava that spreads out over long distances.

10. True or False: The theory of Plate Tectonics was widely accepted by scientists immediately after Alfred Wegener proposed Continental Drift in 1912.

Answer: B) False

Wegener's ideas were initially rejected because he could not explain the mechanism of how the continents moved; it wasn't until seafloor spreading was discovered decades later that the theory gained support.