Name: _____ **Date:** _____

Dare to Map the Deeps? Plate Tectonics Challenge for 11th Grade

Students identify crustal movement patterns and seismic mechanics to reinforce their understanding of Earth's dynamic structural evolution.

---

1. Which specific layer of the Earth acts as a lubricant, allowing the rigid lithospheric plates to slide above it?

A. The inner core
B. The asthenosphere
C. The crustal basement
D. The mesosphere

2. True or False: The Wadati-Benioff zone is a planar zone of seismicity corresponding to the down-going slab in a subduction zone.

A. True
B. False

3. The _____ magnitude scale is often preferred by seismologists over the Richter scale for ranking large earthquakes because it measures total energy released.

A. Mercalli Intensity
B. Fujita
C. Moment
D. Beaufort

4. Which of the following volcanic features is formed by highly viscous, silica-rich lava that plugs the vent, leading to explosive pressure buildup?

A. Shield volcano
B. Fissure vent
C. Lava dome
D. Basaltic plateau

5. True or False: S-waves (secondary waves) can travel through both solid rock and liquid magma.

A. True
B. False

6. A _____ boundary is a type of plate interaction where crust is neither created nor destroyed, but plates move horizontally past one another.

A. Transform
B. Convergent
C. Divergent
D. Subduction

Name: _____ **Date:** _____

7. What is the primary driving force behind the movement of tectonic plates?

A. Lunar tidal forces
B. Earth's magnetic reversal
C. Mantle convection currents
D. Centrifugal force from rotation

8. True or False: The 'Ring of Fire' is a direct result of divergent plate boundaries surrounding the Pacific Ocean.

A. True
B. False

9. The process of _____ occurs at mid-ocean ridges, where rising magma cools to form new oceanic lithosphere.

A. Orogeny
B. Seafloor spreading
C. Liquefaction
D. Subduction

10. Which of these is a secondary effect of an earthquake that involves saturated soil behave like a liquid?

A. Pyroclastic flow
B. S-wave amplification
C. Liquefaction
D. Tsunami generation