

Name: _____ Date: _____

Tectonic Chaos: Crack the Earth's Crust for 5th Grade

Examine the mechanics of deep-sea trenches and seismic waves to determine how the lithosphere transforms our planet's landscape through physical modeling.

1. Imagine you are an oceanographer discovering a deep-sea trench next to a chain of coastal volcanoes. Which tectonic process is the most likely cause of this formation?

- A. Seafloor spreading at a divergent boundary
- B. Two plates sliding past each other at a transform fault
- C. Subduction where an oceanic plate sinks beneath a continental plate
- D. A hot spot forming a volcanic island chain in the middle of a plate

2. To measure the severity of an earthquake, scientists use the _____ to calculate the total energy released based on the size of the fault rupture.

- A. Modified Mercalli Scale
- B. Moment Magnitude Scale
- C. Fujita Scale
- D. Barometric Pressure Scale

3. A shield volcano, like those found in Iceland, is typically formed by explosive eruptions of thick, sticky magma that builds steep slopes quickly.

- A. True
- B. False

4. If you observe a fence that has been offset so that one side is now five feet further north than the other side after an earthquake, which boundary type are you looking at?

- A. Divergent boundary
- B. Convergent boundary
- C. Transform boundary
- D. Subduction zone

5. The precise point inside the Earth's crust where an earthquake begins is called the _____.

- A. Epicenter
- B. Vent
- C. Focus
- D. Magma Chamber

6. Primary waves (P-waves) are the first seismic waves to reach a seismograph because they travel through both solid rock and liquid layers.

- A. True
- B. False

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7. Why does oceanic crust usually subduct under continental crust during a collision?

- A. Oceanic crust is much thicker
- B. Oceanic crust is denser because it is made of basalt
- C. Continental crust is underwater
- D. The ocean's weight pushes the plate down

8. A fast-moving, deadly cloud of hot ash, gas, and rock fragments that rushes down the side of a volcano is known as a _____.

- A. Lava flow
- B. Lahar
- C. Pyroclastic flow
- D. Fissure

9. New crust is constantly being created at the center of the Atlantic Ocean where two plates are pulling apart.

- A. True
- B. False

10. If you were building a bridge in an earthquake-prone zone, which soil type would be the most dangerous to build on due to 'liquefaction'?

- A. Solid granite bedrock
- B. Loose, water-saturated sand
- C. Compacted dry clay
- D. Volcanic basalt