

Name: _____ Date: _____

Could the Continents Connect? 6th Grade Tectonics Quiz

Beyond simple map-matching — students synthesize evidence of lithospheric recycling and the mechanics behind Earth's shifting crustal mosaics.

1. Scientists find identical fossils of the Mesosaurus in both Brazil and South Africa. Which advanced geological concept best explains how these terrestrial organisms are now separated by 3,000 miles of ocean?

- A. Oceanic bridge formation
- B. Plate kinematics and continental drift
- C. Parallel evolution in isolated biomes
- D. Massive global sea-level retreats

2. The ____ process occurs at convergent boundaries where a denser oceanic plate sinks beneath a lighter continental plate, often recycling crust into the mantle.

- A. Conduction
- B. Rifting
- C. Subduction
- D. Accretion

3. True or False: Paleomagnetism provides evidence for seafloor spreading because the iron-rich minerals in basalt align with Earth's shifting magnetic poles as magma cools.

- A. True
- B. False

4. While most volcanoes form at plate boundaries, the Hawaiian Island chain was created by a 'Hot Spot.' What does this suggest about the relationship between the lithosphere and the mantle?

- A. The mantle plume moves while the plate remains stationary.
- B. The lithospheric plate moves over a stationary mantle plume.
- C. Hot spots only occur where plates are thinnest.
- D. Magma is generated by friction between two plates.

5. The ____ is the exact point inside the Earth's crust where an earthquake originates, while the point directly above it on the surface is the epicenter.

- A. Trigger
- B. Mantle
- C. Focus
- D. Basalt

6. True or False: Tectonic plates move at approximately the same rate as human fingernails grow, roughly 2 to 10 centimeters per year.

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- A. True
- B. False

7. Which type of seismic wave is considered a 'longitudinal' wave that travels fastest and can move through both solid and liquid layers of the Earth's interior?

- A. S-waves (Secondary)
- B. Love waves
- C. P-waves (Primary)
- D. Rayleigh waves

8. Volcanoes like Mt. St. Helens are often explosive because their magma has high _____, meaning it is thick, sticky, and traps gas easily.

- A. Density
- B. Viscosity
- C. Salinity
- D. Conductivity

9. If you are exploring a transform boundary, such as the North Anatolian Fault in Turkey, what geological feature are you most likely to encounter?

- A. Deep-sea trenches
- B. New crust formation
- C. Frequent earthquakes without volcanic activity
- D. Chain of stratovolcanoes

10. True or False: The 'Ring of Fire' is a direct result of divergent plate boundaries circling the Atlantic Ocean.

- A. True
- B. False