

Name _____

Speedy Plates: How Fast Do Tectonic Plates Move?

Open-Ended Response Answer Key

1. To measure the speed of a specific plate, a geologist might use GPS (Global Positioning System) to track the movement of surface features over time. They could also analyze the age of rocks on either side of the boundary to estimate the rate of plate movement.
2. Plate movement shapes the Earth's surface by creating mountains, ocean basins, and earthquake-prone regions. Understanding plate speed is crucial for predicting geological events and their impacts.
3. Rapid plate movement, as in the Pacific Plate, can result in more frequent earthquakes and volcanic eruptions. These events can pose dangers to nearby populations and may influence the landscape over time.
4. At divergent boundaries, plates move apart, causing seafloor spreading and creating new oceanic crust. At convergent boundaries, plates collide, resulting in slower or opposing movement, leading to the formation of mountain ranges and other geological features. Both types of boundaries play crucial roles in shaping the Earth's surface.

