

Name \_\_\_\_\_

## Continental Jigsaw: The Story of Plate Tectonics

### Open-Ended Response Answer Key

1. A discovery of a rock typically found in a different part of the world would suggest that the landmass where the rock was found was once connected to the region where the rock is commonly found. This discovery supports the theory of plate tectonics by indicating that the two landmasses were once part of the same larger continent that later drifted apart.
2. The formation of the Hawaiian Islands can be explained by the theory of plate tectonics. It is the result of a hotspot, a stationary area of intense volcanic activity, located beneath the Pacific Plate. As the Pacific Plate moves over the hotspot, it creates a series of volcanic islands. Over time, the islands move away from the hotspot due to plate movement, leading to the formation of a chain of islands.
3. Plate tectonics have positive impacts such as creating fertile soils for agriculture, forming natural resources like minerals and oil, and shaping diverse landscapes. However, they also cause natural disasters like earthquakes, volcanic eruptions, and tsunamis that can have devastating consequences for human populations. Balancing these positive and negative aspects is a challenge for communities in tectonically active regions.
4. The study of plate tectonics can help us anticipate and prepare for future geological changes, including the movement of continents, the formation of new landmasses, and potential natural disasters. Understanding plate tectonics enables us to make informed decisions about land use, infrastructure development, and disaster preparedness, ultimately contributing to the safety and well-being of communities worldwide.

