

Which part(s) of Scrat's adventure is accurate? Continents were once joined together, but moved apart.

Which part(s) of Scrat's adventure is not accurate? Continents did not break up and move quickly.

In 1912, a man named Alfred Wegener proposed that at one time the continents were joined together, but over time have moved slowly to their current locations.

His hypothesis is called Continental Drift.
Wegener called the once connected large landmass Pangaea.

Other than the "puzzle-like" fit of the separated continents, what evidence was used to support the theory of continental drift?

Rock, fossil, and climate clues were the main types of evidence for continental drift. Advances in technology have provided additional clues to help explain continental drift.

Scientists mapped the mid-ocean ridges using sonar which bounces sound waves off underwater objects and records the echoes of these sound waves.

Description of Sea Floor Spreading

Hot, less dense material below the Earth's crust rises toward the surface at the mid-ocean ridges.

The seafloor spreads apart and magma is forced upward pushing the older seafloor away from the ridge in opposite directions.

The magma becomes solid as it cools and sinks forming new sea floor.

The idea of sea floor spreading showed that more than just the continents were moving, as continental drift had shown.

Scientists now believe that sections of the seafloor and continents move in relation to one another.

A new theory that combined continental drift and seafloor spreading was developed known as the theory of Plate Tectonics.

The theory of Plate Tectonics states that the Earth's crust and part of the Upper Mantle are broken into plates (sections) that move.

Continents Adrift: An Introduction to Continental Drift and Plate Tectonics Discussion Questions

Directions: Answer the following questions in complete sentences as you watch the video. You may want to jot down notes from the video and then answer the questions in complete sentences.

1. What evidence did Alfred Wegener offer to support his theory of continental drift?
• puzzle-like pieces • fossils of identical animals on different continents • tropical plant fossils in Antarctica (climate)

2. What evidence did exploration of the ocean floor reveal to further support Wegener's theory?
• mid-ocean ridge - crack in crust creates new land.

3. How does the movement of tectonic plates occur?
• convection currents in the mantle

Boundaries: 4. What are the three types of tectonic plate movement? What changes in the surface of the earth might each of these cause?
• Divergent - new sea floor
• Convergent - sea floor destroyed
• Transform - earthquakes

5. Discuss the differences between the volcanoes that formed the Hawaiian Islands and those bordering the Pacific plate in the Ring of Fire.