

Continental Drift and Sea-Floor Spreading

What evidence have geologists collected to support the ideas that continents are drifting and sea-floor spreading occurs? Complete this activity to find out. Locate information using your book, the internet, or any other available resources. Write a short summary of the details about the evidence being used to support these ideas.

Evidence	Evidence Summary
Land Features p. 20	<ul style="list-style-type: none"> • maps of African + S. American mountains line up • coal fields in Europe line up with fields in N. Amer. • continents fit together like puzzle pieces.
Fossils p. 20	<ul style="list-style-type: none"> • trace fossils, <i>Glossopteris</i>, found in Africa, S. Amer., Australia, India + Antarctica • fossils of reptiles found in places separated by oceans - reptiles can't swim across oceans.
Climate p. 21	<ul style="list-style-type: none"> • fossils of tropical plants found on island in Arctic Ocean • deep scratches in rocks show that glaciers once covered S. Africa.
Molten Material p. 26	<ul style="list-style-type: none"> • pillow rock - forms when lava hardens quickly under water • ^{1960s} Alvin submarine found strange shaped rocks - like pillows or like toothpaste squeezed from tube.
Magnetic Stripes p. 26	<ul style="list-style-type: none"> • magnetic patterns indicate that the magnetic poles of Earth have reversed several times - sensitive instruments were able to record (same pattern) Earth's "magnetic memory" on both sides of the ridge
Drilling Samples p. 27	<ul style="list-style-type: none"> • ¹⁹⁶⁸ <i>Glomar Challenger</i> - drilled rock samples from ocean floor • younger rocks closer to the mid-ocean ridge • rocks get older the farther you get away from ridge.
Subduction p. 28-29	<ul style="list-style-type: none"> • Sea floor spreading + subduction work together like a giant conveyor belt. • Atlantic Ocean - expanding - few trenches - continents attached also move - ocean gets wider • Pacific Ocean - shrinking - ocean floor is sinking back into mantle at trenches. • Deep Ocean Trenches - deep underwater trenches or canyons where ocean floor sinks back into the mantle.