







Evidence from fossilized organisms and mountain chains can be used to reconstruct the positions of today's continents and landmasses to form the supercontinent Pangea.

| | WEGNER'S EVIDENCE FOR CONTINENTAL DRIFT |
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|  | Glossopteris ferns had very heavy seeds that could not move by wind or drift on ocean currents. Fossils have been found on all the southern continents – Australia, Antarctica, India, South Africa and South America. |
|  | The Mesosaurus was a reptile that lived in fresh or brackish water and had limbs for swimming but was not a strong swimmer. It would not likely have had the capability to swim across such a large body of water as the Atlantic Ocean. |
|  | Cynognathus was a mammal-like reptile that lived on land during the Early Triassic. It was as large as a modern wolf. Its fossils are found only in South Africa and South America. As a land-dominant species, it would not have been capable of migrating across the Atlantic. |
|  | Lystrosaurus was another mammal-like reptile that lived on land. It survived the Permian Period and was dominant during the early Triassic. Its anatomy suggests that these animals were probably very poor swimmers. |
|  | By about 300 million years ago, a unique community of plants had evolved known as the European flora. Fossils of these plants are found in Europe and other areas. |
|  | Scientists study rocks from mountain chains, and the fossils found in them, to understand continental drift. The mountainous terrains of separate continents match up. |







<https://www.chisd.net/cms/lib5/TX01917715/Centricity/Domain/1119/Wegener.pdf>

<https://www.floridamuseum.ufl.edu/wp-content/uploads/sites/16/2020/05/Florida-Museum-Pangea-Activity.pdf>

Click and drag, and rotate, the continents to reposition and reorient them.

Use fossil and rock evidence to reconstruct how the Earth may have looked approximately 290 million years ago when the continents were connected to form a supercontinent called Pangea.

Fossil Evidence Key

-  The European Flora
-  Cynognathus reptile
-  Lystrosaurus reptile
-  Glossopteris plant
-  Mesosaurus reptile
-  Alpine Mountains

Modified from the U.S. Department of the Interior
and the U.S. Geological Survey



| Is it Evidence (Yes/No) | Identify whether the statements below are evidence of plate tectonics and/ or evidence of continental drift theory. | Supports continental drift: (Yes/No) |
|-------------------------|---|--------------------------------------|
| | 1858: Geologist Eduard Seuss points out that fossils of the Glossopteris plant are found in southern Africa, South America, Australia, Antarctica, and India. | |
| | Wegener examines the location of tiny rocks and the direction of grooves formed by large glaciers scraping across southern areas of Africa, South America, Australia, Antarctica, and India. He concludes that if all these places were fitted together, they would form a continuous ice sheet expanding outward in all directions. | |
| | Frankfurt News, January 6, 1912: Announcement that German scientist Alfred Wegener will speak at the Geological Association meeting. | |
| | Popular Geology magazine, March 12, 1912: "Continents are so large they must always have been where they are." | |
| | Wegener observes that a South American mountain range in Argentina lines up with an ancient African mountain range in South Africa when the two continents are placed together. He writes: "It is just as if we were to refit the torn pieces of a newspaper by matching their edges and then check whether the lines of print ran smoothly across. If they do, there is nothing left but to conclude that the pieces were in fact joined in this way." | |
| | 1927: Geologist Alexander du Toit observes rock layers on the western coast of Africa in the following sequence: basalt rock, shale containing fossil reptiles, coal layers containing Glossopteris fossils, rocks containing Mesosaurus fossils, and shale. He discovers an almost identical sequence of rock layers on the eastern coast of South America. | |
| | 1944: Geologist Baily Willis calls Wegener's theory a fairy tale. He argues that the theory should be ignored. | |
| | 1965: Geologist Edward Bullard uses computers to match coasts of South America and Africa. They match extremely well at an ocean depth of 1,000 meters (3,280 ft). | |
| | 1980s: Satellites and lasers are used to measure the movement of continents. They continue to move at an average of about 2 cm (0.8 in) per year | |
| | Fossils of Megascolecina earthworms are found in South America, Africa, India, and Australia, as well as the islands of Madagascar and New Guinea. | |