

## Excerpt from “Earth’s Changing Surface”

Read the excerpt and complete the chart that follows.



Discoveries of rock layers, as well as coal and salt, indicated that the continents had once been joined.

### Search for Clues

So what about the jigsaw-puzzle fit of the continents? During the 1800s and early 1900s, **geologists** studied rock layers on the continents. They made many intriguing discoveries. For example, rock layers along the northern and eastern coasts of South America match rock layers along Africa’s western coast. Also, deposits of **coal** and salt in eastern North America are similar to those in southern Europe.

Geologists found fossils of an ancient fern called *Glossopteris* in similar rock layers in Africa, India, Australia, and South America. They found fossils of an ancient reptile, *Lystrosaurus*, in both southern Africa and India. In South America and Africa, fossils of another ancient reptile, *Cynognathus*, turned up directly across the Atlantic Ocean from each other.

These discoveries seemed to indicate that the continents had once been joined—but how? Furthermore, how had they become separated? Several scientists proposed explanations, but they were quite far-fetched. One involved a gigantic eruption from the center of the earth that ripped all the land apart. Another suggested that part of Earth’s land broke away to become the moon and what was left became the

continents. Few people paid much attention to these ideas. A better explanation was needed, one with evidence to support it. In the early 1900s, Alfred Wegener provided just that.

### Enter Alfred Wegener

Born and educated in Germany, Alfred Wegener was interested in many scientific subjects, including weather, astronomy, and cold, polar regions. Around 1910, Wegener read a scientific paper about similar fossils and rock formations found on different continents. He was intrigued by the mystery of the matching continents and he wanted to solve this mystery.



Alfred Wegener

Wegener gathered evidence. He pulled together discoveries made by many other scientists about rock formations, fossils, and mountain ranges. Polar explorers had recently unearthed fossils of *Glossopteris* in Antarctica. Similar fossils had previously been found in other parts of the world. This seemed to indicate that ice-covered Antarctica might once have been joined to South America, Africa, India, and Australia. It also meant that Antarctica had once had a **climate** warm enough for ferns to grow.

From this evidence, Wegener **concluded** that all the present-day continents had been joined as one huge landmass long ago. He understood, as with any new discovery, that his conclusions might be altered or challenged in the future by more evidence. Nonetheless, he believed that the existing evidence supported his conclusions.

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

*The following chart contains a statement about Alfred Wegener’s continental drift hypothesis. Using information from the excerpt, type five pieces of evidence that support Wegener’s hypothesis.*

<b>Hypothesis</b>	Long ago, continents were joined as one supercontinent that broke apart and the pieces slowly drifted away from each other.
<b>Evidence</b>	1.
	2.
	3.
	4.
	5.