Name: _____ Date: _____

# Continental Drift
## Science Literacy Article

Alfred Wegener (1880–1930) was a German scientist and meteorologist who was best known for proposing the **Theory of Continental Drift**. This theory states that Earth's continents are slowly moving or "drifting" to new locations over time. Wegener believed all of Earth's continents used to be joined together about 300 million years ago. He referred to this one, giant landmass as **Pangaea**. He used different forms of evidence to help support his theory.

- **Landforms** - Wegener observed that many of the continents, especially Africa and South America, looked as though they could fit together like puzzle pieces. If Africa and South America are placed together, the mountain ranges and rock formations on both continents *match up almost perfectly*. Another example of evidence from landforms includes the coal fields in North America and Europe that also *match up* when these two continents are placed together.
- **Fossils** - Fossils of Glossopteris, a fern-like plant, have been found on several *different continents that are separated* by large distances. Also, fossils of Mesosaurus and Lystrosaurus, both freshwater animals, have been *found on continents separated by saltwater oceans*. Wegener hypothesized that these plant and animal fossils must have been separated as the continents slowly drifted apart.
- **Climate** - *Glacial scratches have been found in Africa* which suggests it used to be located closer to the south pole and had a much colder climate. Also, *tropical plant fossils have been found in extremely cold locations* such as Antarctica. This suggests the continents that contain these tropical plant fossils used to be located in regions closer to the equator with warmer climates.

Even with all of this evidence, most scientists during Wegener's time rejected his theory. He knew the continents were moving, but he was unable to explain the driving force that actually caused the movement. Scientists now believe that **convection currents** within the Earth's mantle are slowly causing the plates above to move. These convection currents are caused by the continuous heating and cooling of magma within the mantle. These moving currents of magma act as giant "wheels" and drive the movement of the plates that sit on top. Scientists estimate that most of Earth's plates move at a rate of 2.5 centimeters per year. Just think how different the continents will look millions of years from now!

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