

Restless Continents

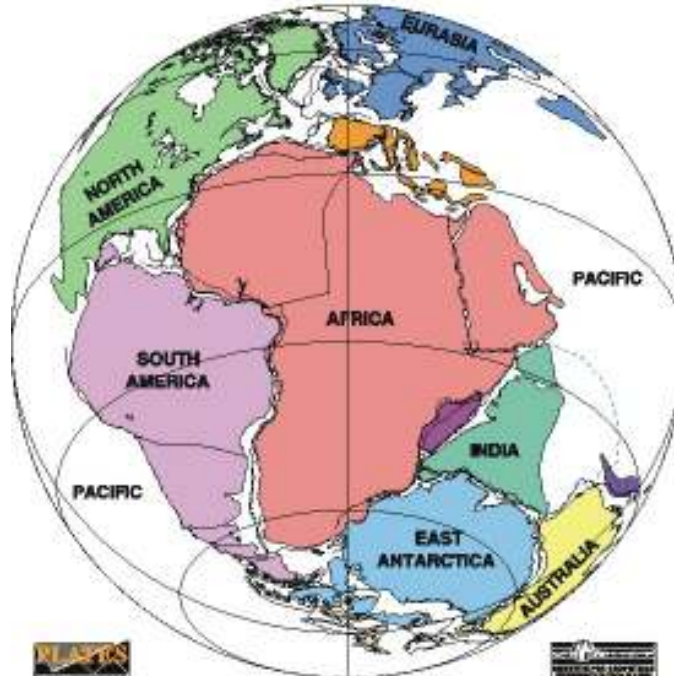
- In the early 1900s, German scientist _____ proposed that the continents have been slowly moving apart from each other. This idea is known as _____.

Continental Drift – The theory that continents can drift apart from one another and have done so in the past.

- Wegener's idea offered an explanation to several things that had puzzled people:
- ✓ How the continents (esp. Africa & S. America) seem to _____ together
 - ✓ How _____ of the same plant and animal species (i.e. *Mesosaurus* and *Glossopteris*) are found on both sides of the Atlantic Ocean
 - ✓ Similar _____ found on both sides of the Atlantic Ocean
 - ✓ _____ grooves on different continents match up
 - ✓ Fossils of tropical organisms found in Antarctica

- **Wegener proposed that all of the continents were joined _____ million years ago in a single landmass called _____, meaning “_____”.**

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- **Wegener’s ideas were not initially accepted, mainly because he did not know what _____ of nature could be the mechanism to move whole continents.**

Sea Floor Spreading:

- **Scientists have discovered a world-wide chain of undersea mountains known as _____.**

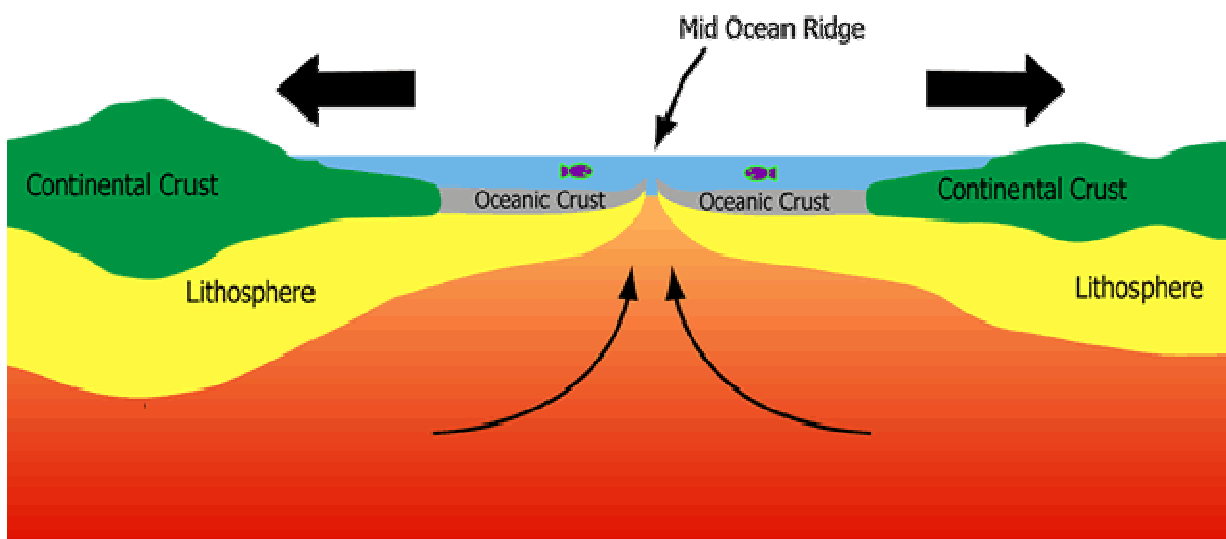
➤ **Mid-ocean ridges are places where _____ takes place.**

Sea-floor spreading – The process by which new oceanic lithosphere is created as older materials are pulled away.

➤ **As two _____ pull away from each other, the sea floor spreads apart and magma rises to fill the gap. Preexisting rock moves slowly away from the ridge in either direction.**

➤ **Evidence for sea-floor spreading exists in the fact that the _____ of rocks increase on either side of a mid-ocean ridge as you move _____ from it.**

Sea Floor Spreading



Magnetic Reversals:

- **Other evidence of sea-floor spreading comes from _____ recorded in the ocean floor.**
- **Throughout the history of the Earth, the north and south magnetic poles have flipped many times (every 200,000 years on average, though it varies).**
- **When the Earth's magnetic _____ change place, it is called a *magnetic reversal*.**
- **Magma that comes up at the mid-ocean ridges contains tiny grains of _____ minerals. While the magma is still liquid, these minerals line themselves up with the Earth's magnetic pole like a compass.**
- **When the magma cools to solid rock, the magnetic minerals are “frozen” in place.**
- **The rock is slowly carried away from the ridge as sea-floor spreading occurs.**
- **When a magnetic reversal occurs, the magnetic mineral grains line up in the _____ direction.**
- **Because of this, the ocean floor on either side of the mid-ocean ridges show**

“bands” of rock with mineral grains pointing in _____ directions.

