Inside Earth: Plate Tectonics

Drifting Continents

Questions to Answer…

- What is continental drift?
- Why was Alfred Wegener's theory rejected?

The Theory of Continental Drift

Pangaea

- The name of the single landmass that broke apart 200 million years ago and gave the rise to today's continents

Continental Drift

- A hypothesis that the continents slowly move across Earth's surface

What is Wegener's theory of continental drift?

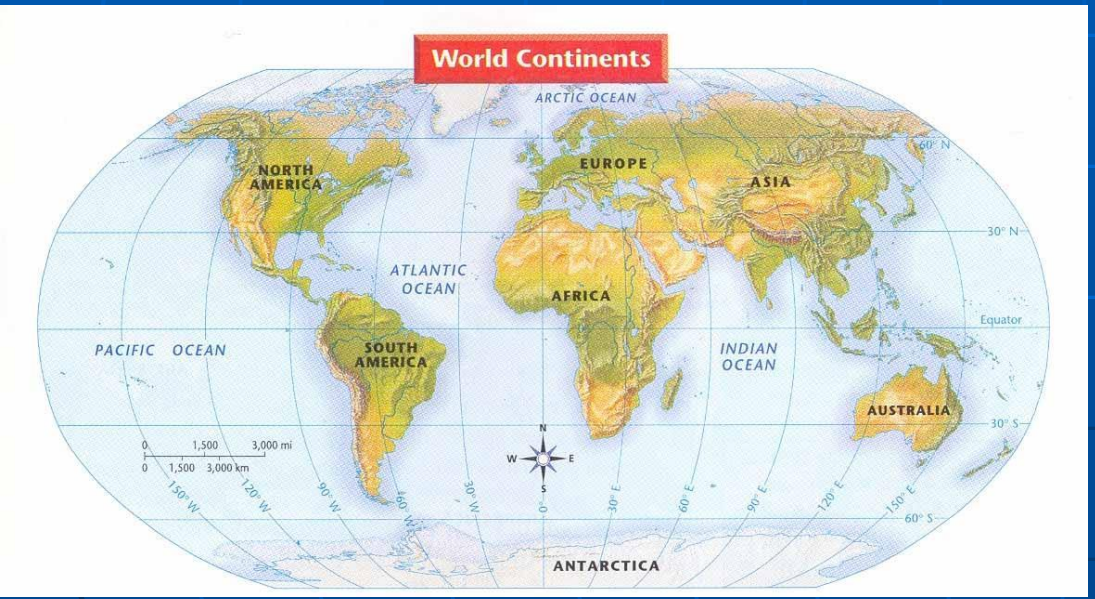
- Continental drift is the hypothesis that all the continents had once been joined together in a single landmass
- The continents have slowly moved apart over Earth's surface

Evidence From Landforms

Evidence From Landforms

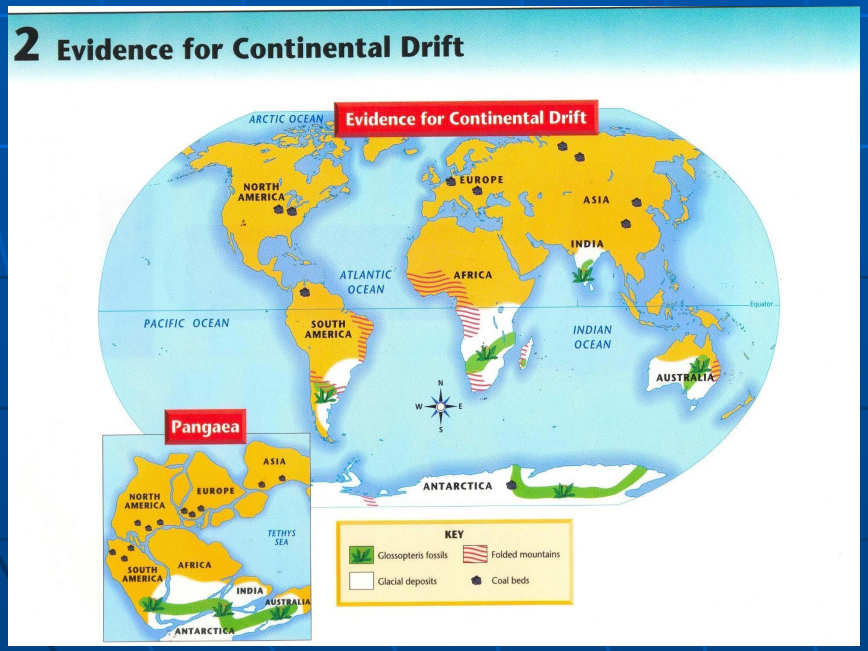
- A mountain range in South Africa lines up identical with mountain ranges in Argentina (South America)
- Brazilian coal fields match up identical with coal fields in South Africa

Figure 11: Observing: Which coastlines seem to match up like jig-saw puzzle?



- The continents of Africa and South America best match up like jigsaw-puzzle pieces

Figure 12: Inferring: According to Wegener's theory, what does the presence of similar mountain ranges in Africa and South America indicate?



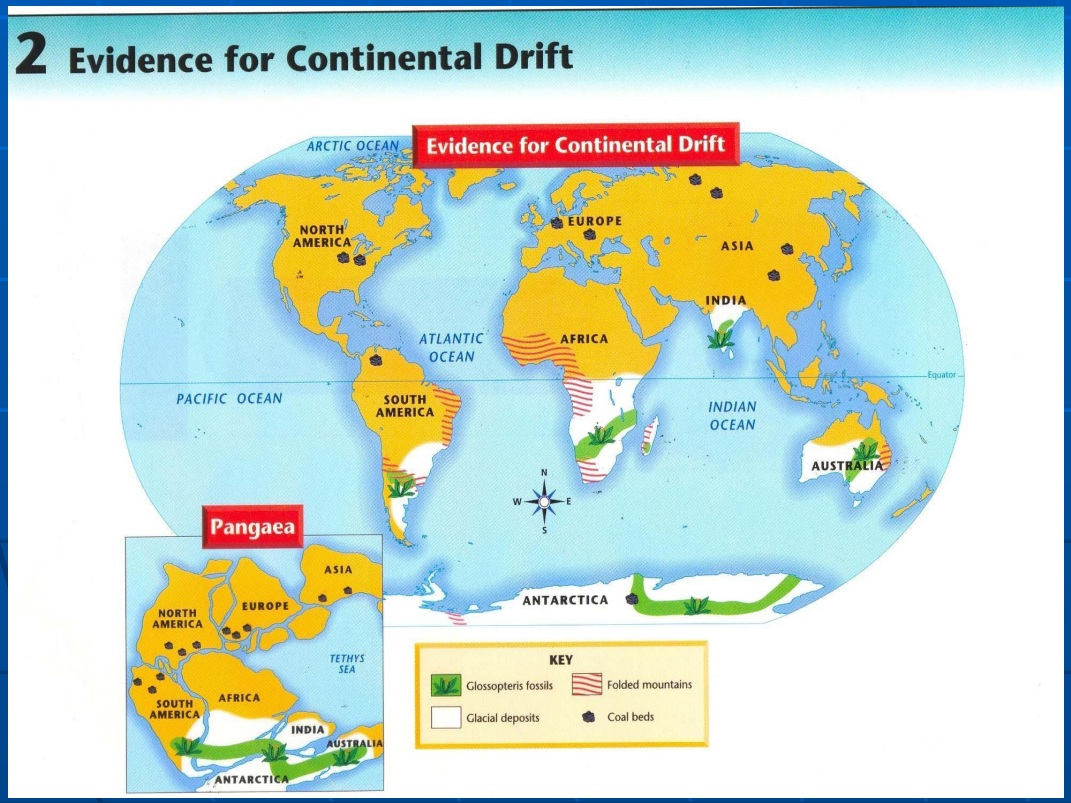
- The presence of similar mountain ranges indicates that Africa and South America were once joined.

Evidence From Fossils

Fossil

- Fossil: A trace of an organism that has been preserved in rock

How did Wegener use evidence based on fossils to support his theory that the continents had moved?



- Glossopteris (fern leaves) fossils have been found in rocks in Africa, South America, Australia, India, and Antarctica unexpectedly
- Seeds could not have travel that far over the oceans to reach other continents

Evidence From Climate

What two examples of climate change did Wegener use to support his theory of continental drift?

- The Island of Spitsbergen (Arctic Ocean) has evidence of tropical plants
- Deep scratches in rocks were found in South Africa
  - These scratches support evidence of glaciers

Checkpoint: What were the three types of evidence Wegner used to support his theory of continental drift?

- Landforms
- Fossils
- Climate

Scientists Reject Wegener's Theory

Why was Alfred Wegener's theory rejected?

- Wegener could not provide a satisfactory explanation for the force that pushes or pulls the continents
  - He could not identify the cause of continental drift
  - Geologists needed more evidence of how the continents and mountains were formed