

Objectives

- **Describe** Wegener's hypothesis of continental drift.
- **Explain** how sea-floor spreading provides a way for continents to move.
- **Describe** how new oceanic lithosphere forms at mid-ocean ridges.
- **Explain** how magnetic reversals provide evidence for sea-floor spreading.

I. Wegener's Continental Drift Hypothesis

A. What Is Continental Drift? Continental drift is the hypothesis that states that the continents once formed a single landmass, broke up, and drifted to their present locations.

II. The Breakup of Pangaea

A. Pangaea Pangaea, a single huge continent, existed about 245 million years ago. Pangaea split into two large continents— Laurasia and Gondwana— about 180 million years ago. The next slide shows how Pangaea eventually broke up into the continents that exist today.

245 Million Years Ago

Pangaea existed when some of the earliest dinosaurs were roaming the Earth. The continent was surrounded by a sea called *Panthalassa*, which means "all sea."



180 Million Years Ago

Gradually, Pangaea broke into two big pieces. The northern piece is called *Laurasia*. The southern piece is called *Gondwana*.



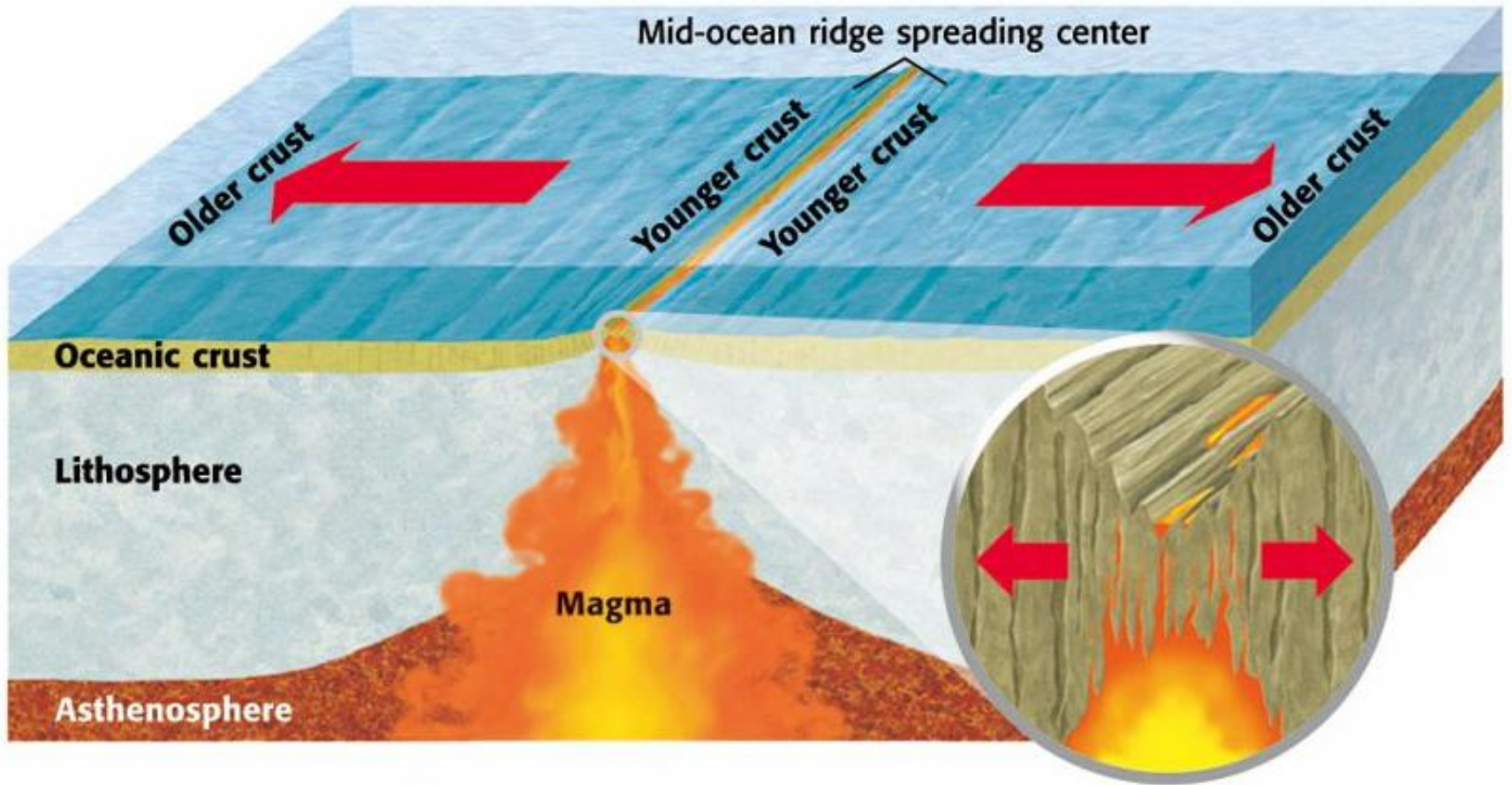
65 Million Years Ago

By the time the dinosaurs became extinct, Laurasia and Gondwana had split into smaller pieces.



III. Sea Floor Spreading

- A. Mid-Ocean Ridges and Sea-Floor Spreading** *Mid-ocean ridges* are places where sea-floor spreading takes place. Sea-floor spreading is the process by which new oceanic lithosphere forms as magma rises toward the surface and solidifies.
- B. Evidence for Sea-Floor Spreading: Magnetic Reversals** When Earth's magnetic poles change places, this change is called a *magnetic reversal*.
- C. Magnetic Reversals and Sea-Floor Spreading** Magnetic reversals are recorded over time in oceanic crust.



Critical Thinking Time!

1. The hypothesis that continents can drift apart and have done so in the past is known as_____.
2. The _____ is the soft layer of the mantle on which the tectonic plates move.
3. The rising of regions of the Earth's crust to higher elevations is called_____.

Evidence for Continental Drift

- Write a paragraph citing evidence from the book that supports Wegener's continental drift hypothesis.
- (You may need to read the paragraphs on pg.198 for help)
- Questions pg.201 #2-4, 6-8
- Write the page numbers down where the answers are found.