

Book F Chapter 4
Lesson 3 – The Theory of Plate Tectonics

Vocab:

- Plate tectonics
- convergent boundary
- divergent boundary
- transform boundary

A. Plate Tectonics (p. 109)

- a. Pieces of lithosphere that move on top of the asthenosphere

B. Boundary

- a. Physical place where tectonic plates touch
- b. Three main boundaries

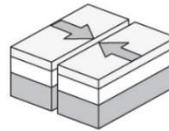
- i. Convergent
- ii. Divergent
- iii. Transform



Categorized by how the plates move relative to each other.

C. Convergent Boundary

- a. When 2 plates collide
- b. Divided into 3 sub-categories



- i. Continental-Continental
- 1. When 2 tectonic plates with continental crust collide
- 2. RESULT → MOUNTAIN RANGES

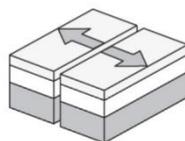
- ii. Continental-Oceanic
- 1. 2 tectonic plates; one has continental crust & one has oceanic crust.
- 2. Oceanic crust is heavier, so it “dives” under continental crust → SUBDUCTION
- 3. Oceanic crust gets “Recycled”

Could form volcanoes

- iii. Oceanic-Oceanic
- 1. 2 tectonic plates with oceanic crust
- 2. Heavier crust “dives” under lighter crust → SUBDUCTION
- 3. Forms deep ocean trenches

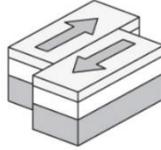
D. Divergent Boundary

- a. When 2 tectonic plates separate
- i. Forming on land → rift valleys
- ii. Forming in ocean → new sea floor (mid-ocean ridge)



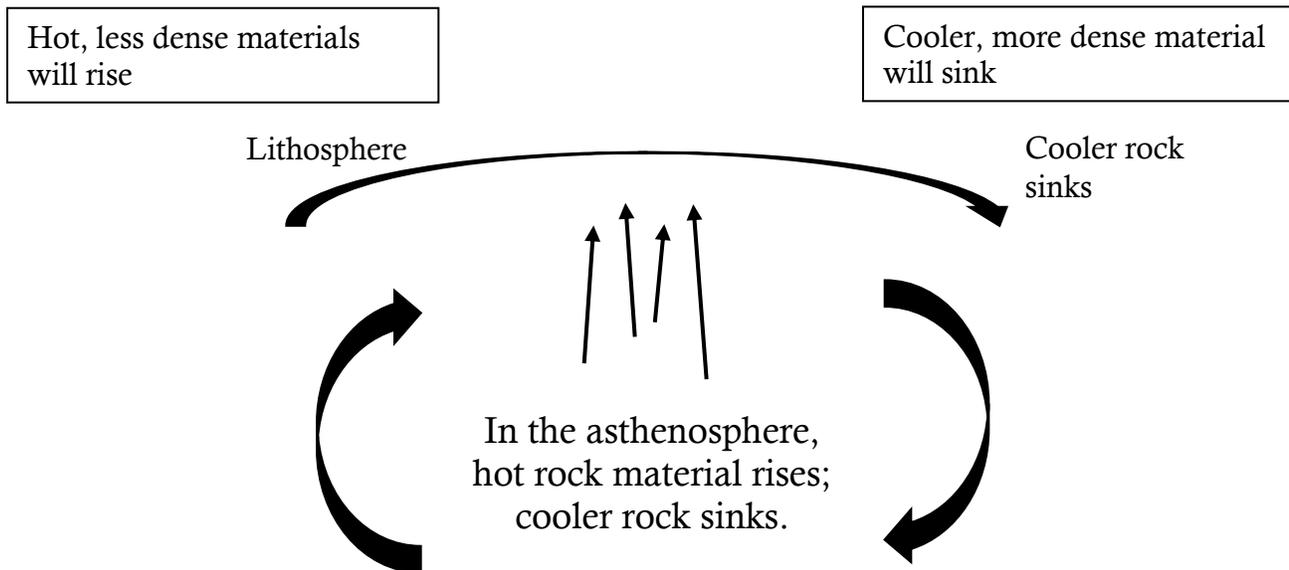
E. Transform Boundary

- a. When 2 tectonic plates **slide** past one another
- b. Area is called a “fault” or “fault zone”
 - i. Earthquakes are a result of plates moving past each other
 1. The plates don't move smoothly past each other
 2. Friction builds up



F. Possible causes of Plate Tectonics

- a. Could be due to the heating and cooling of the rock material in the asthenosphere
- b. Geologists are still working on finding this answer



REMEMBER:

- The plates are pieces of the lithosphere that move on top of the asthenosphere
- GPS satellites are used to measure plate movement
- On average, plates move 2-5 cm per year