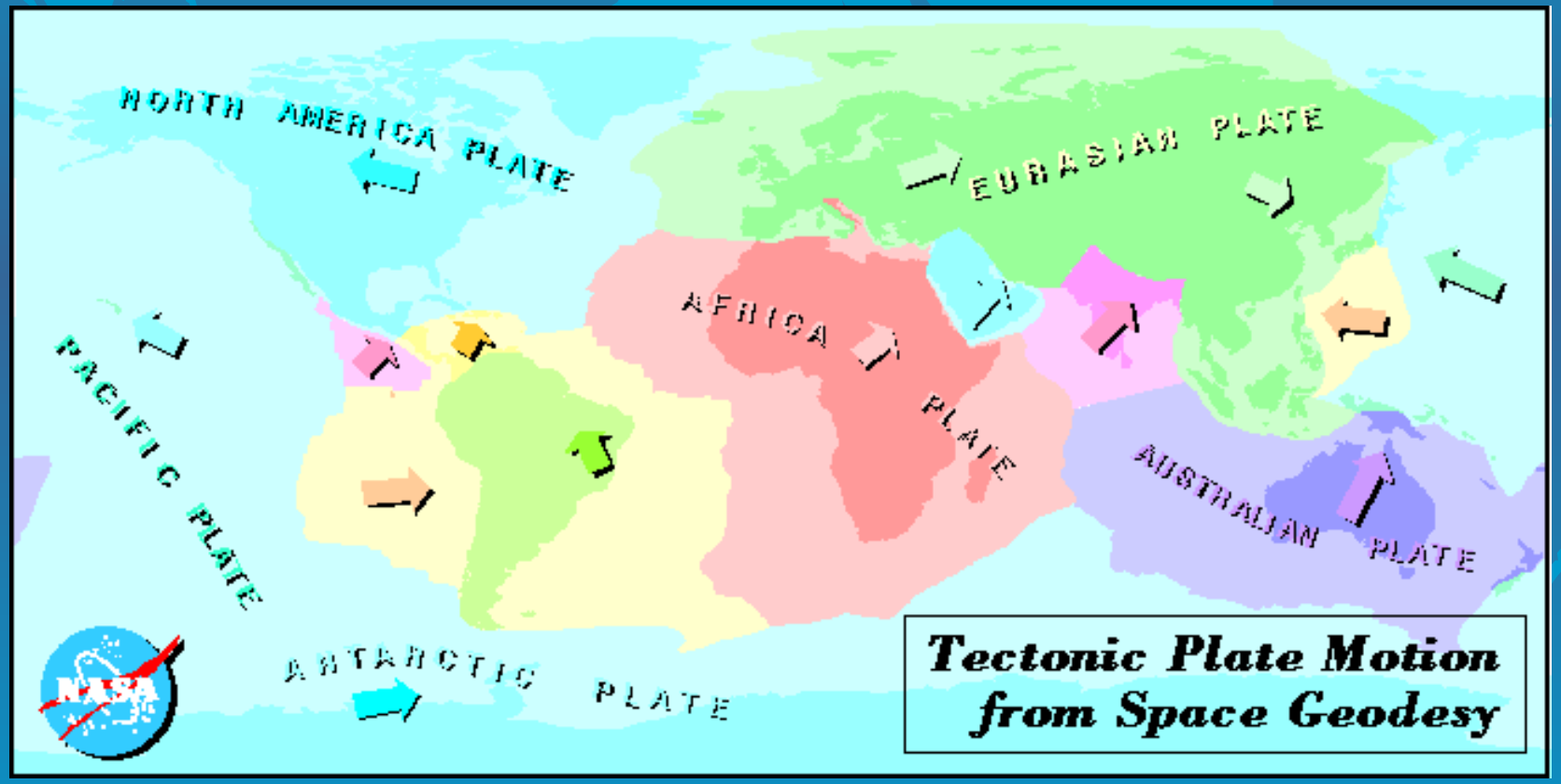
Plate Tectonics



Theory of Plate Tectonics

- **Plate Tectonics**

A. Theory of Plate Tectonics is the idea that the Earth's crust and upper mantle are broken into sections called plates that move around on the mantle.

B. Composition of the Earth's plates:

1. Lithosphere – the crust and part of the upper mantle
2. Asthenosphere – the plastic-like layer below the lithosphere

Plate Boundaries

- There are three different plate boundaries:

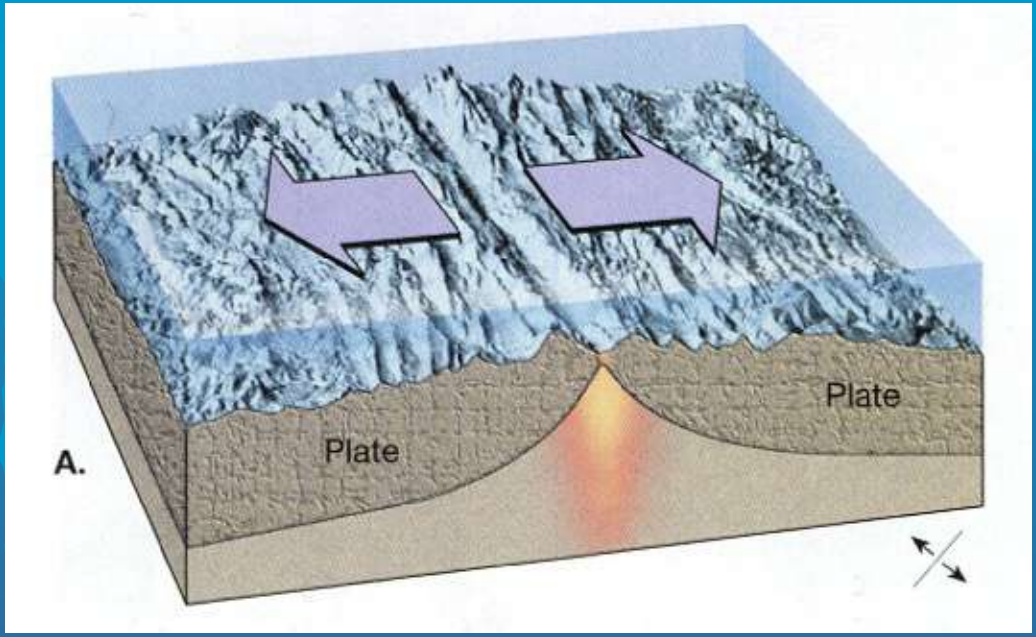
Divergent Boundaries

Convergent Boundaries

Transform Boundaries

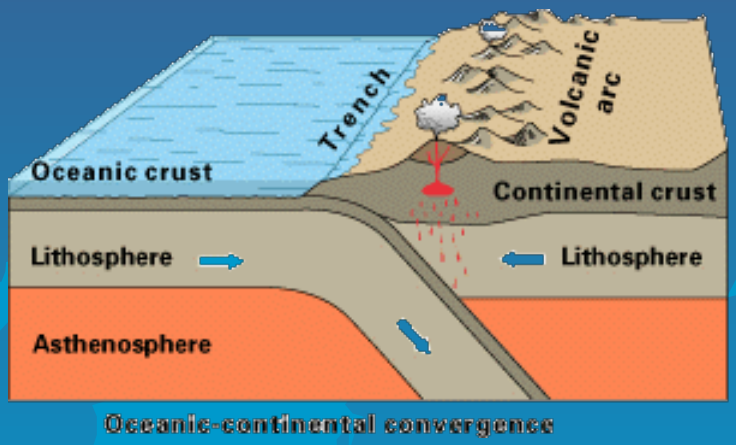
Divergent Boundaries

- Divergent Boundaries are the boundaries between two plates that are diverging, or moving away from each other.



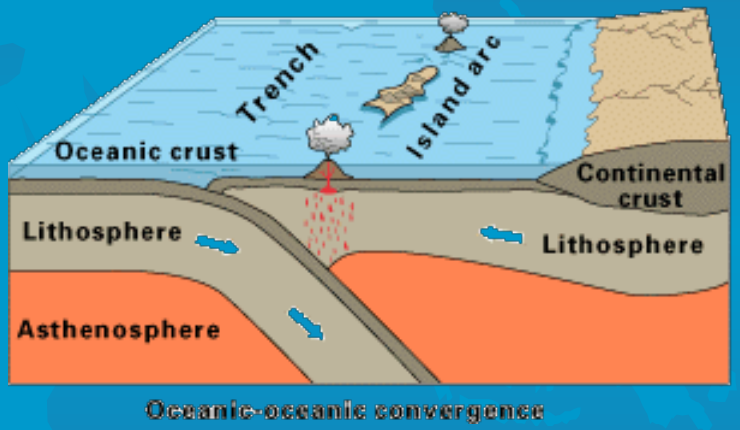
Convergent Boundaries

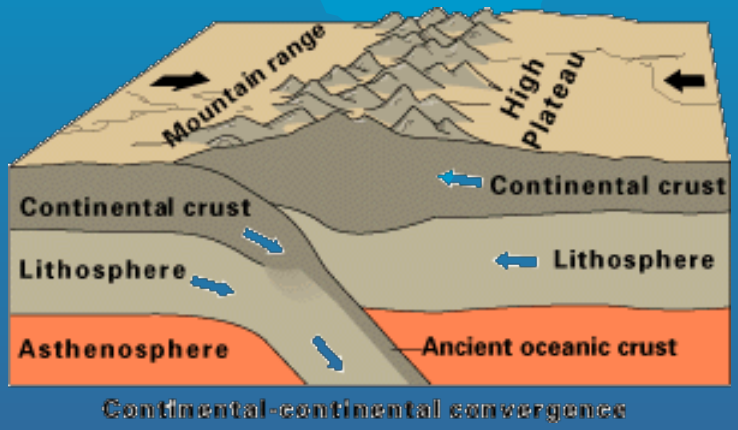
- Convergent Boundaries are the boundaries between two plates that are converging, or moving towards each other.
- There are three types of convergent boundaries:
  1. An ocean floor plate collides with a less dense continental plate.
  2. An ocean floor plate collides with another ocean floor plate.
  3. A continental plate collides with another continental plate.



← Oceanic-Continental

Oceanic-Oceanic →

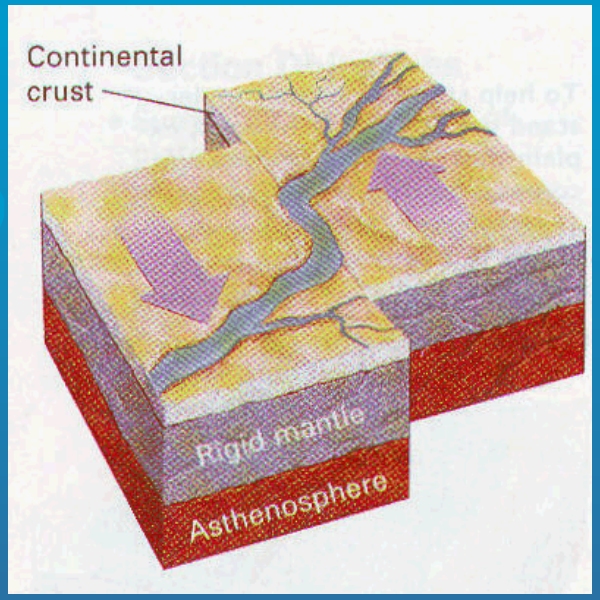




← Continental-Continental

Transform Fault Boundaries

- Transform Boundaries are the boundaries between two plates that are sliding horizontally past one another.



Effects of Plate Tectonics

- Landforms caused by plate tectonics:

a. rift valleys (divergent boundaries)

b. mountain ranges (continental-continental convergent boundaries)

c. volcanoes (oceanic-continental convergent boundaries)

d. faults (transform boundaries)

Causes of Plate Tectonics

- Convection Current is the driving force of plate tectonics in which hot, plastic-like material from the mantle rises to the lithosphere, moves horizontally, cools, and sinks back to the mantle.
- The convection currents provide enough energy to move the plates in the lithosphere.

Quick Review of Plate Boundaries