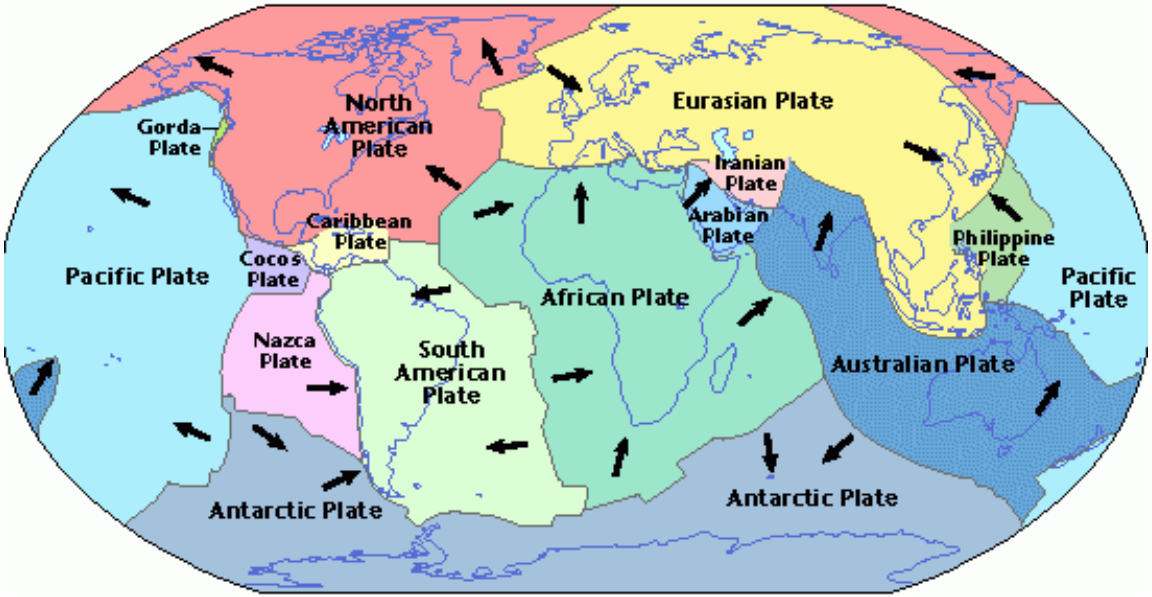


Plate Tectonics

Theory of Plate Tectonics

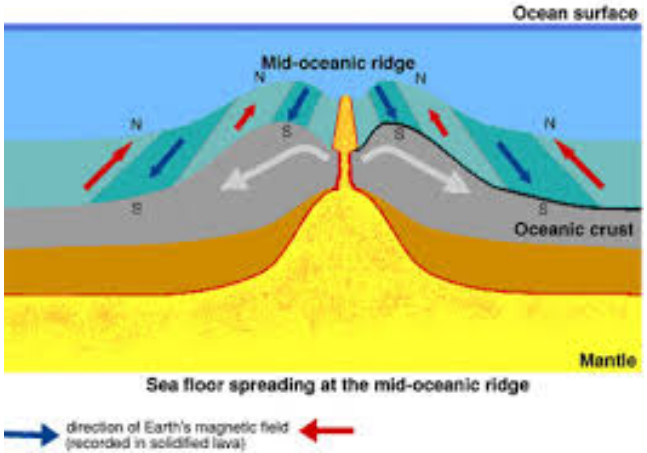
Earth's crust and part of the upper mantle (**lithosphere**)are broken into sections. These sections, called plates, move on a plastic like layer of the mantle (**asthenosphere**).

Types of Boundaries

When two plates are moving apart this is known as a Divergent Boundary.

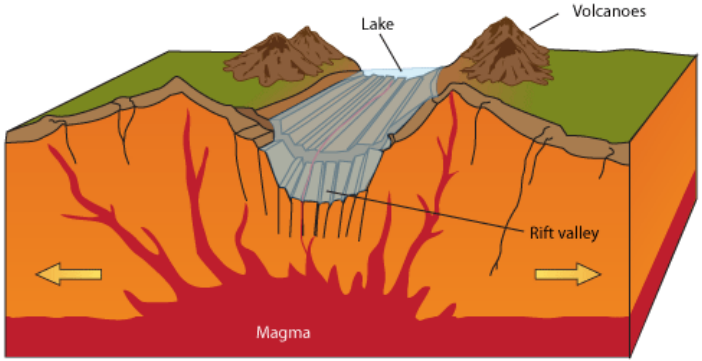
Types of Boundaries cont.

When two oceanic plates pull apart ridges are formed. An example of this is the Mid-Atlantic Ridge.



Types of Boundaries cont.

When two continental plates pull apart, they form rift valleys.



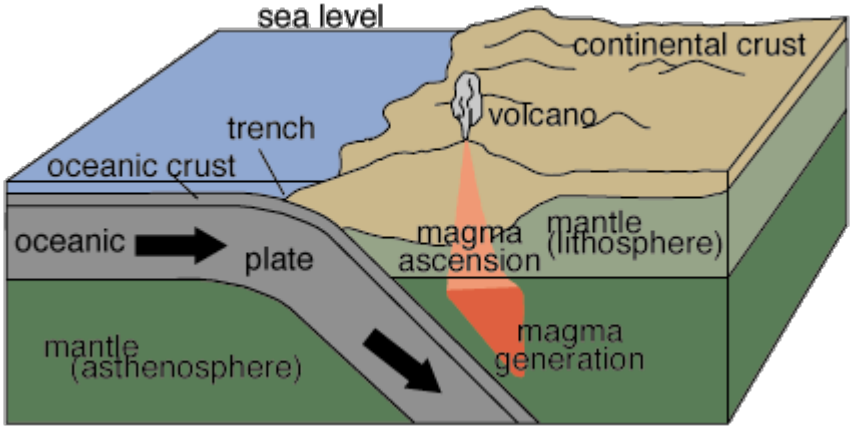
Types of Boundaries cont.

When two plates are coming together this is known as a convergent boundary.

Types of Boundaries cont.

What happens when an oceanic plate and a continental plate converge?

Subduction

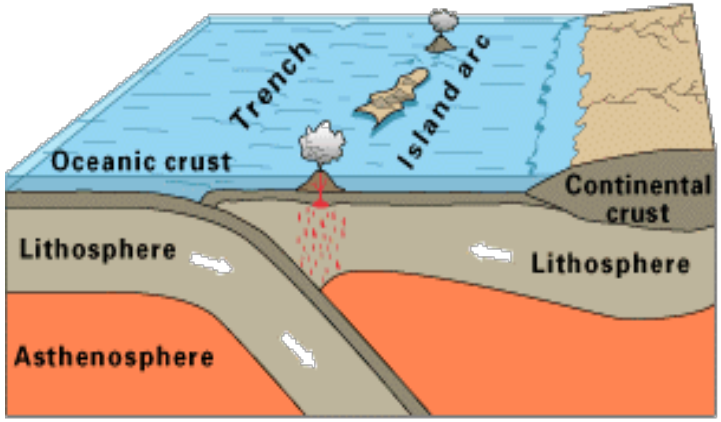


High temperatures cause rock to melt around the subducting oceanic plate. The newly formed magma is forced upward along the plate boundaries, forming volcanoes.

Types of Boundaries cont.

What happens when two oceanic plates converge?

Subduction



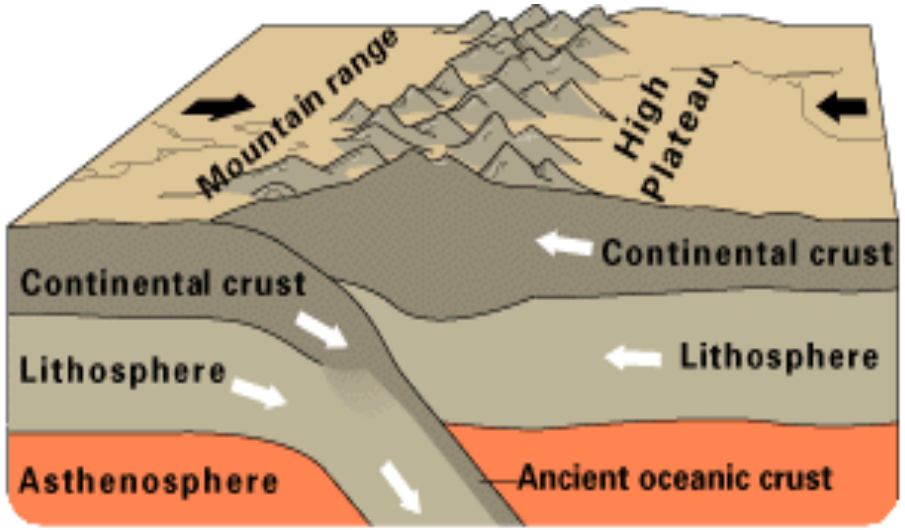
Oceanic-oceanic convergence

The colder, older, denser oceanic plate sinks into the mantle. Once again the high temperatures cause the rock around the subduction zone to melt forming magma. Pressure forces the magma upward along the plate boundaries to also form volcanoes, known as island arcs.

Types of Boundaries cont.

What happens when two continental plates collide?

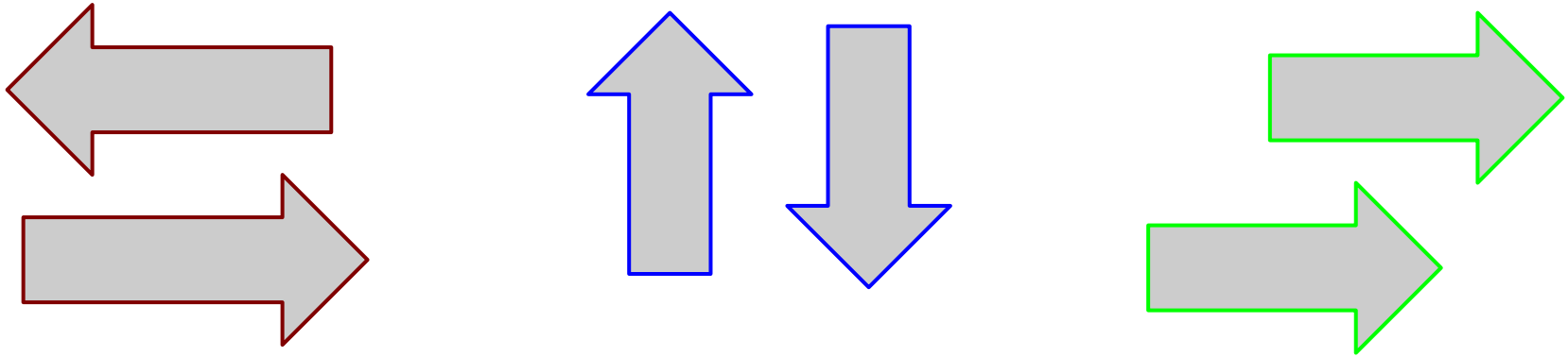
Because both plates are less dense than the asthenosphere subduction does not occur. However, when the two plates converge their crusts begin to crumple up, forming mountain ranges and causing earthquakes.



Continental-continental convergence

Types of Boundaries cont.

Transform boundaries occur where two plates slide past one another. (Strike-Slip Faults)



When one plate slips past another suddenly, earthquakes occur.