

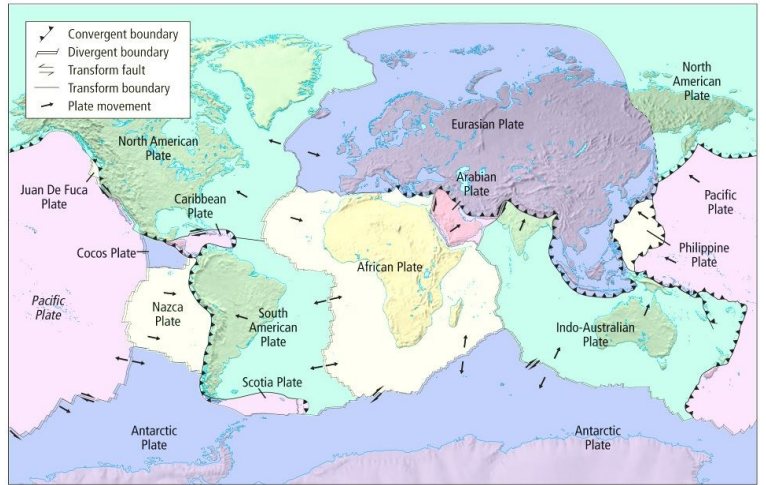
12.2A Notes: Tectonic Plate Interactions

Lithosphere: - rock layer on outside of earth

Asthenosphere: - molten layer underneath the lithosphere.

Tectonic Plates: - part of lithosphere
- approximately 12 major plates

different interactions occur when plates meet.



What causes plates to move?

combination of push (from back) and pull (from front) caused by convection currents.

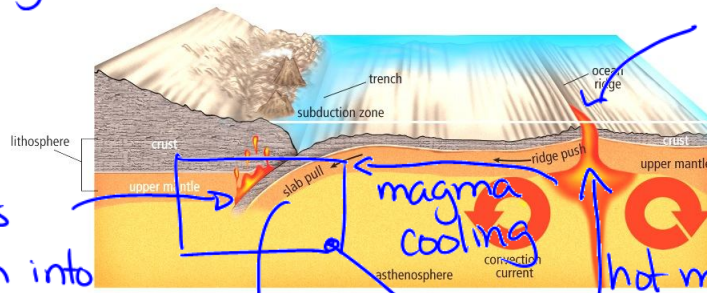


Figure 12.13 Thermal energy from inside Earth, gravity, and tectonic plate interactions affect the movement of tectonic plates.

plate gets pulled down into asthenosphere by convection current and melts. It pulls the rest of the plate along behind it.

cooler magma sinks

magma comes through surface and forms a spreading ridge (ocean) or rift valley (on land)

hot magma and forms rock
This pushes plates apart.

"subduction zone"
one plate is forced to go underneath another plate.
you will find volcanoes and earthquakes

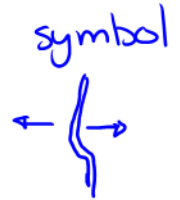
Different Types of Plate Interactions

Plate interactions are based on two main factors:

- what direction are the plates going or how fast
- which plate is denser

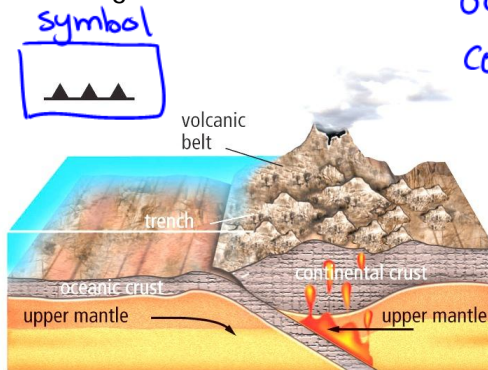
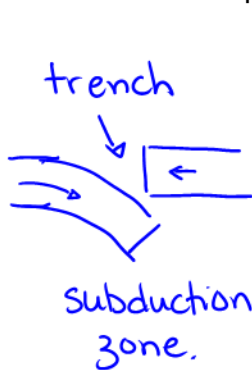
Divergent Plate Boundaries (spreading boundaries)

- move in opposite directions, so do not collide.
- spreading ridge/ rift valley. eg. MidAtlantic ridge.



Convergent Plate Boundaries (colliding plates)

a) Ocean-continental plate convergence



oceanic plate = more dense
continental plate = less dense

formation of mountains
as the continental
plate "crumples"
volcano formation and
earthquakes in
the subduction zone.

A. The convergence of an oceanic and a continental plate produced the Coast Mountains of British Columbia.

b) Oceanic-oceanic plate convergence

- usually one plate is more dense and goes down; "subducted" just like an oceanic-continental convergence. eg Japan was formed by oceanic volcanoes.

c) Continental-continental plate convergence

- both plates go up, forming an inland mountain range "Himalayas"

Transform Plate Boundaries (plates sliding past each other)



these form "transform faults"
no volcanoes, but they are
responsible for earthquakes.

sometimes the rock can't slide
past and they get stuck.
pressure builds up until something
breaks → earthquake.