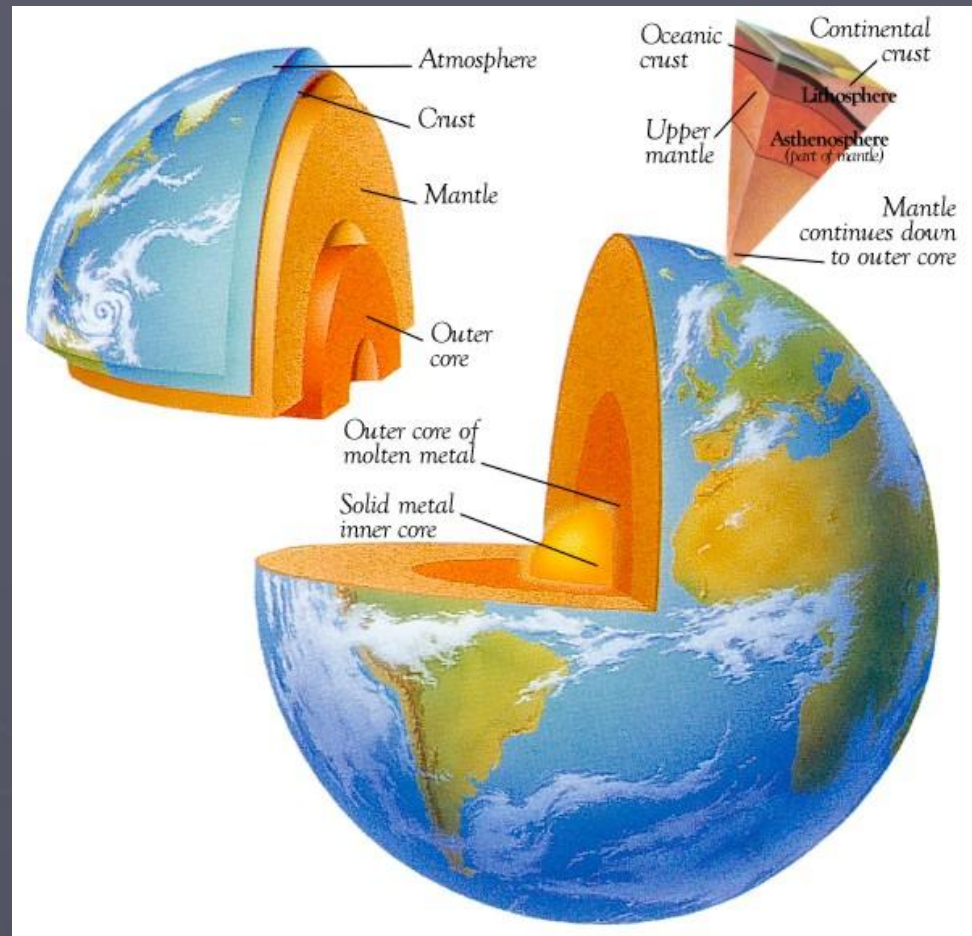


# The Shaping of the Earth

How the Continents got their form

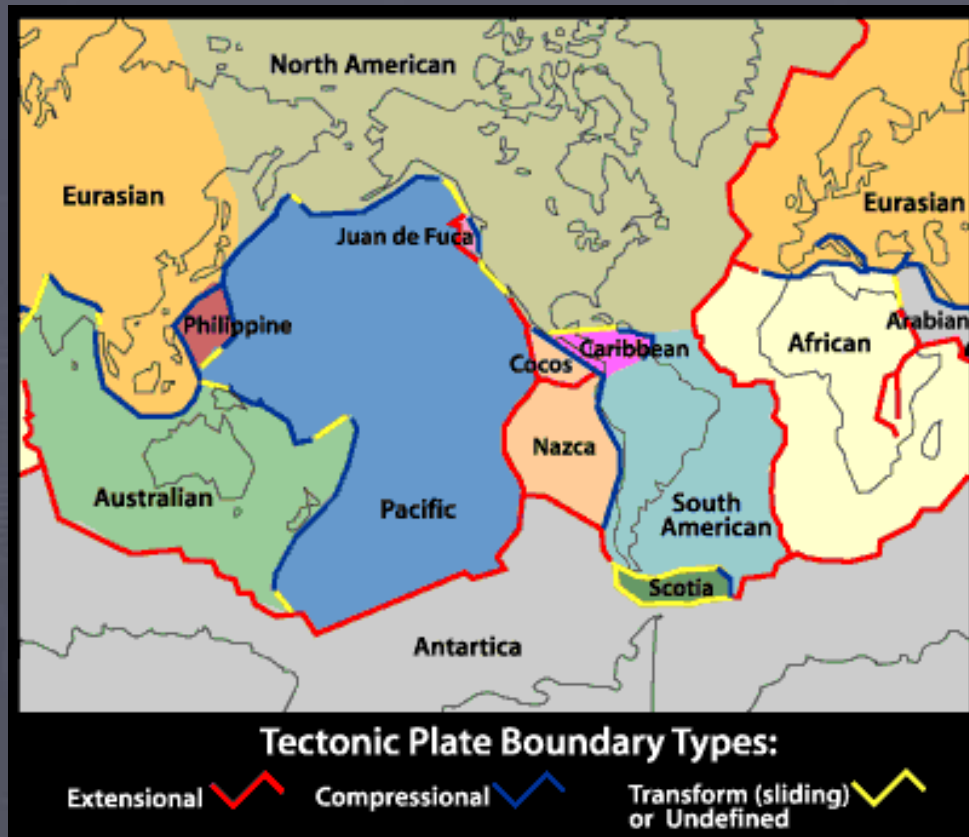
# The Earth's Layers

- Core – Dense Iron and Nickel. Their spinning (opposite directions) causes earth's magnetism
- Mantle – Solid matter, makes up about 80% of Earth's volume
- Crust – Solid Shell, varies in size from 6-30 km thick



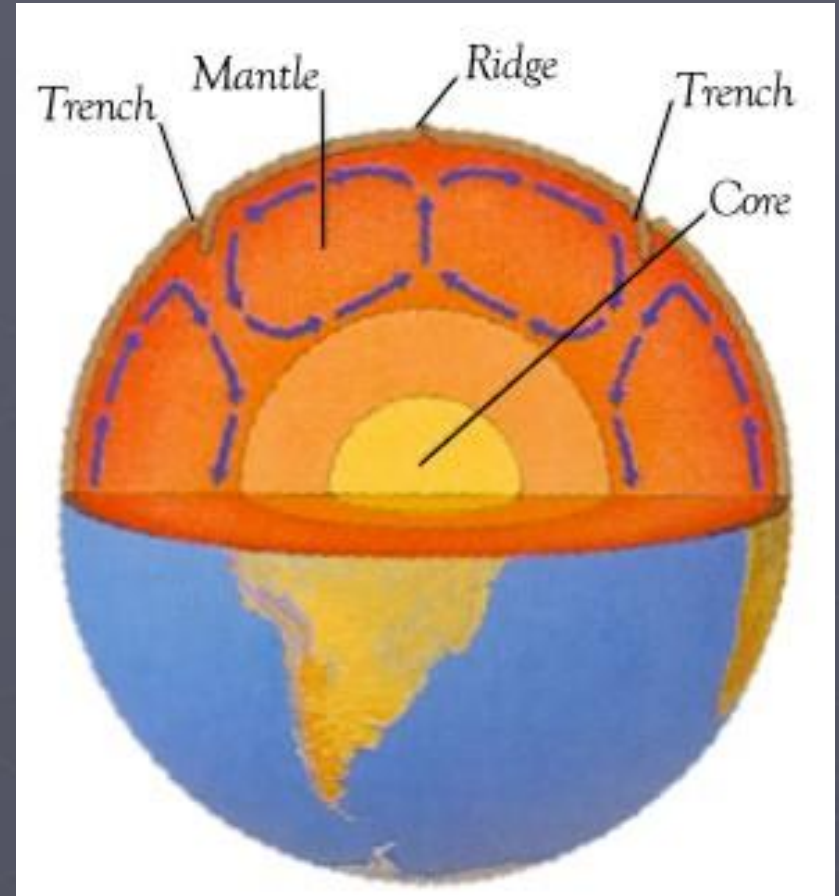
# Plate Tectonics

- The earth's crust is broken up into smaller “plates” that move and shift.
  - Oceanic Plates – Thinner and hold the major oceans
  - Continental Plates – Thicker and consist mostly of the land above water



# How the Plates Move

- Heat and molten rock move to the surface from the core, here they are forced along the bottom of the crust and move the plate tectonics.
  - Average 2-10cm a year



# Continental Drift Theory

- Theory that all continents used to be connected, but have drifted apart from each other
- With the growth of underwater technology scientists could detect underwater features (Mountains, trenches)
- Rock in underwater trenches much newer than continental rock



PERMIAN  
225 million years ago



TRIASSIC  
200 million years ago



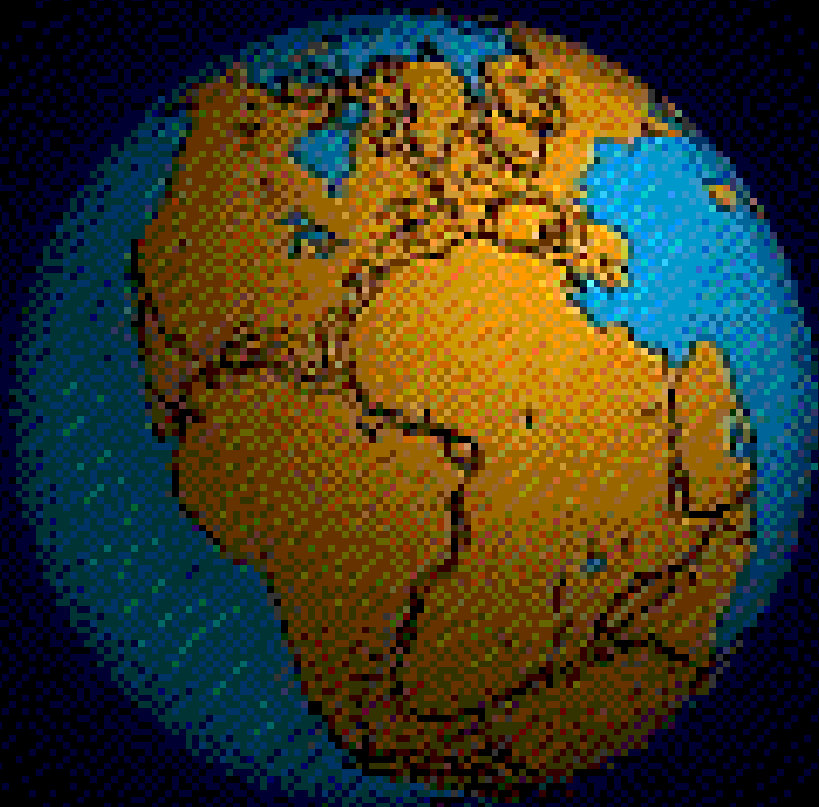
JURASSIC  
150 million years ago



CRETACEOUS  
65 million years ago



PRESENT DAY



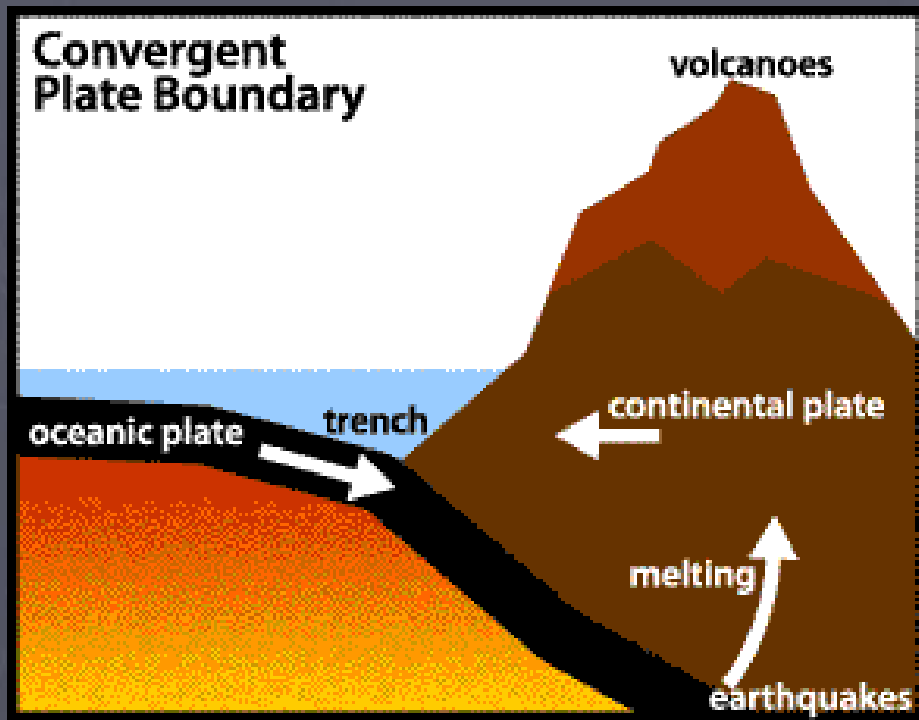
# When Plates Collide



Aftermath of an earthquake in Japan, 2004  
Photograph by Kimimasa Mayama/Reuters

# Convergent Boundaries

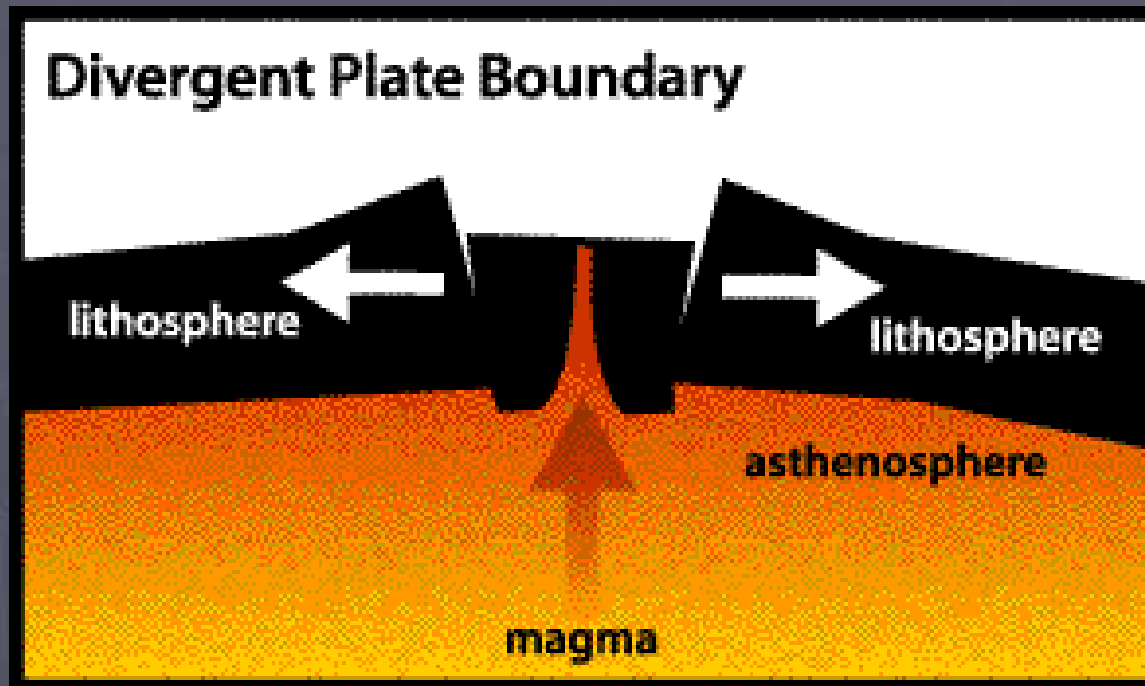
- Two plates collide head to head, forcing one down and one up
  - Results in Ocean trenches, mountain formation, and volcanoes





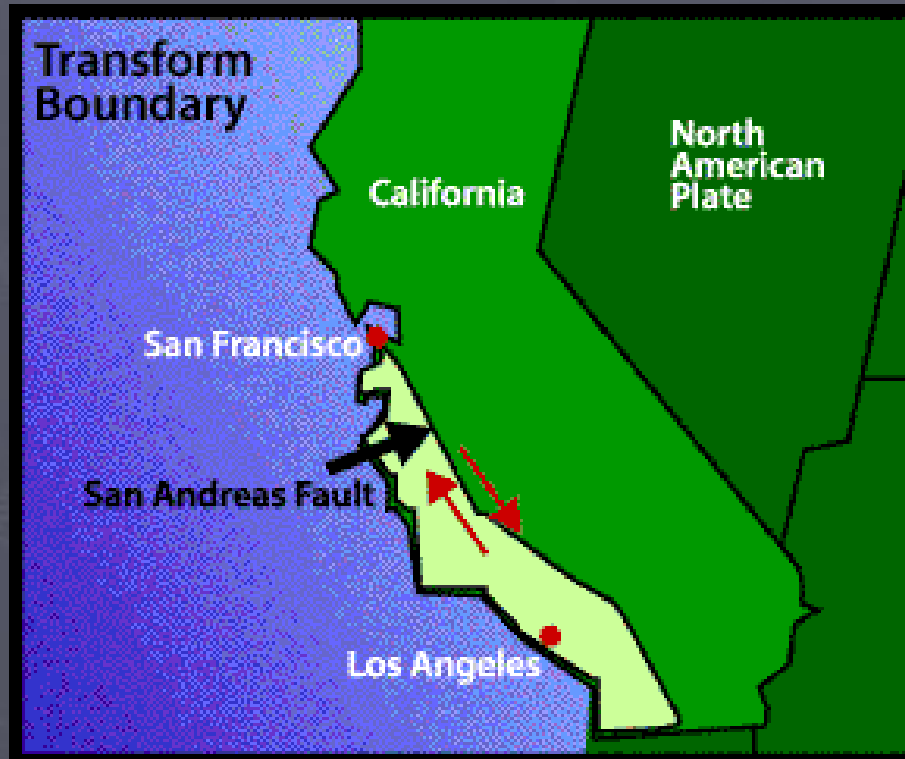
# Divergent Plate Boundary

- Two plates pulling away from each other forming a massive trench where magma seeps up to create new rock



# Transform Boundary

- Results when two plates move past each other. Rubbing against each other and causing earthquakes



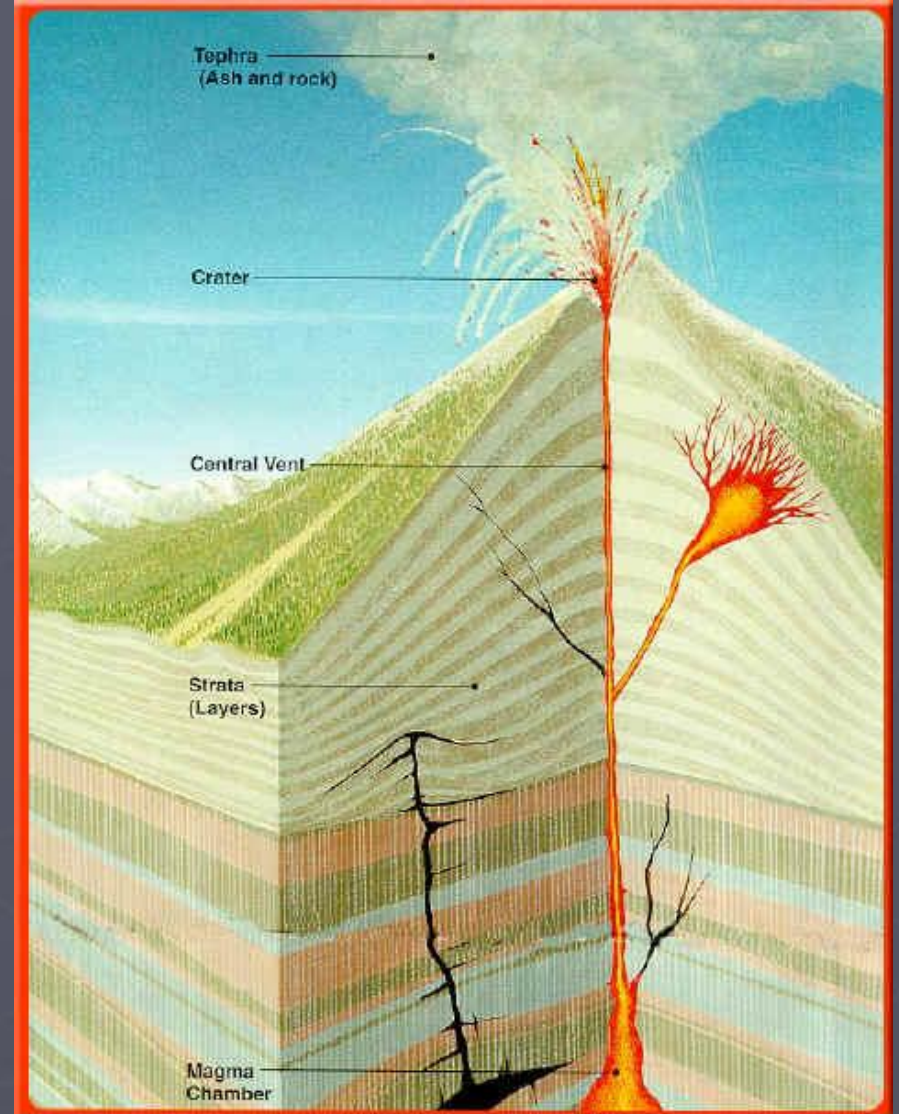
# Earthquakes

- Result from any of the three plate movements.
  - Above ground can tear apart land and destroy cities



# Volcanoes

- Formed when molten rock (Magma) is forced to the surface.
- Pressure causes lava to erupt
- Lava eventually cools to form new rock.



# The Ring of Fire

- Located around the Pacific Plate, an area of intense volcanic and seismic activity

