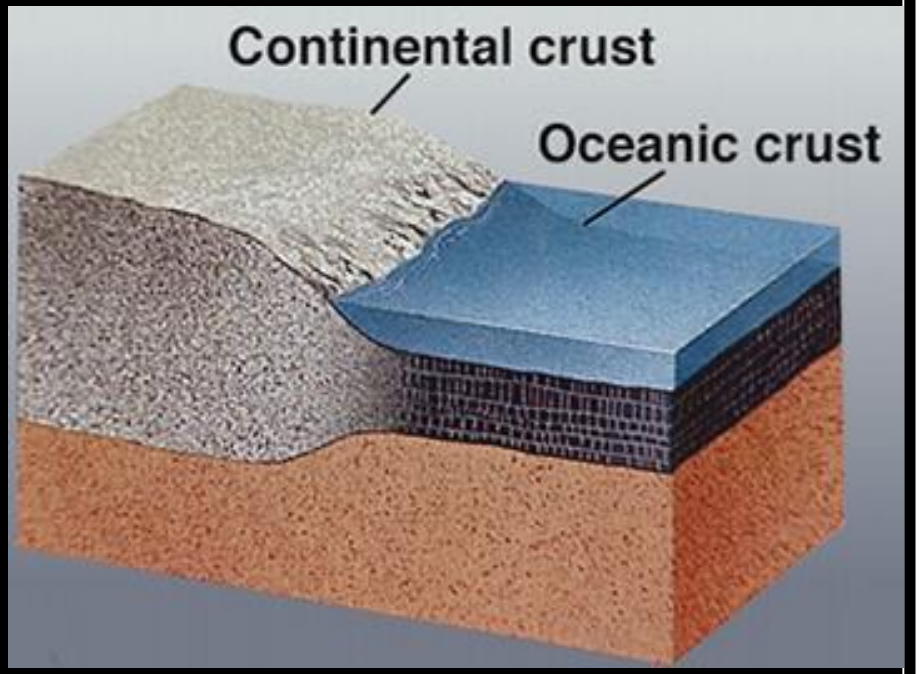
Layers of the Earth

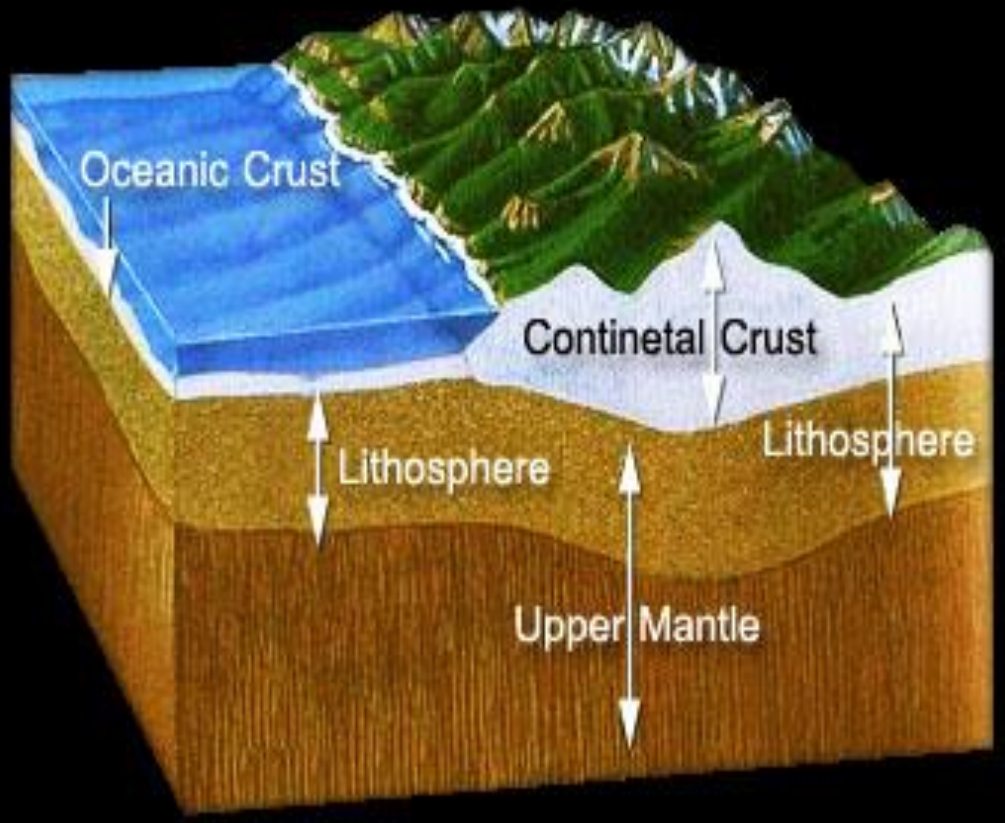
Unit 2 - Ch 9

Crust

- **Oceanic Crust:**
  - **Thin & Dense**
  - **Made of *basalt***
  - ***3-6 miles thick***
- **Continental Crust:**
  - **Thick & Light**
  - **Made of *granite***
  - ***20-30 miles thick***



Lithosphere

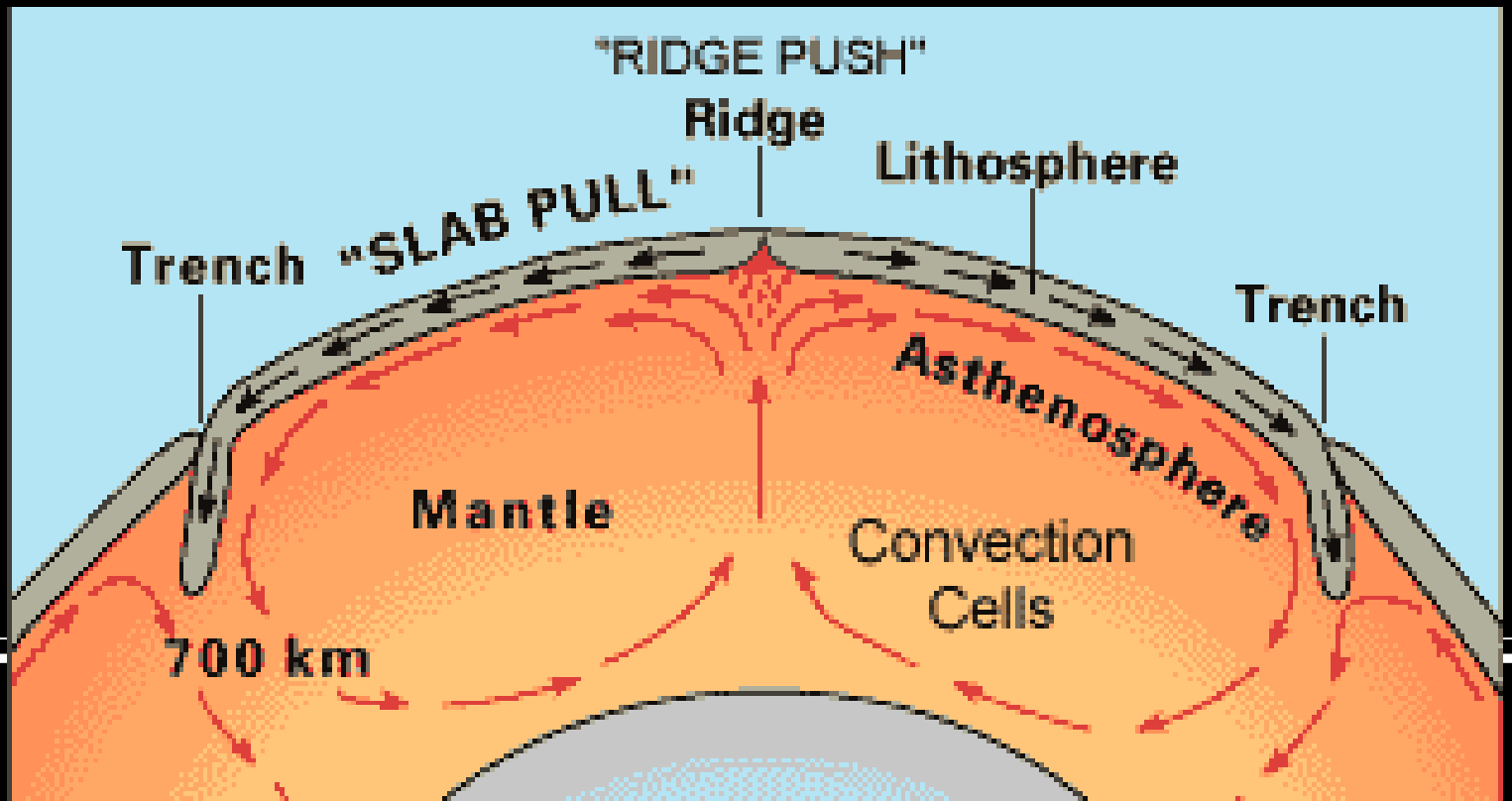


- ***Rigid***, ***outer shell*** (“skin”) of Earth
  - Includes ***Crust*** **AND** ***Upper Mantle***

“Ridge Push”

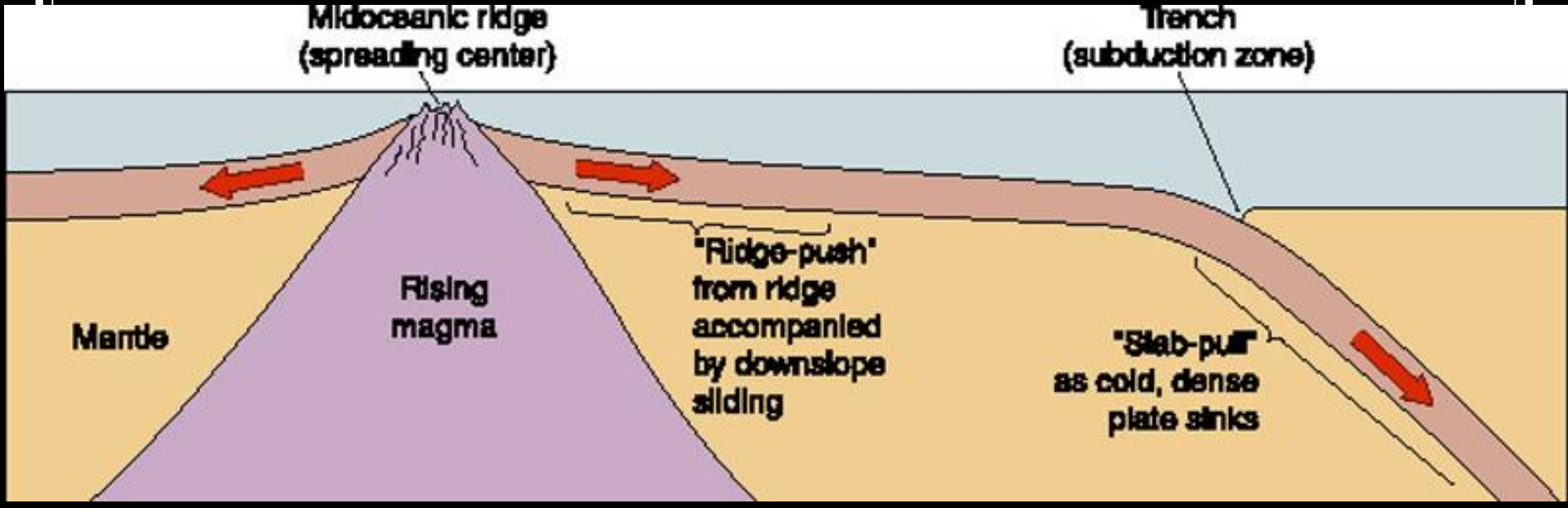
Weight of ***uplifted ocean ridge*** is ***“pushed”*** **away** from each other due to ***gravity***

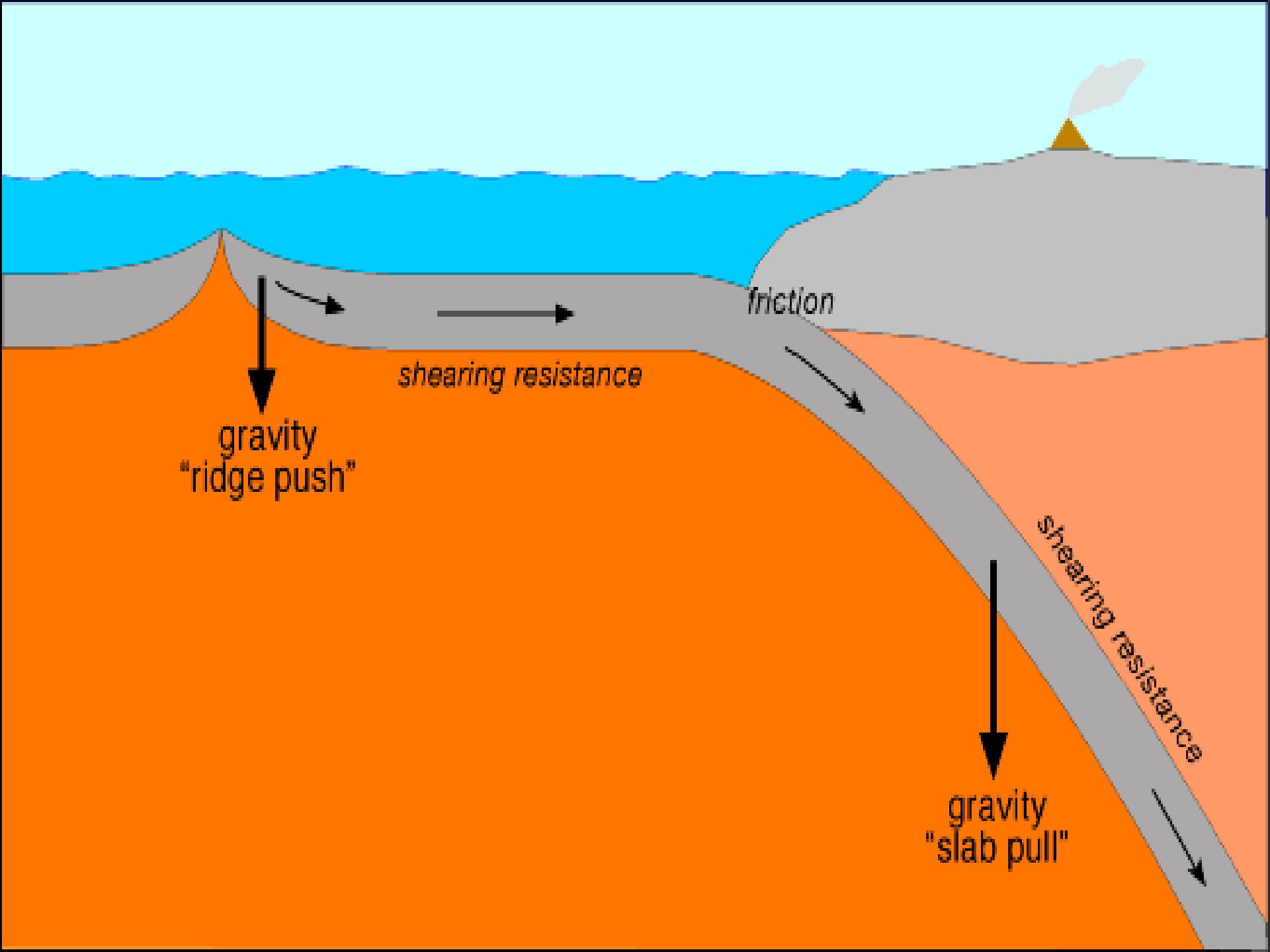
- Originates at ***divergent boundaries***



“Slab Pull”

Weight of ***subducting plate*** ***(Convergent)***, due to ***sinking*** ***mantle convection*** currents, help to ***“pull”*** lithosphere **downward** into ***subduction zone***



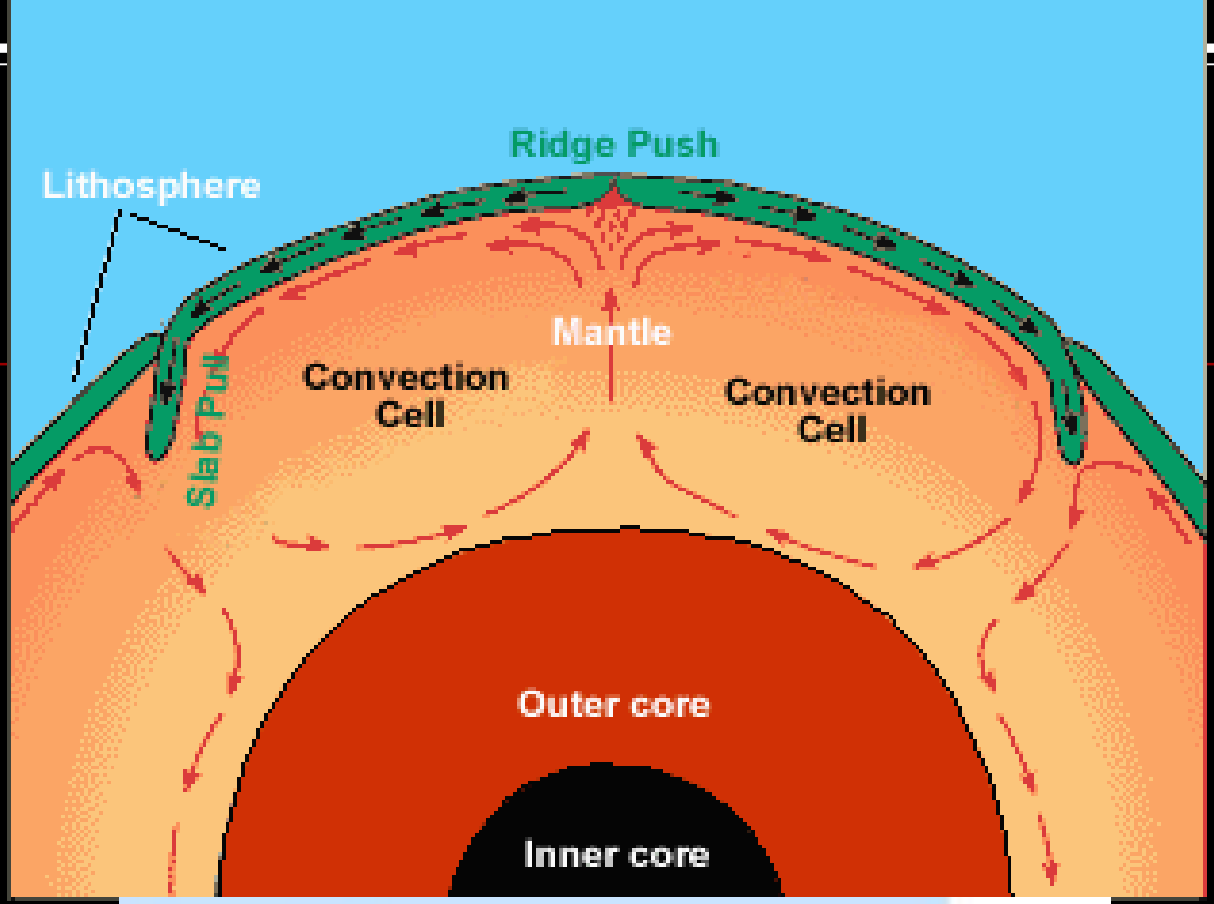

friction
shearing resistance
gravity
"ridge push"
shearing resistance
gravity
"slab pull"

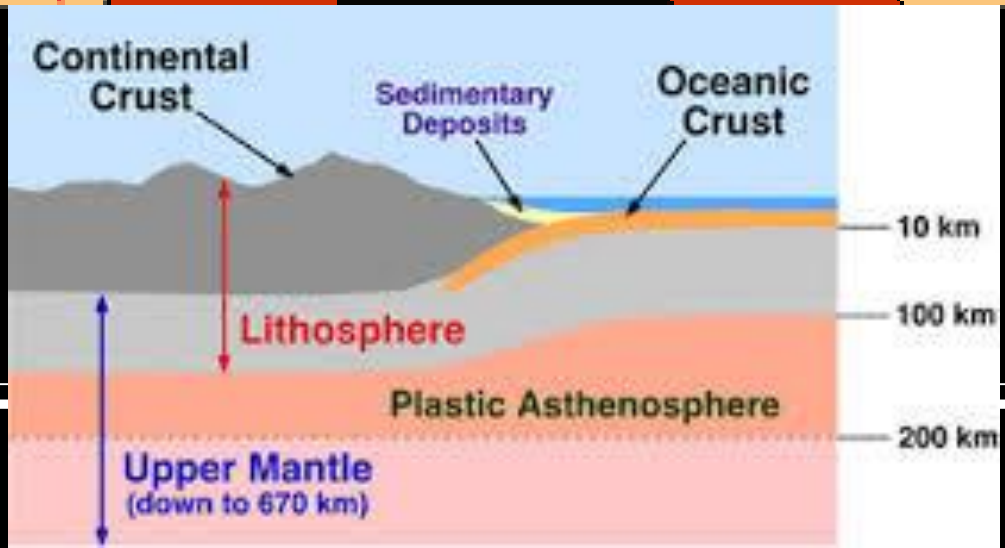
Mantle

- **Solid** & **rocky** layer ***(~1800 miles thick)*** making up most of Earth's ***volume (~80%)***

ASTHENOSPHERE:

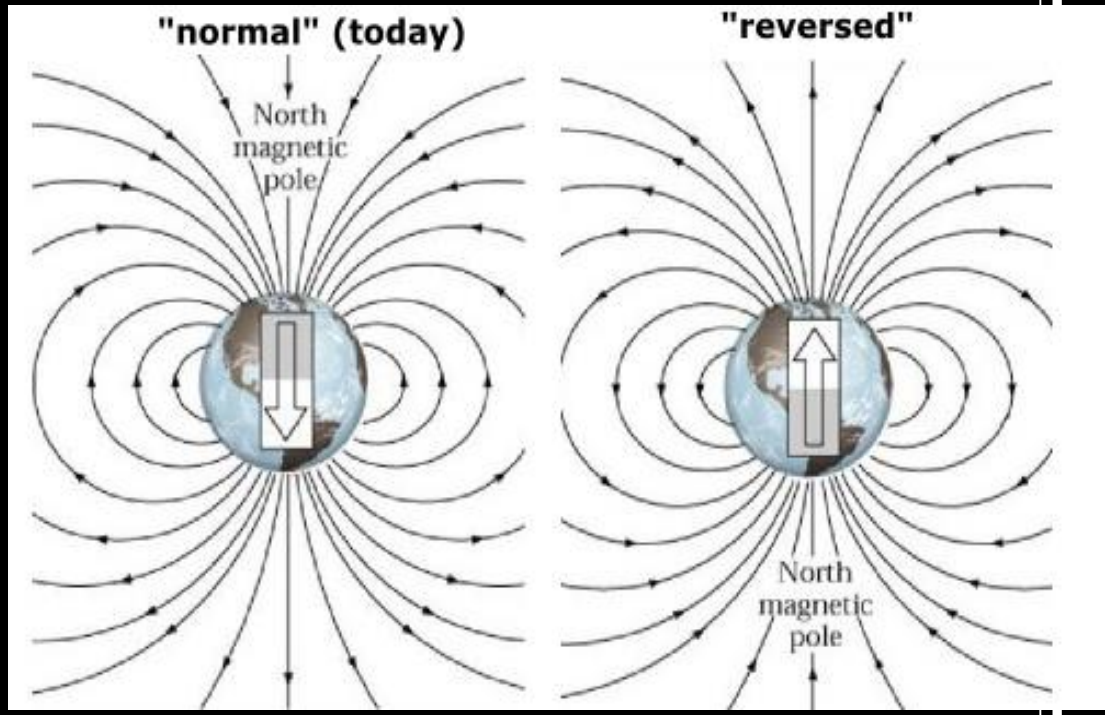
- Part of **upper mantle *below* lithosphere**
- **Permits** tectonic ***plate motion*** due to weak, partially molten rock
- ***~115 miles thick***

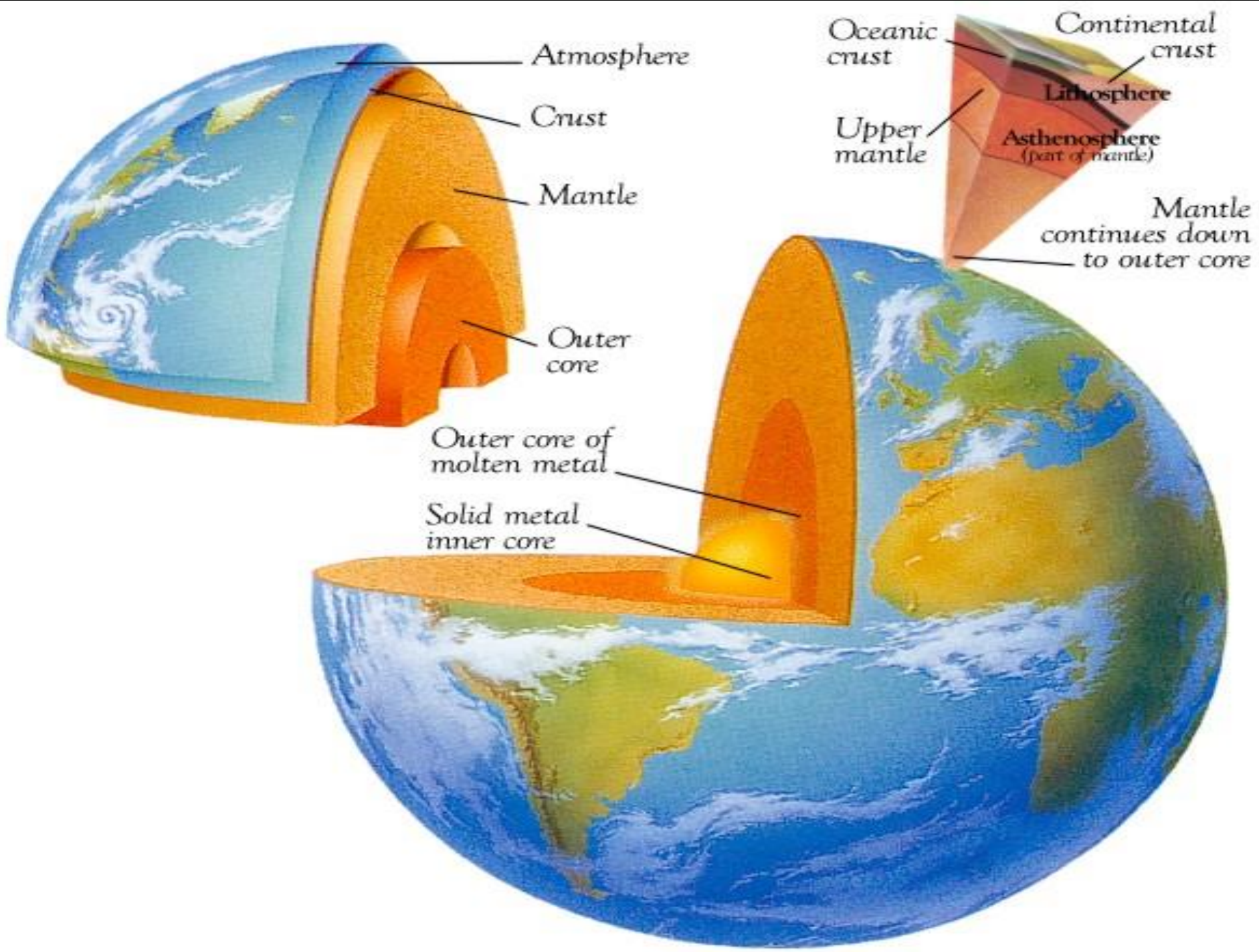

Ridge Push
Lithosphere
Mantle
Slab Pull
Convection Cell
Convection Cell
Outer core
Inner core


Continental Crust
Sedimentary Deposits
Oceanic Crust
10 km
100 km
Lithosphere
Plastic Asthenosphere
200 km
Upper Mantle
(down to 670 km)

Core

- **Outer Core:**
  - ***Liquid Iron*** – Creates Earth's **magnetic** field
  - ***~1400 miles thick***
- **Inner Core:**
  - ***Solid*** Ni & Fe
  - ***~760 miles thick***

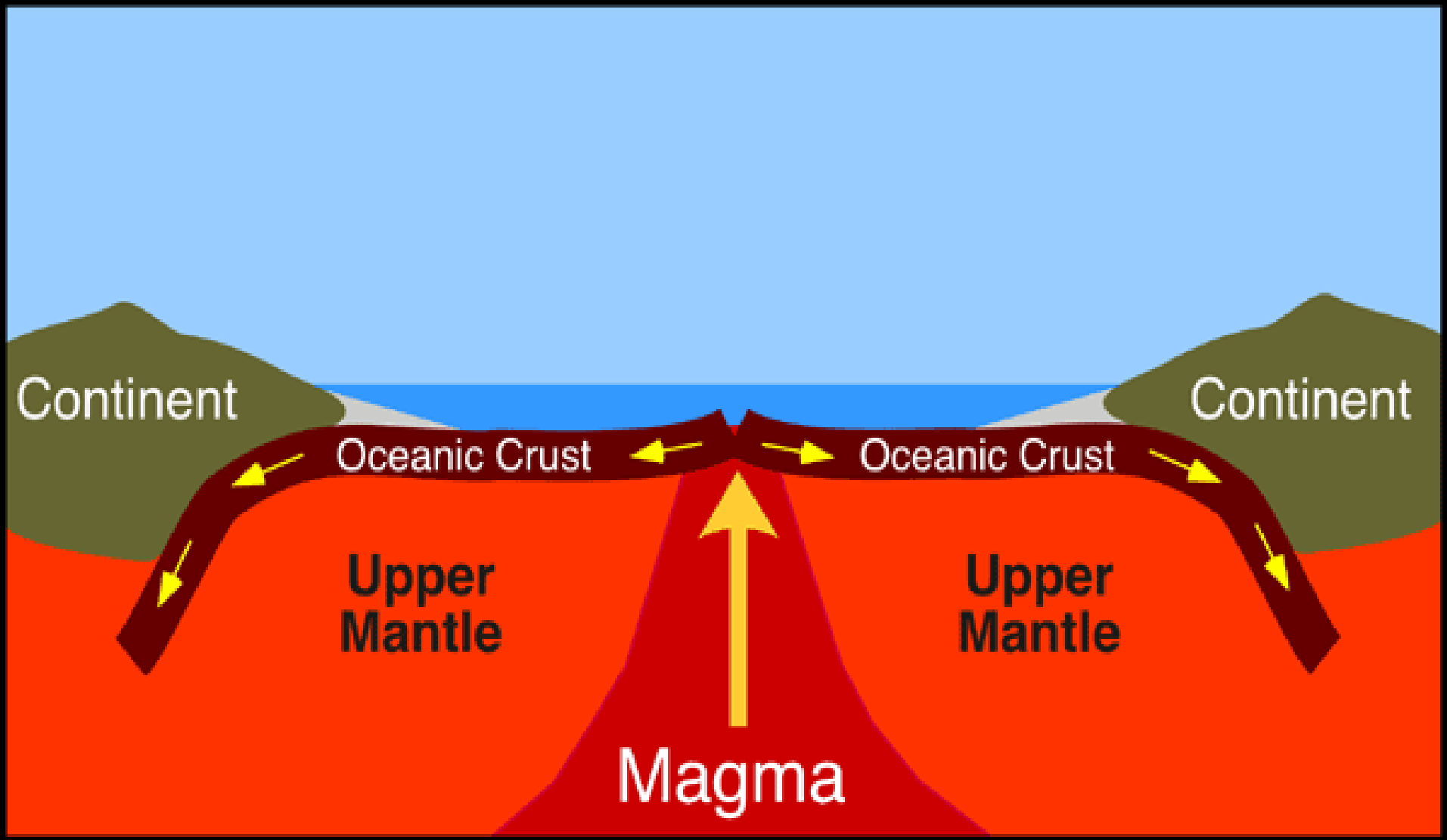



Atmosphere
Crust
Mantle
Outer core
Oceanic crust
Continental crust
Lithosphere
Upper mantle
Asthenosphere (part of mantle)
Mantle continues down to outer core
Outer core of molten metal
Solid metal inner core

Causes of Plate Motion

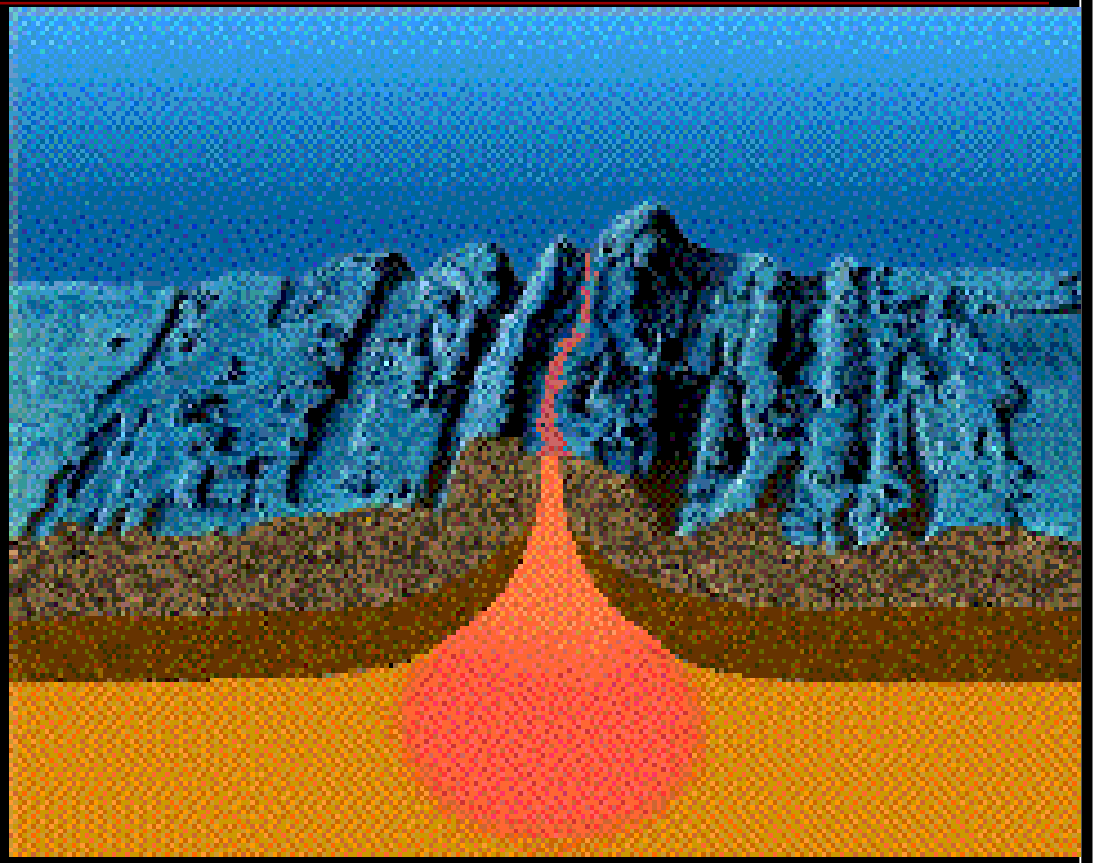
Convection Currents

A Closer Look…



Convection Currents

- **Mantle Convection** - Transfer ***(rising & sinking)*** of heat (magma)



Convection Currents

- ***Warmer*** rocks **rise** as ***cooler*** rocks **sink**