

Sample homework pages 6 - 13 of *Inside Earth*

Earth's Interior

A. Two types of evidence used to discover what is inside Earth

1. direct evidence - rock samples
2. indirect evidence - seismic waves

B. Layers of the Earth

1. temperature - increases as you go deeper
 - a. + 1 degree for every 40 meters
 - b. radioactive material add to heat

2. pressure - increases as you go deeper

3. Crust

- a. ocean floor = basalt
- b. dry land = granite

4. Mantle

- a. lithosphere - rigid upper layer
- b. asthenosphere - soft layer
- c. lower mantle - solid lower layer

5. Core

- a. outer core - molten layer
- b. inner core - dense ball of solid metal
- c. Earth's Magnetic Field - created by movement in the outer core

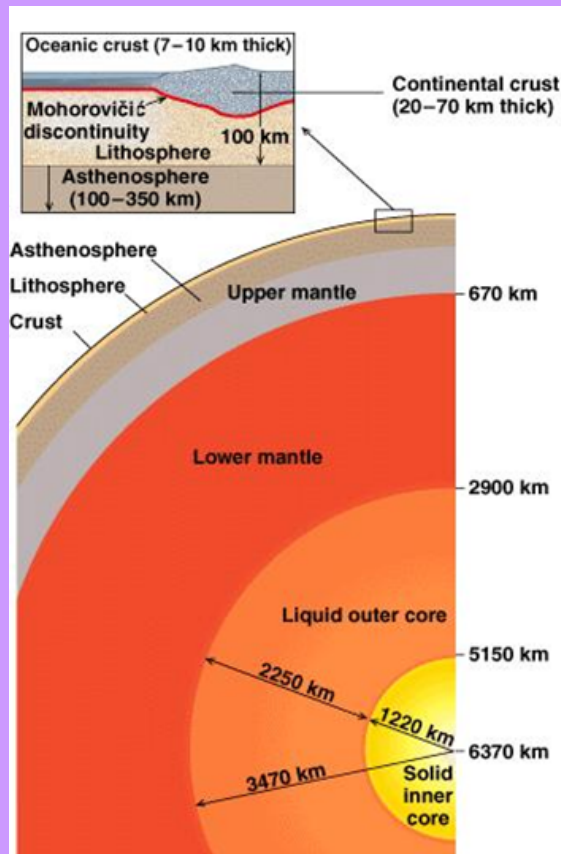
Mantle

- Pressure and Temperature increase (1200°C → 3800°C)
- Mantle is part solid and part flowing solid
- 40 km to 3000 km thick
- Lithosphere + Asthenosphere + Mesosphere (Lower Mantle) = Mantle
- Convection Currents transfer heat outward
- Boundary with crust is marked by rapid increase in temperature. (Moho)



Mantle

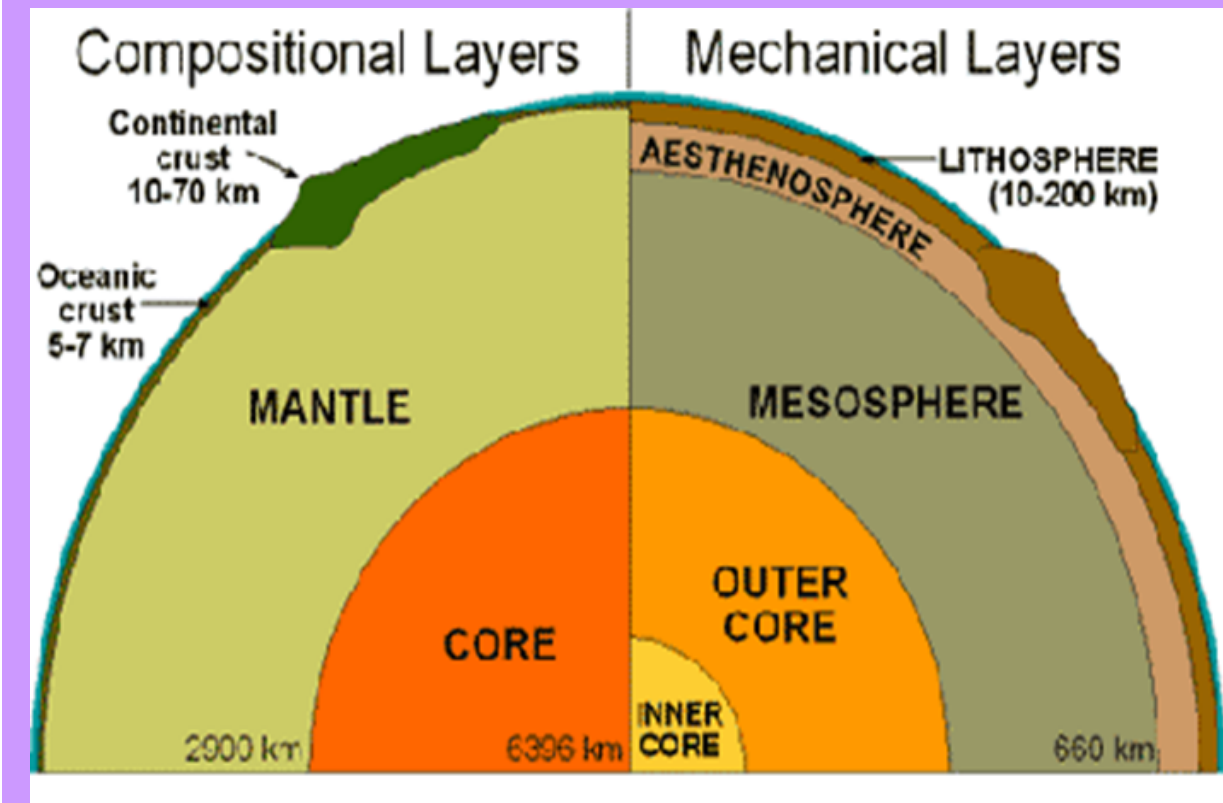
The lithospheric plates lie on top of a layer of softer, more plastic mantle rock (the asthenosphere or "weak layer") that allows the plates to move slowly upon it like a raft in thick mud.



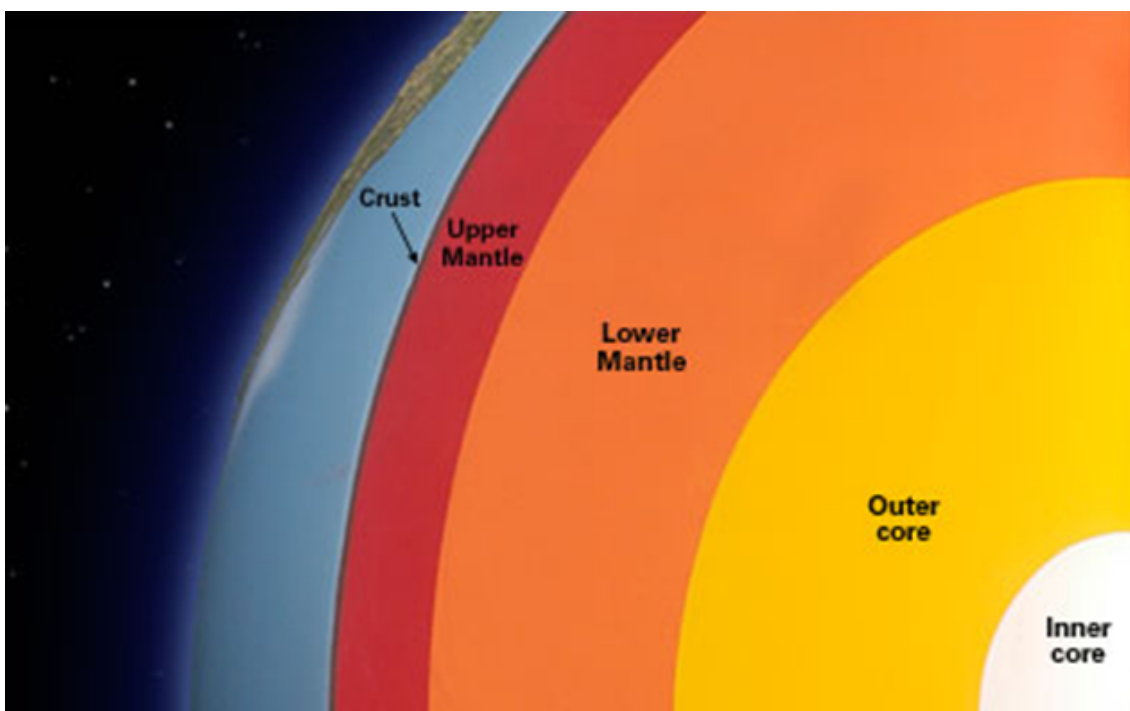
Core

- Boundary with mantle is marked by leveling off of temperature increases
- Temperatures estimated to be $3800^{\circ}\text{C} \rightarrow 4000^{\circ}\text{C}$.
- 4000km \rightarrow 6000 km thick
- Solid & very dense!
- Outer core is molten iron and nickel
- Inner core is solid iron and nickel

Core



Can you name the layers of the Earth's interior?



Earth's Layers... in a catchy song!

<http://www.youtube.com/watch?v=Q9j1xGaxYzY>

