

# Earth's Layers

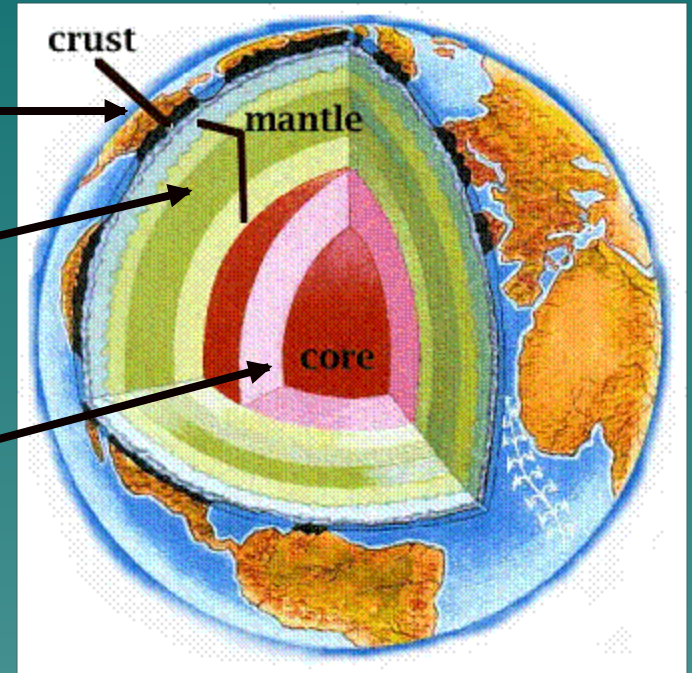


# Earth is divided into 3 basic layers:

**1. Crust**

**2. Mantle**

**3. Core**



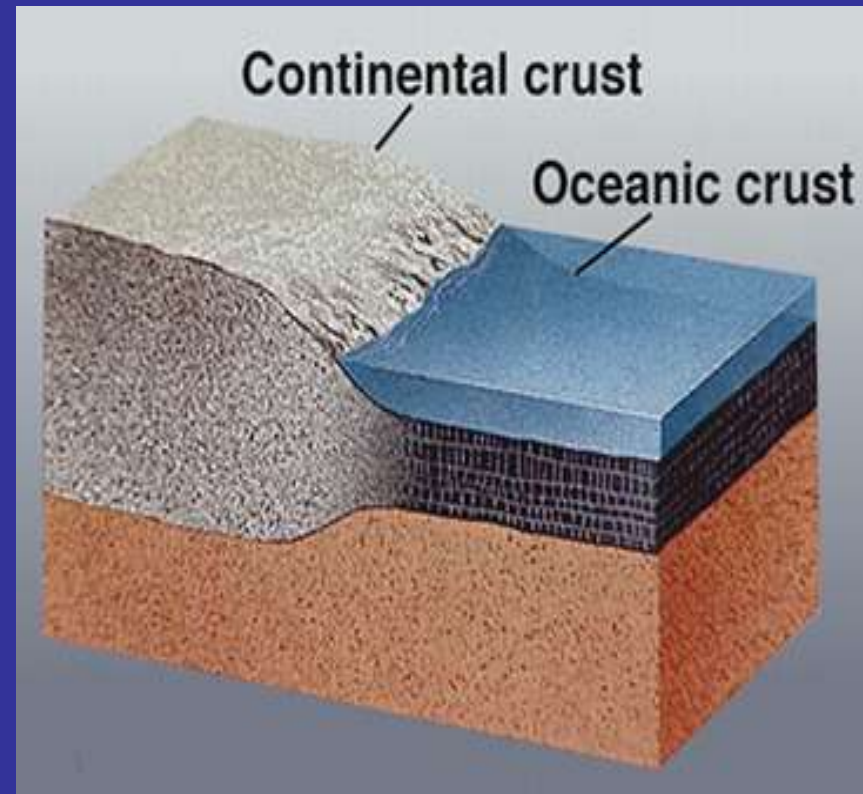
**These layers are then  
subdivided into smaller layers.**

# **CRUST:**

- **Is the outermost layer on the earth.**
- **Thickness varies. Under mountains it can be as thick as 40-70 km and less than 7 km under the ocean.**
- **It is the least dense of all the layers. (lightest layer)**
- **It is made up of silicon and oxygen.**

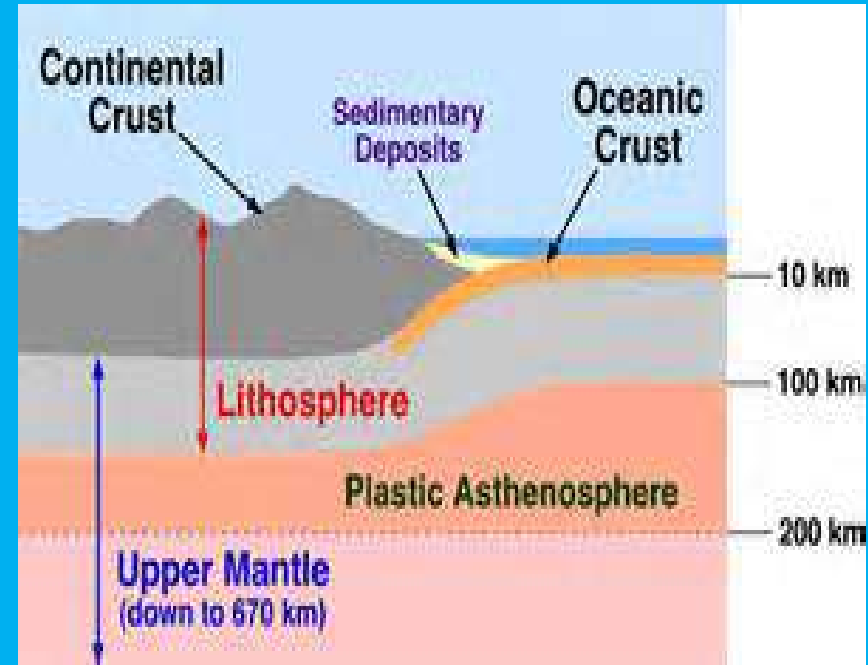
# 2 TYPES OF CRUST:

- Oceanic crust is very dense, made of Basalt.
- Continental crust is less dense, made of Granite.



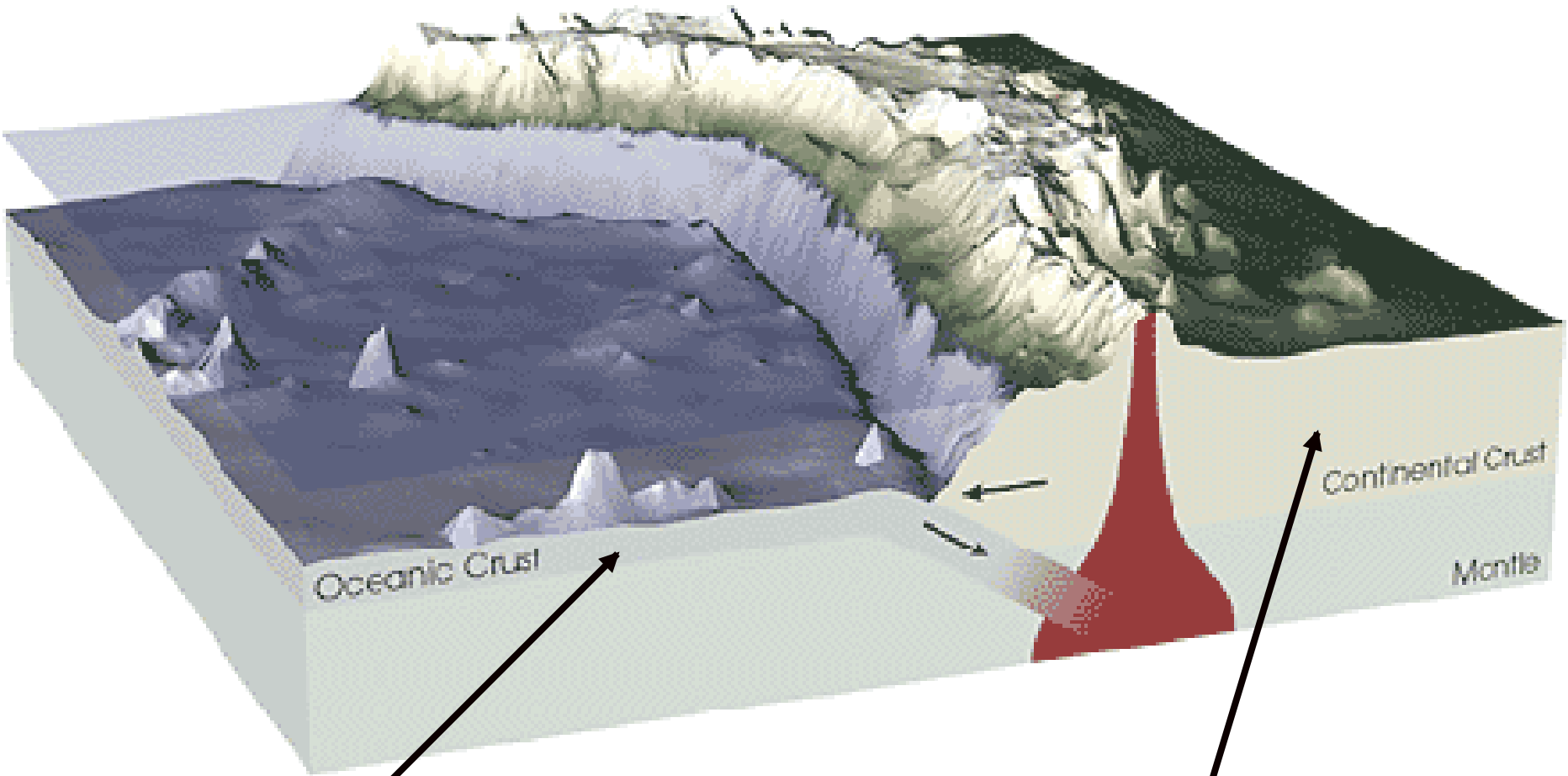
## Lithosphere:

- Made up of the earth's crust and very top part of mantle.



## Asthenosphere:

- Layer right below the lithosphere in the upper mantle. Not a liquid or a solid but like a thick paste.



Oceanic Crust

→

Continental Crust

Mantle

←

**BASALT**

**GRANITE**

# MANTLE:

- Located below the crust.
- It is the largest layer (about 2900 km thick).
- Hot soften rocks made up of more magnesium and iron.
- Density increases with depth due to increase in pressure.
- Remember less dense near the crust more dense near the core.

Look at the sub-layers of the mantle

## LITHOSPHERE:

- This is the “crunchy” layer of the Earth.
- It includes the crust and the very uppermost part of the upper Mantle

## ASTHENOSPHERE:

- Soft – can bend like plastic, layer in the upper portion of the mantle
- It is located right below the Lithosphere. Lithosphere floats on this layer (like jello)



# CORE: Located below the Mantle.

- It is divided into 2 layers

Outer Core

Inner Core

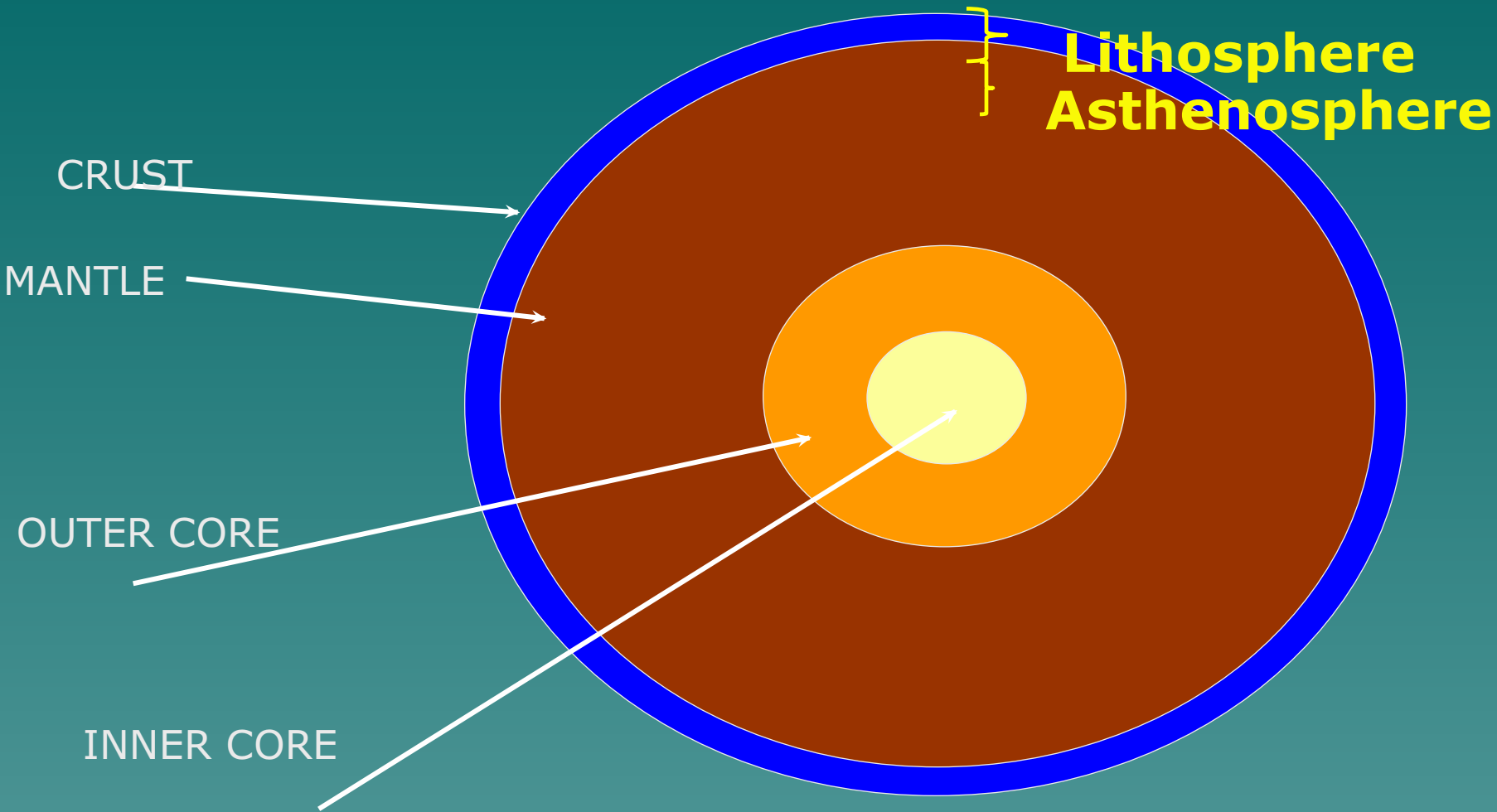


## Outer Core:

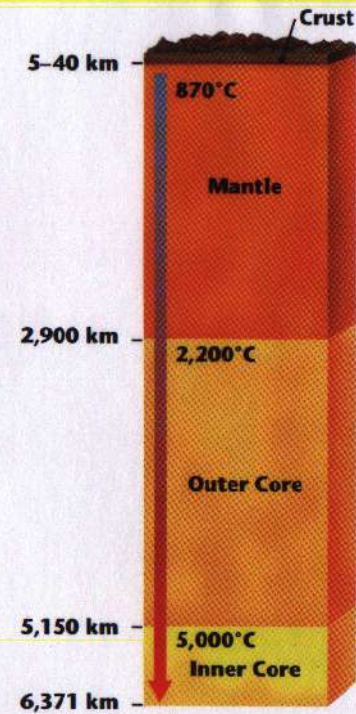
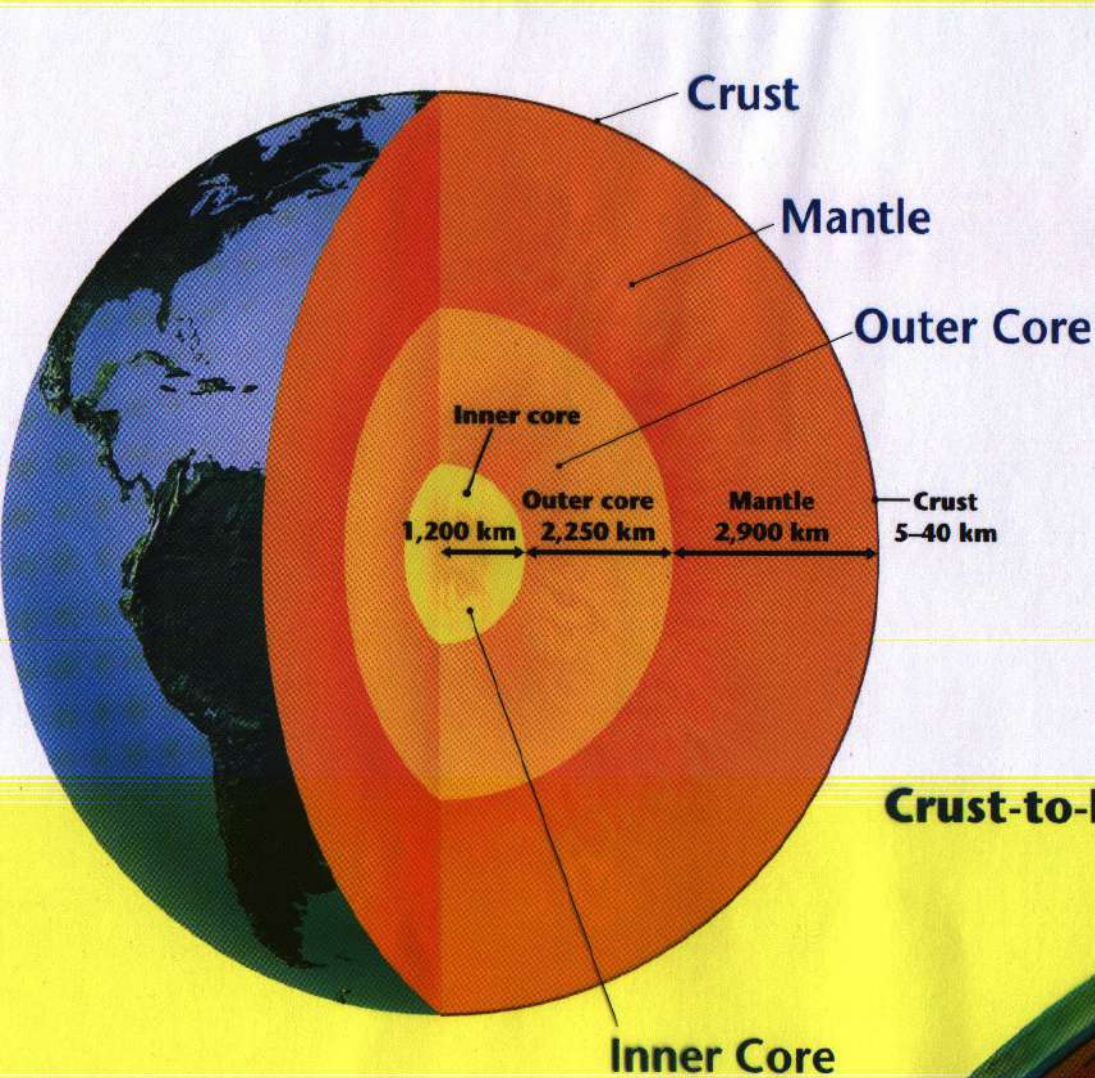
- is liquid and is made up of mostly iron (*easily magnetized*)
- The movement of materials in the liquid O.C. is inferred to be the cause of Earth's magnetic field!
- The O.C. is about 2300 km thick.

# **Inner Core:**

- **Is the center of the Earth – 2400 km in diameter.**
- **It's solid iron and nickel. Most dense layer (heaviest)**
- **The increased pressure causes the I.C. to be solid**

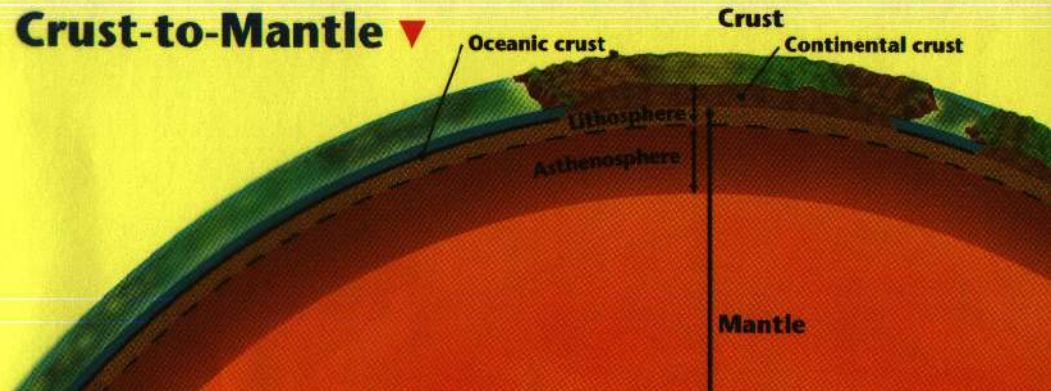


# 1 Exploring Earth's Interior



◀ Cross Section From Surface to Center

## Crust-to-Mantle ▼



In Review:

**1. What are the 3 main layers of the Earth?**

**Crust, Mantle, Core**

**2. Which layer is the least dense?**

**Crust**

**3. Which core layer is solid iron and nickel?**

**Inner core**

**4. What is the name given to the “crunchy” layer of the crust and uppermost part of the mantle?**

**Lithosphere**

**5. The motion in this layer is the reason Earth has a magnetic field.**

**Outer core**

