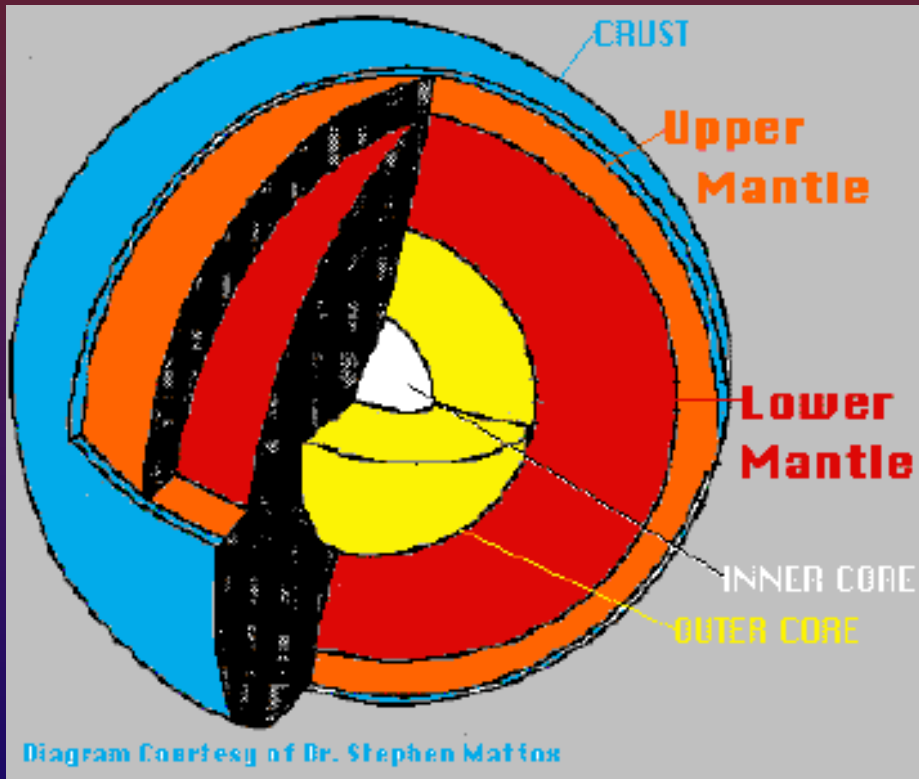


Earth on the Move

Structure of the Earth

Earth, Inside & Out



❖ The Earth is divided into three layers

1. Crust
2. Mantle
3. Core



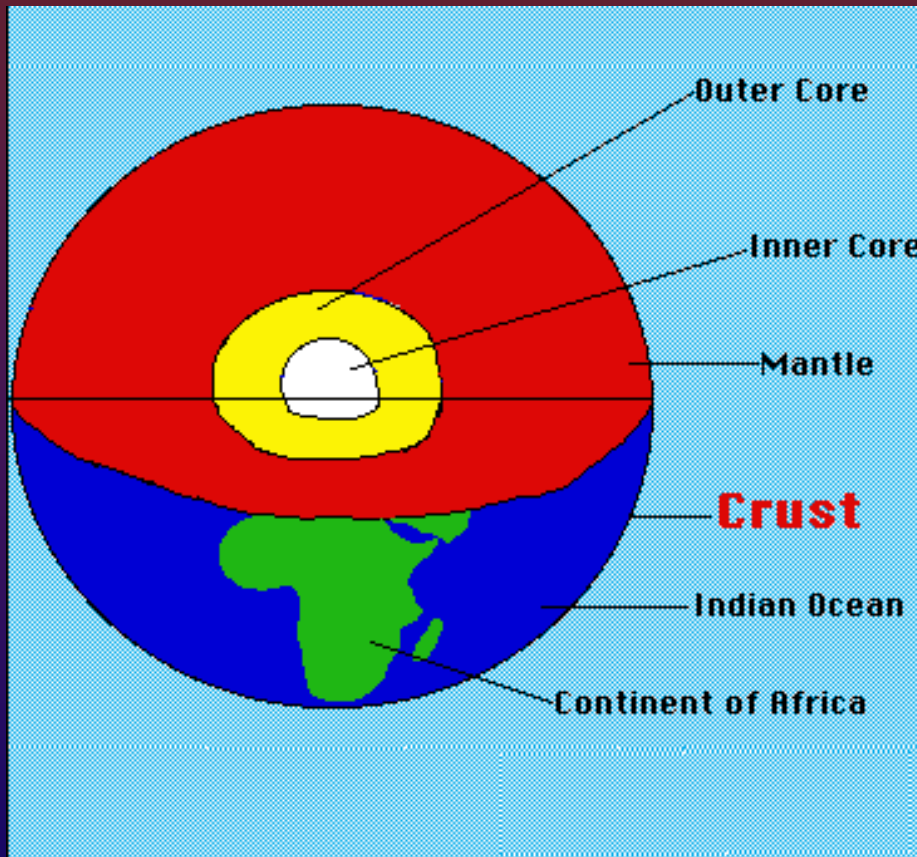
Brain Check

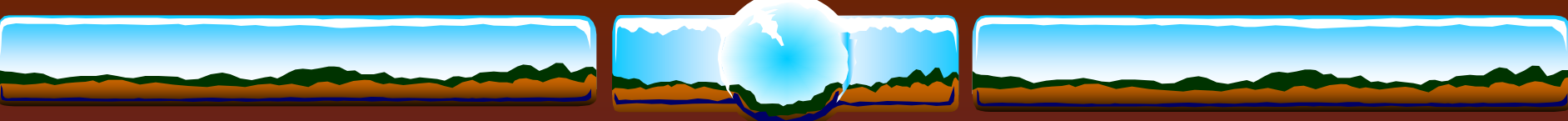
- ❖ Turn and tell your partner the three layers of the Earth.



Crust

- ❖ This is the outermost layer of the Earth.
- ❖ It is a thick, rocky skin.
 - ❖ If we think of the Earth as a billiard ball, this crust is as thin as a postage stamp stuck on a billiard ball.
 - ❖ At its thickest, which is under mountain ranges, the crust is only about 35km (22mi) thick.

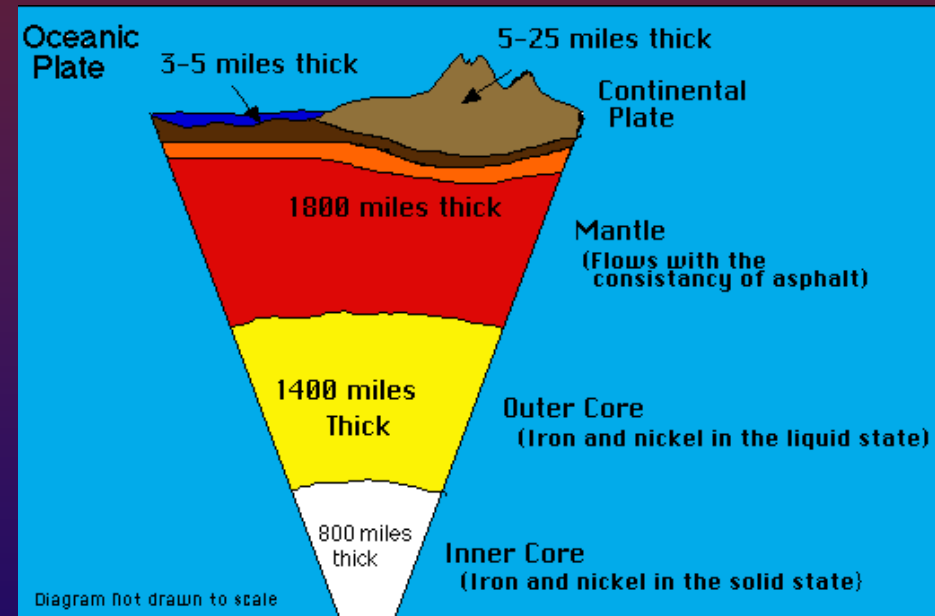




And what type of crust would you like with your Earth?

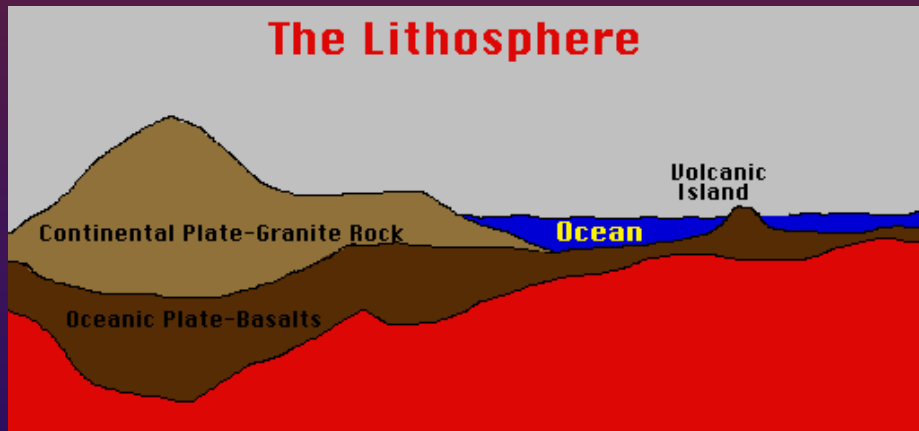
There are two types of crust :

1. Continental
2. Oceanic



Continental Crust:

The Lithosphere

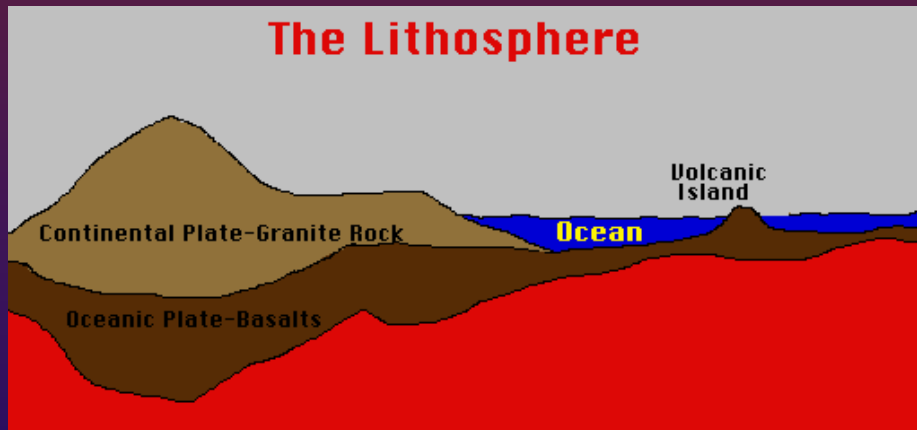


- ❖ Makes up the continents
- ❖ Contains light colored rocks such as granite.
- ❖ Floats high on the mantle
- ❖ 5- 35 km thick

Oceanic Crust

- ❖ Makes up the ocean floor
- ❖ Contains the dense rocks such as basalt
- ❖ Thinner than the continental crust
- ❖ 3-5 km thick

The Lithosphere





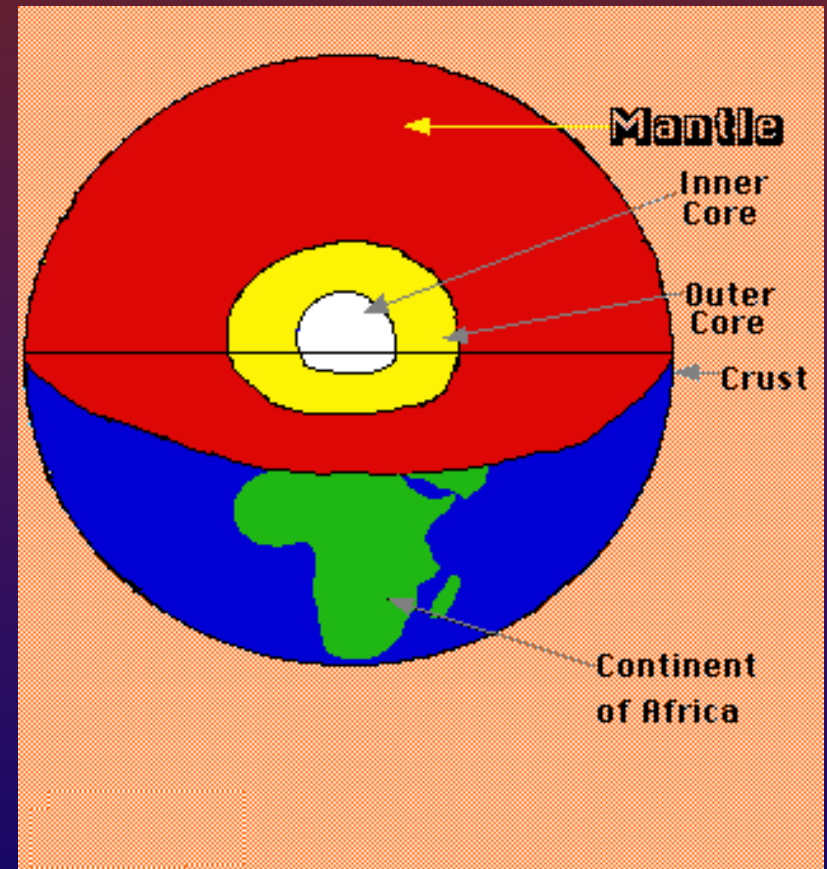
Brain Check

- ❖ Turn and tell your partner the two types of crust.

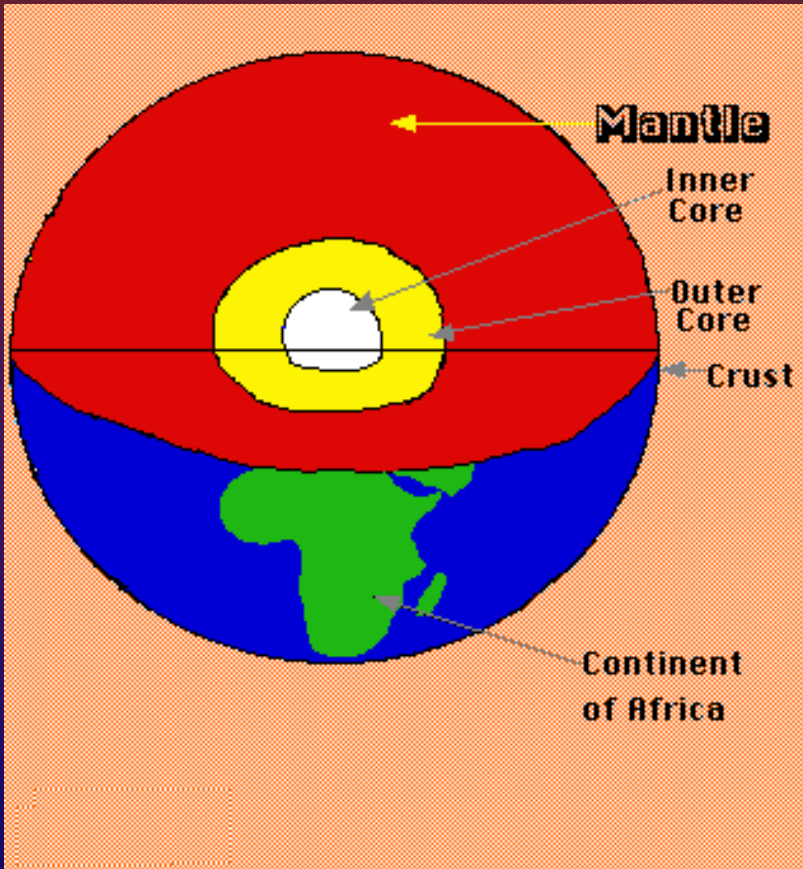


Mantle

- ❖ Made of solid rock.
- ❖ The Mantle is made of two zones
- ❖ About 2900 km thick



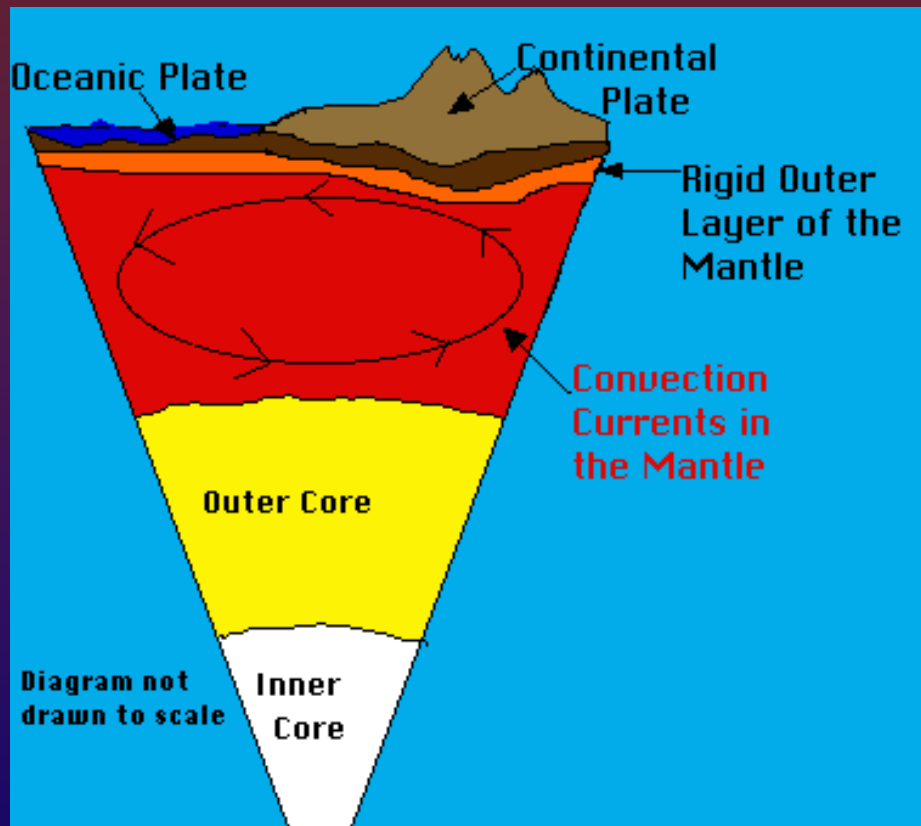
Mantle Zones



❖ Lithosphere

- ❖ Rigid outer shell of Earth
- ❖ Contains crust & upper mantle.
- ❖ The upper part of the lithosphere melts rocks, forming a substance called magma.

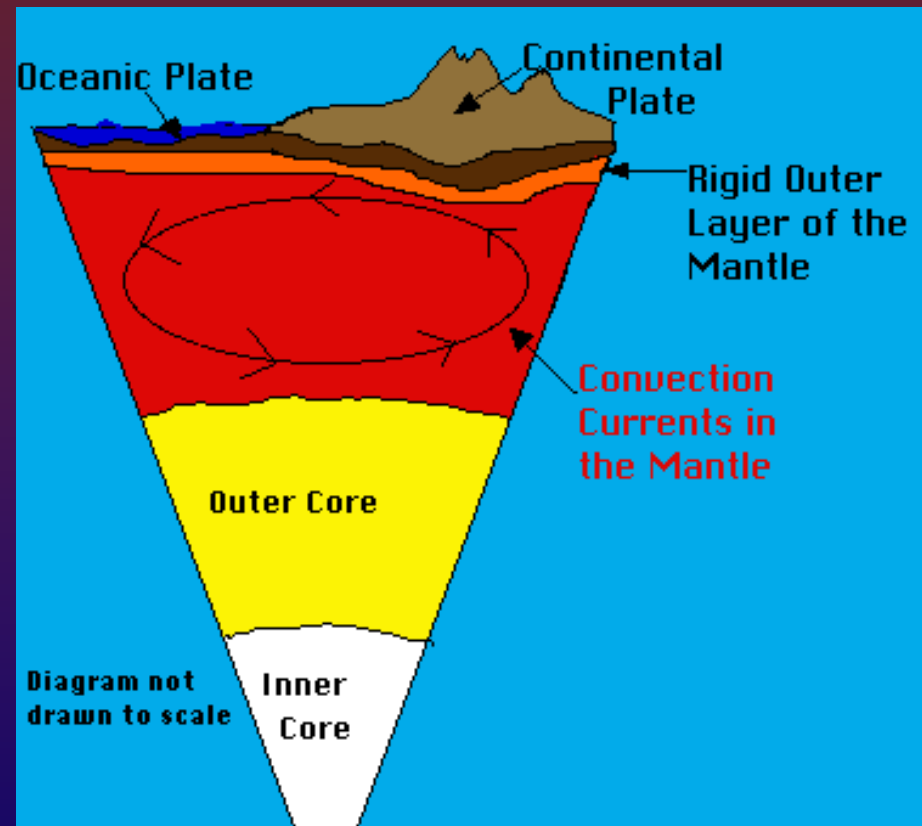
Asthenosphere



- ❖ Hot, weak zone directly under the lithosphere
- ❖ Flows at a very slow rate
- ❖ Convection currents occur here

Magma

- ❖ Magma (melted rock) moves like hot oatmeal.
- ❖ Uneven heating causes material in the mantle to constantly and slowly rise & fall in convection currents.
- ❖ Convection Current: process by which hot fluid rises to the surface, and then sinks again, like soup being heated in a saucepan





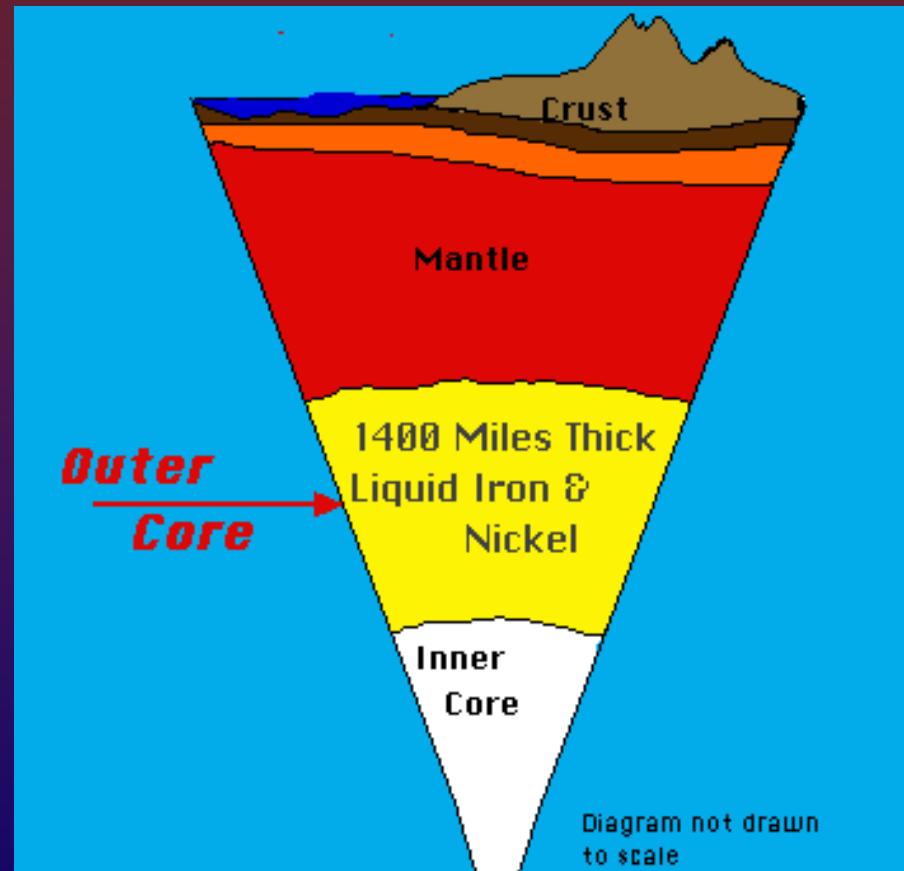
Brain Check

- ❖ On your whiteboard, answer the following questions:
 1. What is magma?
 2. What do convection currents do to the magma?
 3. Name the two layers of the mantle.

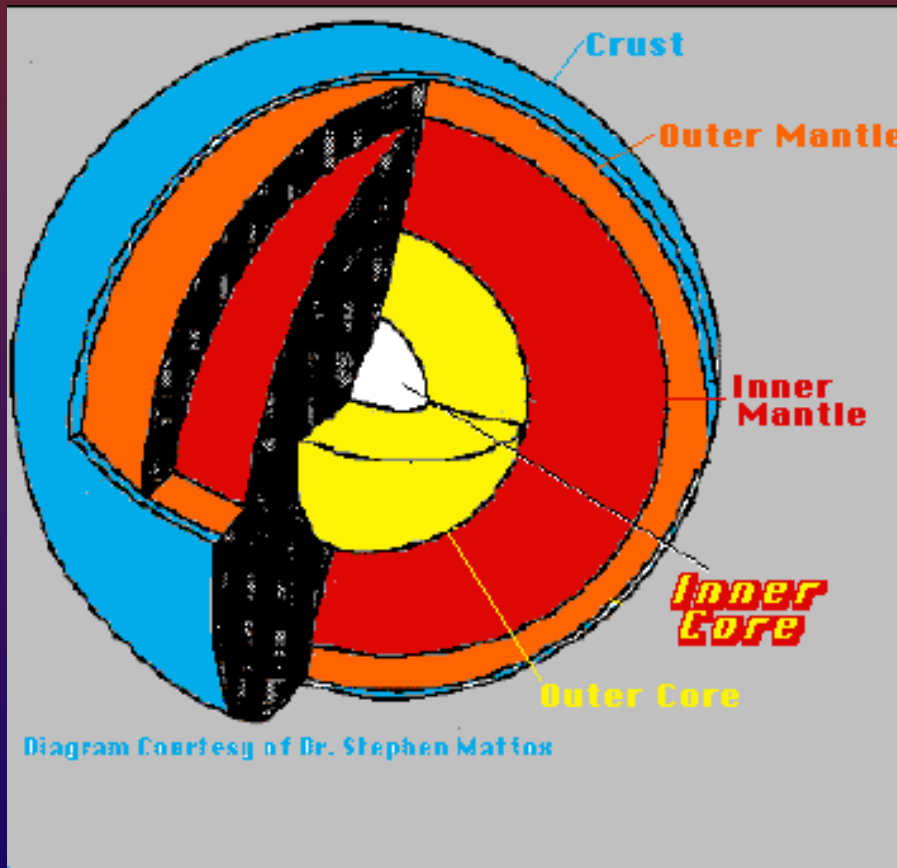


Core

- ❖ Deep within the Earth is the core
- ❖ The core is made mostly of nickel & iron
- ❖ Twice as dense as the mantle.
- ❖ Main source of heat that triggers the convection currents



The core is made of two layers



❖ Outer core:

- ❖ molten (liquid) iron & nickel
- ❖ Surrounds inner core
- ❖ This is where the heat comes from that generates the convection currents.
- ❖ About 2250 km thick
- ❖ Earth's magnetic field is generated by the electric currents in the outer core.

❖ Inner core:

- ❖ solid iron & nickel
- ❖ 1280 km thick



Brain Check

- ❖ On your whiteboard answer the following:
 1. What Is the composition of the inner core?
 2. What is responsible for the Earth's magnetic field?
 3. Draw a picture & name the layers of the Earth.