Why do continents drift around the planet?

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2. Through the rising and falling of the liquid inside the Earth
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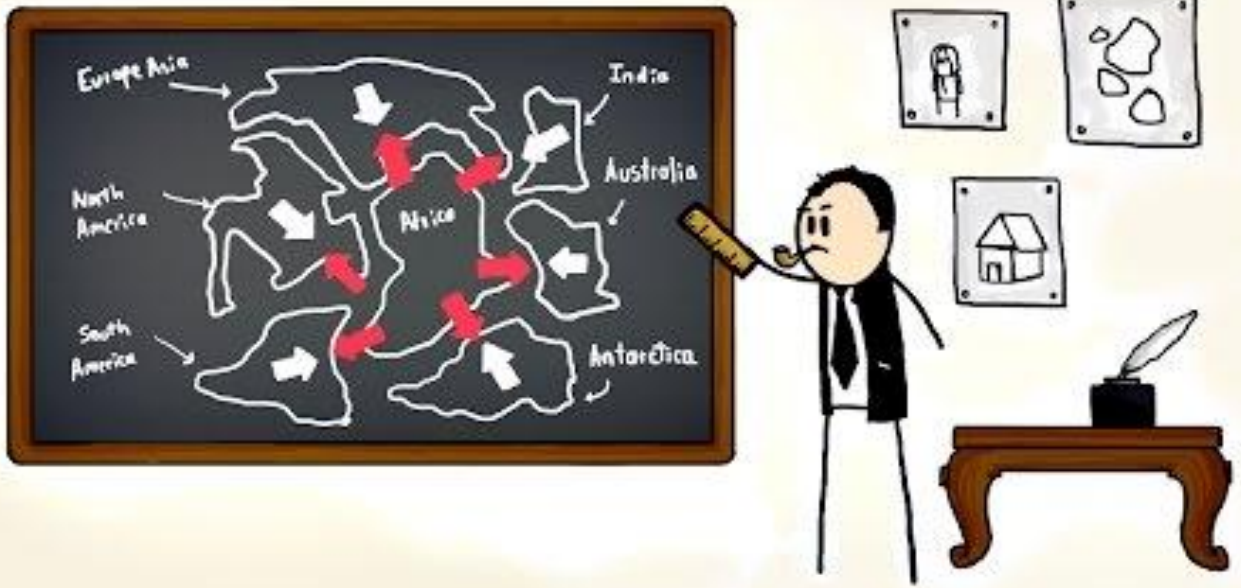

Europe Asia
India
Australia
North America
Africa
South America
Antarctica

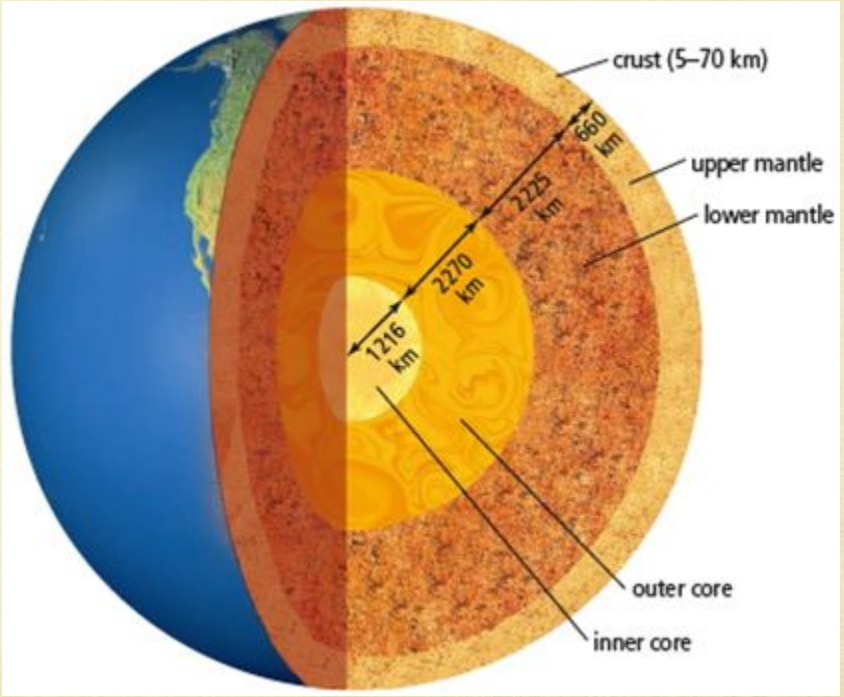
Layers of the Earth

Early Earth

- Scientists believe that Earth began as a **molten ball** over **4.5** billion years ago.
- As Earth cooled, the **less dense** materials (**lighter**) floated to the surface and the **more dense** (**heavier**) materials sank toward the interior.
- The less dense elements (ex. silicon and oxygen) floated to the top and formed the layer we know today as the **crust**.

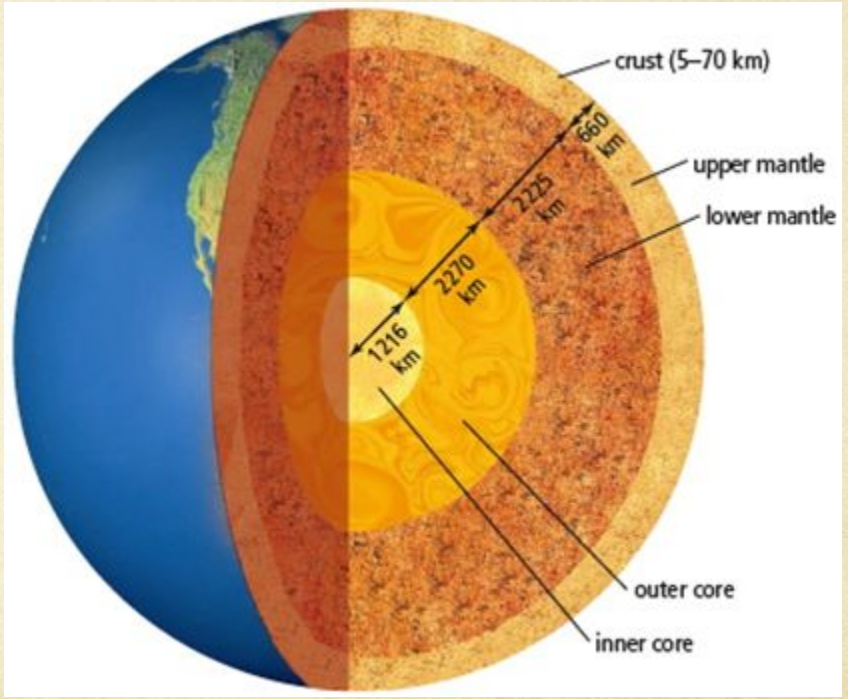
Layers of the Earth

- Crust
  - State: **solid**
  - Thickness: **5-70 km**
  - Composed of: **granite and basalt**



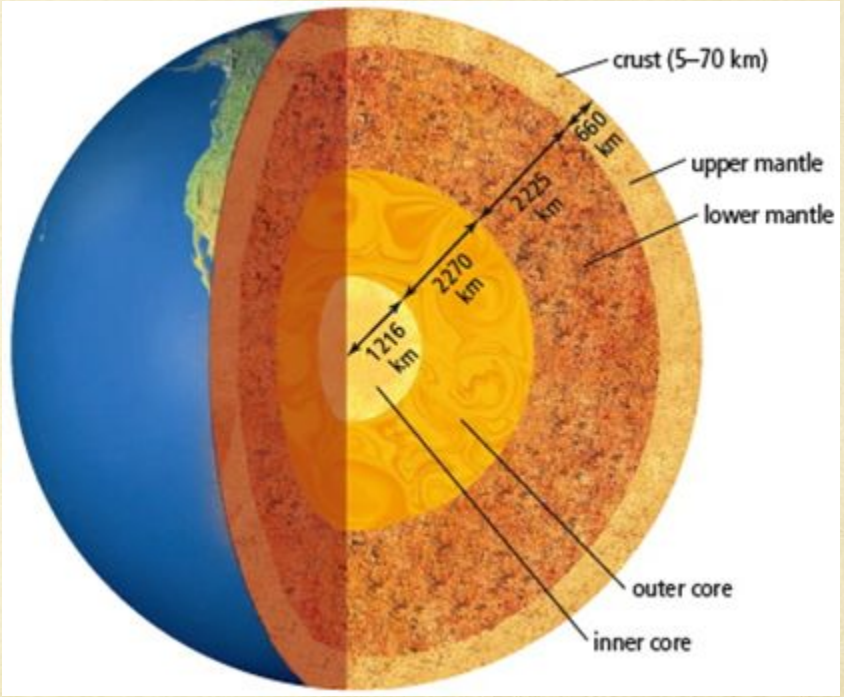
Layers of the Earth

- Mantle
  - State: **liquid**
  - Thickness: **2900 km**
  - Composed of: **molten rock containing iron and magnesium**



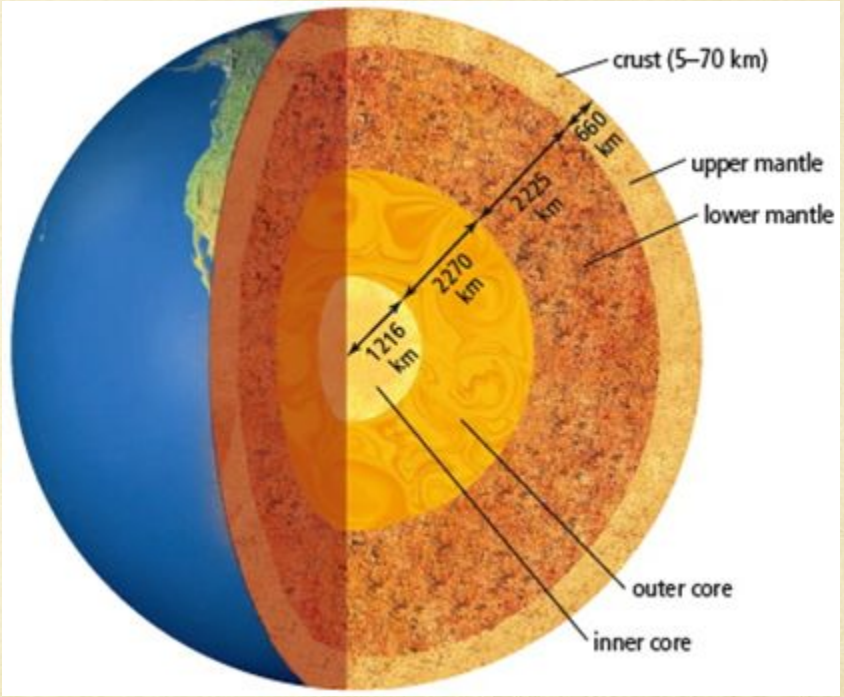
Layers of the Earth

- Outer Core
  - State: **liquid**
  - Thickness: **2300 km**
  - Composed of: **iron and nickel**



Layers of the Earth

- Inner Core
  - **Earth's center**
  - State: **solid (because under high pressure)**
  - Temperature: **5000 – 6000℃**
  - Thickness: **radius of about 1200 km**
  - Composed of: **mostly iron**



Layers of the Earth

Plate Tectonic Theory

- Earth's outer layer is comprised of several large, rigid but mobile chunks called **tectonic plates.**
- There are **12 major** tectonic plates that make up the crust.
- Divided into:
  - **Continental plates**
  - **Oceanic plates**

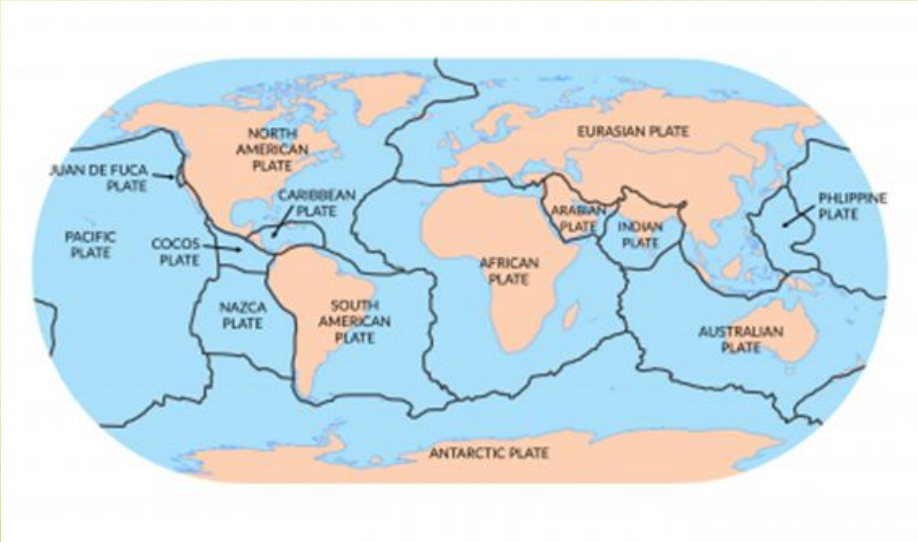
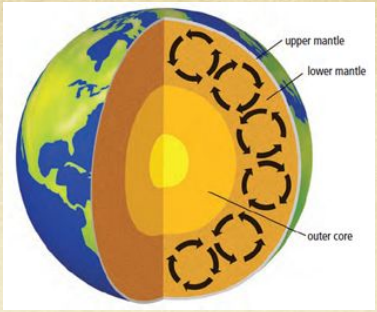
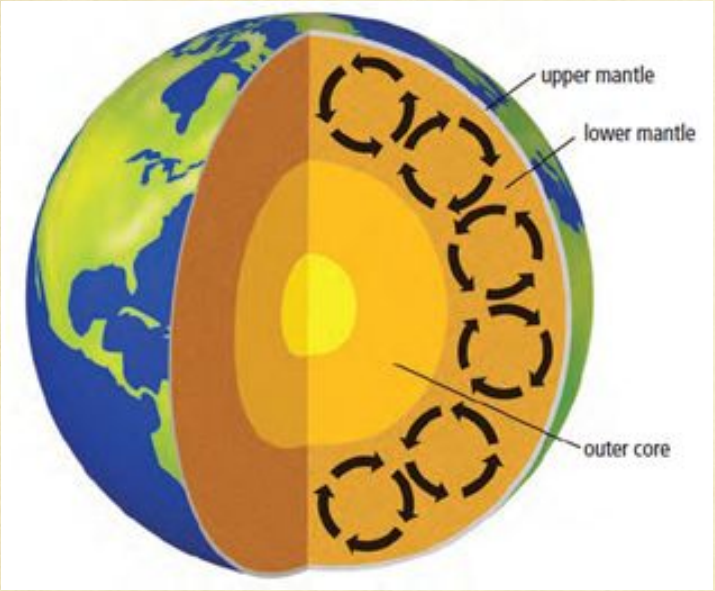


Plate Motion

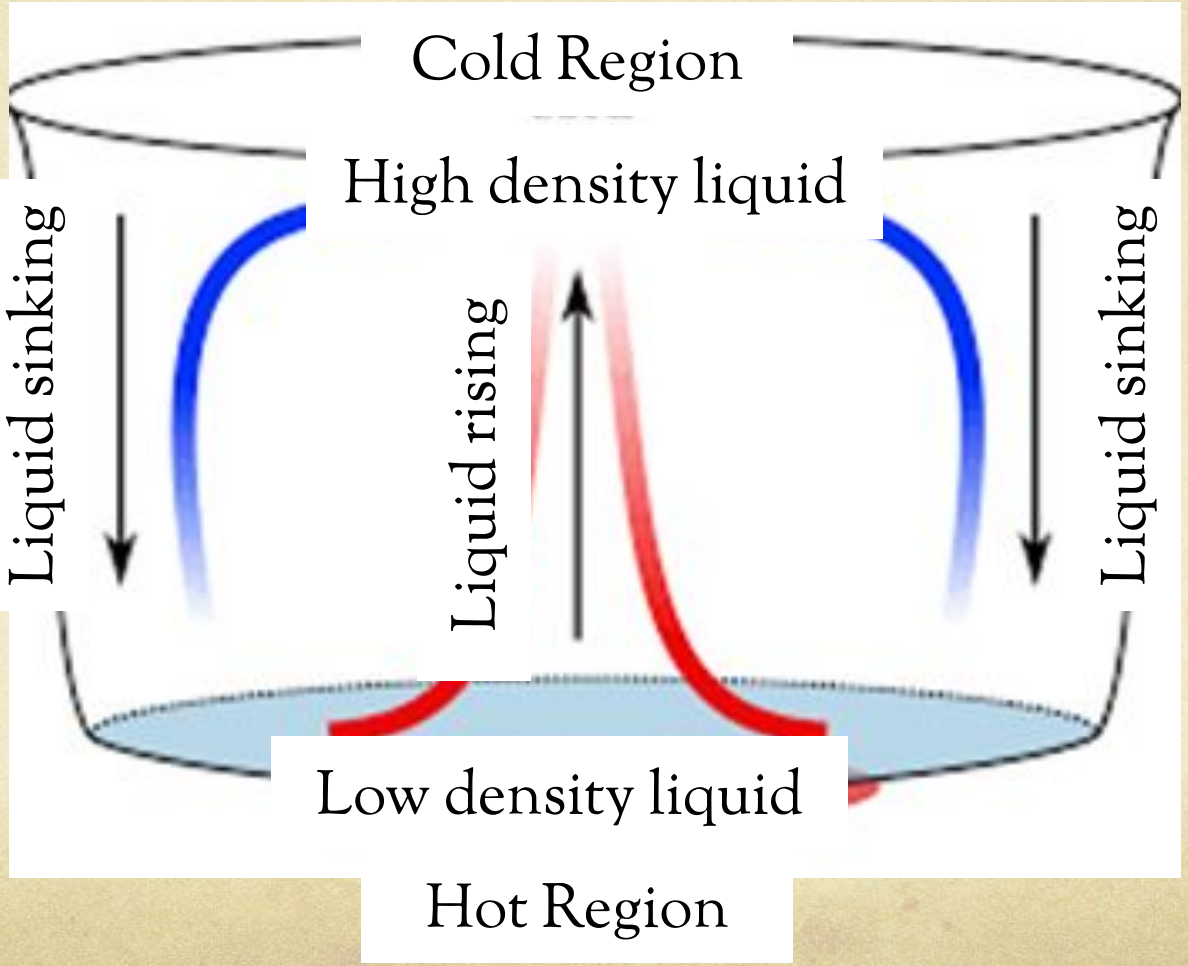


- After watching the video, write down any **observations** that you made.
- From what you have learned so far about KMT, provide an **explanation** of your observations.

Convection Currents



- The **liquid** in the mantle closest to the hot core is **heated** which makes it **less** dense.
- This low density fluid **rises** towards the crust where it is **cooled**.
- The **colder** liquid is now **more** dense and **sinks** again where it is **reheated**.
- This cycle continues and creates what we call a **convection current.** This convection is the **driving force** behind plate movement.


Cold Region
High density liquid
Liquid sinking
Liquid rising
Liquid sinking
Low density liquid
Hot Region