

Earth, Inside & Out Structure of the Earth Notes

The Earth is divided into three layers Crust, Mantle, Core

(a) Crust

- 1) This is the outermost layer of the Earth.
 - 2) This is the layer we walk on.
 - 3) It is a thick, rocky skin.
 - 4) At its thickest, which is under mountain ranges, the crust is only about 35km (22mi) thick.
- b) There are two types of crust
- 1) **Continental Crust:**
 - (a) Makes up the continents
 - (b) Contains light colored rocks such as granite.
 - (c) Floats high on the mantle
 - 2) **Oceanic Crust**
 - (a) Makes up the ocean floor
 - (b) Contains the dense rocks such as basalt
 - (c) Thinner than the continental crust

I) Mantle

- Hotter and denser than the crust because the deeper you go inside the earth, the temperature & pressure increases.
- Made of solid rock.

The Mantle is made of two zones

1) Lithosphere

- (a) Thin, uppermost part of the mantle; cooler & less rigid
- (b) Floats on the asthenosphere, and slides around very slowly.
- (c) The upper part of the lithosphere melts rocks, forming a substance called 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

2) Asthenosphere

- (a) Hot, weak zone directly under the lithosphere
- (b) Flows at a very slow rate

II) 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
- a) **Outer core:**
 - 1) molten & is responsible for the Earth's magnetic field.
 - b) **Inner core:**

1) solid