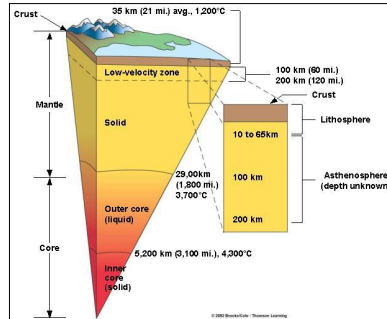
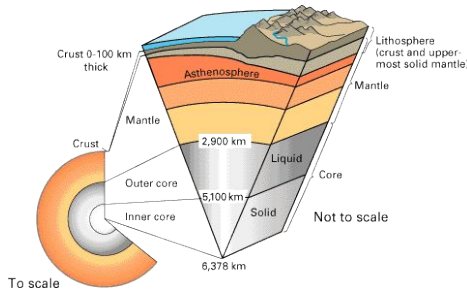


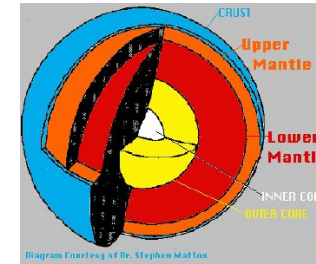
## Earth's Interior



## Layers of the Earth

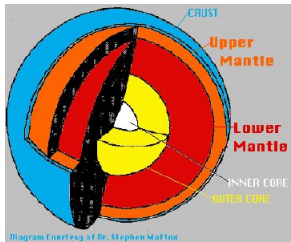


## The Four Layers



1. **crust** – relatively thin rocky outer skin.

## The Four Layers



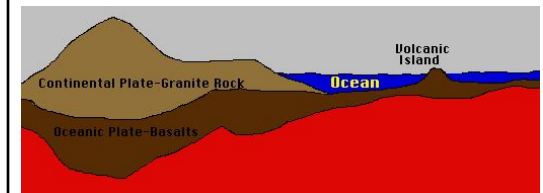
### Two Types of Crust

- A. Continental Crust**
- Made of many rock types
  - Average 35 kilometers (22 miles) thick
  - Less dense than oceanic crust

## Two Types of Crust

- A. Continental Crust**
- Made of many rock types
  - Average 35 kilometers (22 miles) thick
  - Less dense than oceanic crust
  - Mostly GRANITE
- B. Oceanic Crust**
- Igneous Rock: Basalt
  - 7 kilometers (5 miles) thick
  - More dense
  - Mostly BASALT

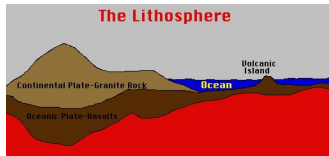
## The Crust



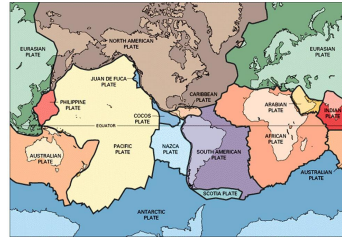
The **crust** is composed of two rocks. The **continental crust** is mostly **granite**. The **oceanic crust** is **basalt**. Basalt is much denser than the granite. Because of this the less dense continents ride on the denser oceanic plates.

## The Lithosphere

The crust and the upper layer of the mantle together make up a zone of rigid, brittle rock called the **Lithosphere**.

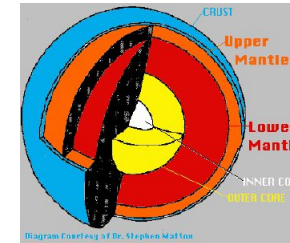


## The Lithospheric Plates



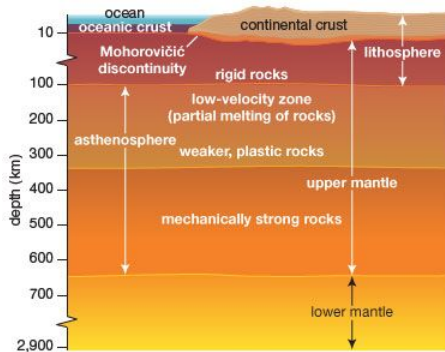
The crust of the Earth is broken into many pieces called **plates**. The plates "float" on the soft, semi-rigid asthenosphere.

## The Four Layers



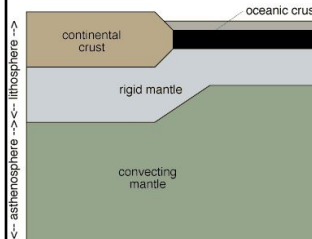
- 2. Mantle**
- Semisolid rock
  - Molten slush cable of slow movement over time
  - Most of earth's mass
  - Contains: Iron, Magnesium, Aluminum, Silicon, & Oxygen

Diagram Courtesy of Dr. Stephen Martin



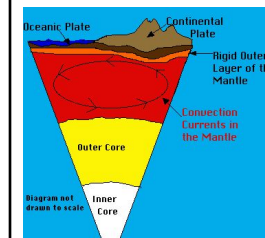
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## The Asthenosphere



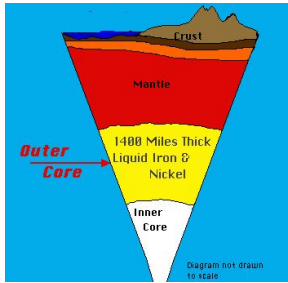
The **asthenosphere** is the semi-rigid part of the **middle mantle** that flows like hot asphalt under a heavy weight.

## Convection Currents



The asthenosphere "flows" because of convection currents. **Convection currents** are caused by the very hot material at the deepest part of the mantle rising, then cooling and sinking again --repeating this cycle over and over.

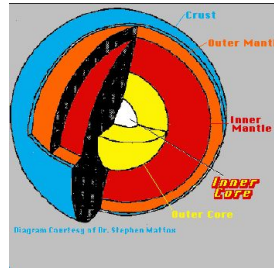
## The Four Layers



### 3. Outer Core

- Liquid
- Super Hot
- Mainly – sulfur and iron.
- Generates Earth's magnetic field
- 2270 Km

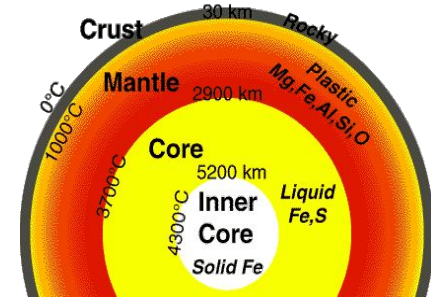
## The Four Layers



### 4. Inner Core

- Solid
- Iron & Nickel
- Very Hot
- High Pressure
- 1216 Km

## The Four Layers



## Eight Most Common Chemical Elements (%)

### WHOLE EARTH

Iron	33.3
Oxygen	29.8
Silicon	15.6
Magnesium	13.9
Nickel	2.0
Calcium	1.8
Aluminum	1.5
Sodium	0.2

### CRUST

Oxygen	45.2
Silicon	27.2
Aluminum	8.2
Iron	5.8
Calcium	5.1
Magnesium	2.8
Sodium	2.3
Potassium	1.7

## Features of the Crust

