**Earths Internal Structure**

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| The Earth is made up of three distinct layers: the **crust, mantle, and core**. |
| * **Crust:** The crust is the thin, solid, outermost layer of the Earth. The crust is composed mainly of [basalt](http://www.sciencelearn.org.nz/About-this-site/Glossary/basalt) and [granite](http://www.sciencelearn.org.nz/About-this-site/Glossary/granite) and, with the uppermost part of the upper mantle, is broken into tectonic plates. The crust is cooler and more rigid than the deeper layers. The thickness of the crust varies considerably. Beneath continents, it is about 30 km. Mountains have a corresponding root within the Earth, sometimes increasing the thickness of the crust to over 70 km. Oceanic crust is thinner than continents crust, usually 5-10 km thick, and is mostly composed of basalt. |
| * **Mantle****:** The mantle is denser than the crust. The upper part of the mantle is solid and, with the crust, forms the **lithosphere**. The lithosphere is brittle and breaks into the **tectonic plates**. The Earth temperature rises the deeper you get. The lower part of the mantle is partially molten, the [asthenosphere](http://geology.wr.usgs.gov/parks/misc/glossarya.html#asthenosphere). As rock heats up, it becomes pliable (like ‘silly putty’) and is hot enough to flow very slowly. The tectonic plates ‘float' on the asthenosphere. |
| * **Core:** The core of the Earth is made up of two distinct layers: a liquid outer layer and a solid inner core. The core is the source of the heat that results in the convection currents in the asthenosphere that moves the tectonic plates.   Tectonic plates are constantly on the move. The fastest plate races along at 15 centimetres per year while the slowest plates crawl at less than 2.5 centimetres per year. This is roughly the speed that fingernails grow at. |

**The Earth's Crust -** The crust consists of two parts: oceanic and continental crust.

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| **Data / Type** | **Oceanic crust** | **Continental crust** |
| Crust depth | thinner, 5 - 12 km | thicker, average 40km |
| Age | Younger rocks, less than 200 mya | Older rocks |
| density | more dense | less dense and buoyant |
| Rock type | Mainly basalt | Range of granites |

**Activity 1**

1) What is a theory? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) The thin outermost layer of the earth is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) The layer below the thin outermost layer is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4) Which of the following statements is true?

The mantle of the earth is made of solid nickel and iron.  
The crust of the earth is made of solid nickel and iron.  
The inner core is made of solid nickel and iron.

5) Label the diagram

