

Mantle

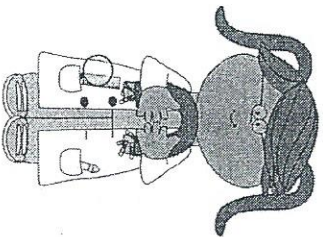
The mantle makes up about 80% of the volume of the Earth and about 68% of the Earth's mass. It begins at a region about 125 miles below the surface of the Earth and extends down to 1864 miles. The mantle is 1,720 miles thick. Scientists believe the mantle consists of elements silicon, oxygen, iron, and magnesium. They theorize that the upper region of the mantle can flow like a thick liquid. The high temperature (2,732 degrees Fahrenheit) and pressure (21 million psi) in the mantle allows the solid rock to flow slowly. Plasticity is the name given to a solid that has the ability to flow. At the top of the mantle is a region called the Moho. This area marks the boundary between the mantle and the crust.

Crust

The top layer of the Earth is called the lithosphere. This layer is the thinnest of all the layers of the structure of the Earth. The crust pressure is 1 million psi. Most of the crust cannot be seen. It is covered with soil, rock, and minerals. The crust is made up of three different rock types: igneous rocks, sedimentary rocks, and metamorphic rocks. The thickness of the Earth's crust varies a great deal between 3 miles and 42 miles. The crust under the surface of the ocean is called oceanic crust. This is the region of the crust where it is the thinnest. Oceanic crust is made up of basalt. The other type of crust, the continental crust, can be found under the continents. Continental crust is primarily composed of granite. The average temperature is 50 degrees Fahrenheit.

Inner Core

The inner core consists of the elements iron and nickel. The temperature in this region reaches 9,000 degrees Fahrenheit. Under normal circumstances with these high temperatures, nickel and iron would easily melt. The inner core, however, is under such great pressure - 54 million psi - that it pushes the particles of iron and nickel together to form a solid. Scientists theorize that the iron core of the Earth may explain the existence of the magnetic fields around the Earth. The inner core is 730 miles thick.



Outer Core

The outer core consists of the elements iron and nickel. The outer core is part of a two-part core system. Scientists theorize that this region of the core is a liquid. The liquid nature of this layer is why scientists separate the core into a two-layer system. The outer core is about 1,360 miles thick and 46 million psi. Scientists think that this layer is probably composed of mostly nickel. The temperature of the outer core is about 6,870 degrees Fahrenheit.

