The Layers of Earth
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1 We know that Earth's surface has areas of water and land, but have you ever wondered what is deep inside this intriguing planet? Earth is full of surprises. If you were able to cut a section out of this ball of rock, you would see that it has three distinct layers. The crust, mantle, and core compose the layers of Earth.

2 The first of these three layers is called the crust. It is the layer that we live on. The crust, consisting of the continents and the ocean basins, is the thinnest of Earth's layers. It ranges in thickness from 35-70 km thick under the continents to only 5-10 km thick under the oceans.

3 The crust and the mantle that lies below it are less dense than the core of Earth. Both the crust and the mantle are made mostly of silicates, minerals rich in the elements oxygen and silicon. The core contains the very dense iron and nickel elements. The explanation for Earth's layers goes back to its formation into a solid planet. As Earth cooled, the less dense elements of the crust and mantle rose to the surface, separating into layers around the innermost, dense core.

4 As one travels down through Earth's layers, there are increases in both temperature and pressure, which are due to the mass of the overlying layers of rock. The mantle is the second layer of Earth. The upper portion of the mantle is mostly made of solid rock just like the crust above, but some of the upper mantle is semi-molten and able to flow like a thick, gooey syrup. This allows the rigid, crustal plates resting on the upper mantle to float like giant pancakes. Even though people can't feel it, the plates are slowly moving all of the time. The mantle stretches down into Earth for 2,900 km. Due to greater pressure down low, the lower mantle remains in a solid state of matter even though it is very hot.
In the center of Earth is the core, consisting of two layers: the inner and outer core. The entire iron and nickel core is extremely hot, so it is not surprising to learn that the outer core is in a molten state. However, the inner core’s iron and nickel are solid. This seems impossible, but the inner core is kept solid by the intense pressure of all the layers above it. It spans a distance of 2,400 km and is surrounded by the outer core, which is about 7,000 kilometers in diameter. The inner core plays an important role in the process that generates Earth’s magnetic field.

The three layers of Earth contribute to the uniqueness of this planet. The crust, mantle, and core are all distinctive, varying in composition, temperature, pressure, and state of matter. From a solid metal center, surrounded by a liquid core, to a sea of soft putty-like rock mantle, topped with a solid, rock crust, there is no planet like Earth in the entire solar system.
1  What is the correct order of the layers of Earth, starting deep in the center?

A  Inner core, outer core, mantle, crust
B  Crust, mantle, outer core, inner core
C  Mantle, outer core, crust, inner core
D  Outer core, inner core, crust, mantle

2  Which statement best describes the crust?

A  The crust is divided into sections and made of some of the densest rocks found in Earth.
B  It is the outermost layer of Earth, composed of solid rock, and divided into sections called plates.
C  The crust is made out of solid nickel and iron.
D  The crust is made of molten rock that flows like a thick, gooey syrup.

3  The core of Earth is made out of iron and nickel. The outer core's temperature is so hot that it melts the metal. The inner core is solid metal. What causes these differences?

A  The outer core is 2,300 km thick.
B  The inner core is kept solid by the intense pressure of all of the layers above it.
C  The inner core has a cooler temperature allowing the metal to remain solid.
D  The inner core is made of a different metal.
This layer of Earth is divided into two sections, both of which primarily contain silicate minerals. Part of one of the sections is able to flow like a thick fluid. What is this layer known as?

A  Outer core  
B  Mantle  
C  Inner core  
D  Crust  

Complete the following analogy:

Earth's inner core:_____ as Earth's outer core:mantle  

A  magnetic  
B  atmospheric  
C  solid  
D  thermal