Earth is divided into different layers. These layers of Earth are divided into sections based on physical and chemical composition. There are 3 main physical layers on Earth. These are the crust, mantle, and core. The crust is outermost layer of Earth. This is the thinnest layer of Earth. It stretches from 5 km below Earth’s surface to 70 km below Earth’s surface. The mantle sits below the crust of Earth. It makes up around 84% of Earth. The mantle stretches from 70 km to 2900 km below Earth’s surface. The layer below the mantle is the core. The core is found in the center of Earth. It is made up of nickel and iron which is responsible for the Earth’s magnetic field. The core is also very hot. The core extends from 2900 km to around 5800 km below Earth’s surface. As you move through these layers, the density of the material increases. Therefore, the core is more dense than the mantle and the crust while the crust is less dense than the core and mantle.

These layers are further divided based on chemical composition. The crust can further be divided into the continental crust and oceanic crust. Oceanic crust is found under the ocean floor while continental crust is found under the continents. Oceanic crust is more dense than continental crust.

The mantle is divided into three more layers: lithosphere, asthenosphere, and mesosphere. The lithosphere consists of part of the crust and the upper mantle. It contains tectonic plates. The asthenosphere consists of the middle mantle. The asthenosphere is the plastic like. Because of this is can flow slightly and create convection currents. Below the asthenosphere is the mesosphere, which consists of the lower portion of the mantle. The core is further divided into the outer core and inner core. The outer core is solid, but the inner core is liquid due to the immense amount of pressure it is under. The inner is the innermost layer of Earth.
Because of the way Earth is structured, the Earth’s tectonic plates are able to shift and move. The core of Earth is very hot. The heat from the core will radiate to other layers. As the heat from the core reaches the asthenosphere, it begins to heat the plastic-like contents. As the asthenosphere is heated, the material on the bottom of the asthenosphere will rise to the top of the asthenosphere since it is less dense. As the heated material reaches the top of the asthenosphere, it is farther from the core or the heat source. Therefore, it will cool down and begin to sink. The material is now more dense. This creates what we call a convection current.

Remember: The lithosphere is located above the asthenosphere. Therefore, the convection currents moving in the asthenosphere will cause the plates above it in the lithosphere to move. Think about currents in the ocean. If there is a current moving under the water in the ocean, it can move any boat that is on top of it. This is exactly how the plates move because of convection currents. Because of this movement of plates, scientists came up with the theory called Plate Tectonics.
1. The lithosphere is broken down into separate pieces. What are these pieces called?

2. Explain how convection currents work.

3. What two layers is the core divided into?

4. What two elements are found in the core?

5. How are the oceanic and continental crust different?

6. What are the three layers in the mantle?

7. Where do convection current occur?

8. What are the 3 main layers of Earth?

9. What is the outermost layer of Earth?

10. List the following layers in order from outermost to innermost layers: asthenosphere, mesosphere, inner core, lithosphere, and outer core.

11. How are the inner and outer core different?
1. Which of the following is false about convection currents?
   a. Heated material rises because it is less dense.
   b. Cooler material sinks because it is less dense.
   c. The heat that powers convection currents is made in the core.
   d. Convection currents occur in the asthenosphere.

2. Which of the following is correct about the layers of Earth?
   a. The crust is divided into the inner and outer core.
   b. The mantle is divided into the oceanic and continental crust.
   c. The lithosphere is made up of the lower crust and upper mantle.
   d. The mesosphere is where convection currents occur.

3. The lithosphere contains
   A. mountains  
   B. plates  
   C. convection currents  
   D. core

4. Convection currents flow in the
   A. mid-Atlantic ridge  
   B. asthenosphere  
   C. Outer core  
   D. lithosphere

5. Which of the following is made up of the upper mantle and crust?
   A. Lithosphere  
   B. Asthenosphere  
   C. Core  
   D. Crust

6. Which of the following does NOT accurately describe the core of Earth?
   a. The core is divided into the inner and outer core.
   b. The core gives Earth its heat.
   c. The core is powered through solar flares.
   d. The core has the most pressure of all the layers of Earth.

7. Which of the following makes up the core of Earth?
   a. Basalt and Iron  
   b. Iron and Nickel  
   c. Granite and Basalt  
   d. Iron and Granite

8. Which of the following is responsible for the movement of plates?
   a. Convection currents  
   b. Lithosphere  
   c. Inner core  
   d. Plate tectonics

9. Which of the following are the three main layers of Earth?
   a. Core, mantle, inner core  
   b. Core, crust, lithosphere  
   c. Core, crust, mantle  
   d. Asthenosphere, inner core, crust

10. Which of the following is the crust divided into?
    a. Continental and oceanic  
    b. Continental and convection currents  
    c. Oceanic and lithosphere  
    d. Inner core and outer core

11. Which of the following are found in the mantle?
    a. Asthenosphere, lithosphere, mesosphere  
    b. Continental crust, oceanic crust, inner core  
    c. Asthenosphere, continental crust, outer core  
    d. Outer core, inner core, lithosphere

12. The core gives off _____________ to the rest of the Earth.
    a. Heat  
    b. Convection currents  
    c. Tectonic plates  
    d. Theory of plate tectonics