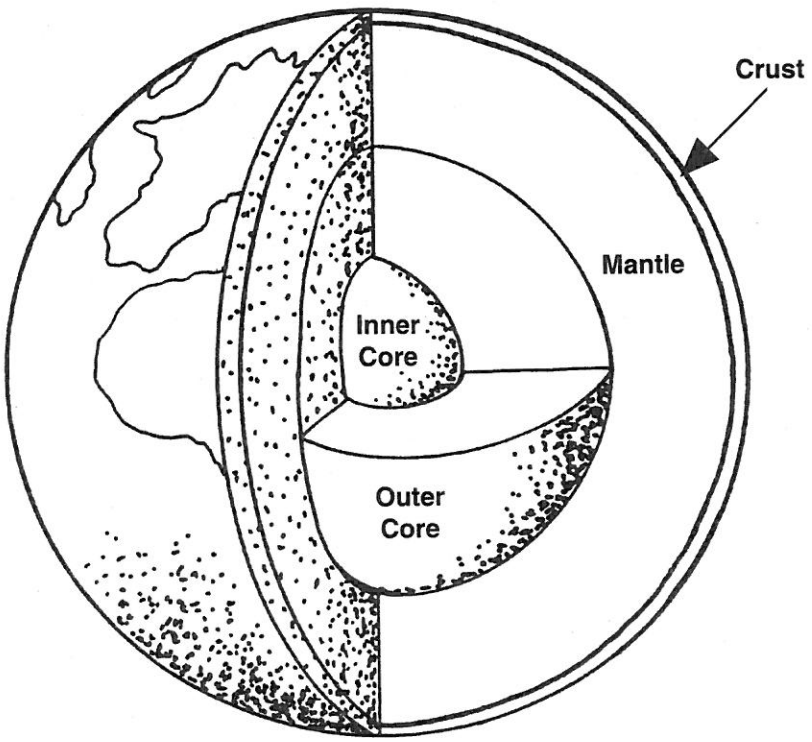
How Earth's Plates Move

The plates that make up the earth's surface are in constant motion. They move very slowly, however. They will move from 2 to 15 centimeters (cm) in a year. Look at a metric ruler. Find 2 cm. Find 15 cm. You can clearly see that the plates do not move very far in one year's time. Seeing the earth's plates move would be very difficult. They move at about the same rate of speed that your fingernails grow. Can you see your fingernails growing? Of course not! Scientists have developed very special equipment that can measure the movement of the earth's plates.

While the rate of movement is slow, it is also constant. Scientists believe that our oldest rocks may have circled the earth 11 times in the last three or four billion years.

The plate movements that cause earthquakes come in three forms. One type of movement is called convergent. That's when two plates bump into each other head to head, or they collide. Another type of movement is called divergent. In this case the plates are spreading apart. The last type of movement occurs when plates slide past each other. This is called lateral movement.

Scientists believe the earth's plates are moving on a semi-solid molten substance that makes up the middle layer of the earth. The earth's crust and the area of semi-solid rock that the crust floats on is called the lithosphere. Below the lithosphere is the middle region of the earth that we call the mantle. The mantle ranges from about 50 or 100 kilometers (km) below the earth's surface to 2,900 km deep. Finally, there is the earth's core. The outer core is believed to be liquid. The inner core is thought to be solid and to be made up mostly of iron and nickel.



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Name _____ Date _____

For the student:

1. How fast do the earth's plates move?

2. What produces the build-up of energy that causes an earthquake?

3. What are the three plate movements called?

4. What is the inner core of the earth made of?

5. Which area of the earth is thought to be semi-solid?

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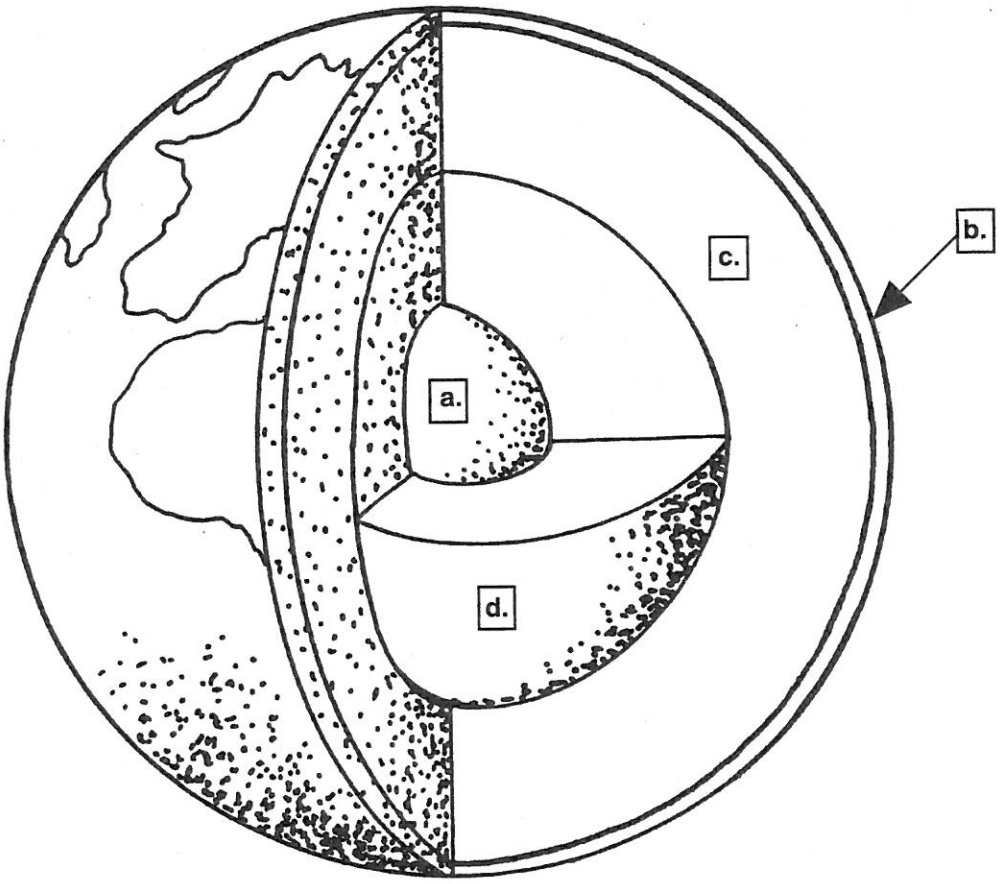
Layers of the Earth

1. Color the layers of the earth.



2. Identify the layers of the earth.

a. _____ b. _____

c. _____ d. _____

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