

## Playdough- Layers of the Earth

### Supplies Needed:

- 2 cups all-purpose flour
- 1½ cups warm water
- Mixing Bowl
- 2 tablespoons cream of tartar
- Food coloring
- Mixing spoon
- 2 tablespoons vegetable oil
- ½ cup salt

### Instructions:

1. In a bowl, mix flour, cream of tartar, salt, and oil.
2. Add food coloring to the water, then add the water to the dry mix.
3. Stir mix with spoon until it becomes a doughy mixture.
4. Allow dough to cool, take out of bowl, and knead with your hand (if it remains sticky, add more flour).
5. Repeat steps 1-4 until you have four different colors.
6. Begin forming a sphere of playdough. This is the **inner core**.

The inner core is the most center layer, it is also the hottest layer (about 9000 degrees Fahrenheit)! It is 800 miles thick. Pressure is 3 Million times more than what you feel from the air. Because of this pressure, if you were ever to get down into the inner core you would be squished to the size of a pea!

7. Cover this layer with a thicker layer of a different colored playdough. This is the **outer core**.

The outer core is mainly composed of metals like iron and nickel. It is so hot that the metals are liquid! This layer is 1400 miles thick.

8. Use the third color of playdough to create a third layer. This is the **mantle**.

The mantle is the thickest layer of the earth. It is 1800 miles thick! Rocks that make up the mantle flow like a thick liquid because of the large temperature difference. The mantle temperature ranges from 1600 to 4000 degrees Fahrenheit. This flow is responsible for the movement of plates in the crust layer of the earth.

9. Lastly, form a very thin layer on top of your last layer with the last color. This is the **crust**.

The crust is where we live! It is composed of many sheets. These pieces are called plates and they can move around and collide with each other. If a plate gets stuck, the rock can break and cause an Earthquake. The crust is the thinnest layer of the earth. The crust is about 25 miles thick if you are standing on land (like you are now). If you were at the very bottom of the ocean, the crust would only be 3-5 miles thick! (The ocean is VERY deep!) The temperature in the crust changes a lot. It is cool on the top where the air meets the land, but at the very bottom of the crust it can get up to 1600 degrees Fahrenheit which is hot enough to melt rocks!

Instructions originally from theimaginationtree.com, earth layer facts obtained from <http://volcano.oregonstate.edu/earths-layers-lesson-1> and photo obtained from spaceplace.nasa.gov

## Earth's Layers

