

## Modeling Earth's Interior

**Overview:** Understanding the interior structure of the Earth can be a challenging skill for many concrete learners to master, due to the inability to experience these structures first hand and typically seeing them through images or diagrams. Hands-on learners can better learn about the basic structures of the Earth interior by building models of these structures that they can see, touch, and interact with along with exposure to familiar objects (such as fruit) that can be used to represent/model the interior of our planet.

**Procedure:** Introduce a globe to students, along with a round piece of fruit with a core such as a peach or plum. Discuss with students how these two objects are similar because we can observe the outside surface of both the Earth and the fruit by touching and by sight, but that there are also parts to the Earth and the fruit on the inside that we cannot observe. The peach/plum will serve as the model for examining the Earth's interior.

Have students handle the globe, touching the surface, and tell them that the surface of the Earth that we can touch and see on the outside is called the "crust". Have students repeat this vocabulary word verbally, through AAC, ASL, or their primary mode of communication. Compare the globe to the peach/plum and show how the exterior skin of the fruit is similar to the crust of the planet Earth.

Then take your piece of fruit and slice it in half, revealing its interior structures. Show the cross-section of the fruit to the students, have them observe the different parts, and describe to them how much like this peach/plum the Earth's interior has layers that are different from one another. The first part students will likely notice is the core, so begin by labeling/identifying this structure as the "core" and discuss how the Earth has a core as well that is at the center of the planet. Students should use the vocabulary word "core" using their primary communication modality.

After introducing the core, direct students' attention to the fleshy portion of the fruit between the core and skin/crust. Identify this structure as the "mantle". Discuss how inside the Earth, there is a structure now as the "mantle" that is between the crust and the core, much like the fleshy part of the fruit is between the skin and the core. Have your students observe/investigate this structure and its position in the interior of the fruit. Have students use the word "mantle" through their primary communication modality to label this structure/layer.

Following the investigation of the interior of the fruit and the comparison to the interior of the planet, provide students with stickers or labels with "crust", "mantle", and "core" written on them. Have them label either the structures of another piece of fruit modeling the Earth or have them label a traditional diagram of the Earth's interior structures using the stickers.

**ASOL Covered in this Activity:**

**5S-ESS6:** The student will investigate and understand how Earth's surface is constantly changing. Key concepts include:

d) the basic structure of Earth's interior.

**Materials Needed:**

- Globe
- Fruit (With a core/pit such as a peach or plum).
- Knife
- Stickers/Labels
- Marker

**Instructional Setting:** Classroom, outside

**Community Connections and/or Peer Interaction:** Go to a local grocery store or market and search for fruit/vegetable examples that have similar structures to the interior of the Earth, such as peaches, plums, or avocados.

Learn the Layers of the Earth Rap

<http://www.youtube.com/watch?v=H0d7PRJMkkQ> with a group of typically developing peers.

**Functional Activity/Routine:** Students can identify and separate edible parts of fruits from the inedible parts (removing cores), sort fruits by type, wash fruit, and combine fruits into an appealing, healthy snack.

**Strategies to Collect Evidence:**

Evaluate students' ability to label the different parts of the fruit as the model of the Earth's interior with stickers or verbally.

Given the choices of "crust", "mantle", or "core" on an AAC device, have students identify the parts of the Earth model that you point at.

Have students assemble and label their own Earth's interior models using materials such as modeling clay.

Have students cut construction paper circles from different colors to indicate each layer of the earth and label with the name of the layer.

### **Specific Options for Differentiating this Activity:**

- Allow students with visual impairments to touch and feel the layers of the fruit and their position as you use it as a model of the Earth's interior.
- Have students build their own models of the interior of the Earth using play dough or modeling clay.
- Develop a class song or rhyme that can be used to help remember the names and positions of the interior structures of the Earth.
- Watch a short layers of the earth movie  
<http://www.youtube.com/watch?v=7YCUlJDMomM>
- Use books from Tar Heel Reader to read about and create student non fiction books to share on line.

**Extension Ideas:** Using three different colors of Play-Dough or modeling clay, have students build their own Earth model by rolling a small ball of one color to make the core, add another color as a larger covering to make the mantle, then cover with a third color and roll into a sphere. Cut the sphere in half and identify the layers of the Earth depicted in the cross-section.

Assemble pizza bagels using an "Earth's Interior" theme. Using the bagels as the crust, slice and add cheese and the mantle and a piece of pepperoni in the center as the core. A dash a pizza sauce can be used as "lava".