

# Journey to the Center of the Earth: Exploring Earth's Layers

## Materials Needed

- Four colors of modeling clay or playdough (suggested: Red, Orange, Yellow, and Blue/Green)
- A piece of dental floss or a plastic butter knife (for cutting the model)
- A hard-boiled egg OR a peach (for demonstration)
- Paper and crayons/markers
- Optional: Small labels or toothpicks and tape

## Learning Objectives

By the end of this lesson, the learner will be able to:

- Name the four main layers of the Earth: Inner Core, Outer Core, Mantle, and Crust.
- Identify which layers are hot and which are solid or liquid.
- Construct a 3D model representing the Earth's structure.

## 1. Introduction: The Great Mystery Hole (Hook)

**The Hook:** Ask the learner: "If you started digging a hole in the backyard and never stopped, what do you think you would find? Would it just be dirt forever, or would it change?"

**The Big Idea:** Explain that the Earth is like a giant, round puzzle or a piece of fruit. We live on the very outside, but inside, things get very hot and very strange!

## 2. Instruction: "I Do" (The Analogy)

**The Egg/Peach Demonstration:** Show the learner a hard-boiled egg (unpeeled) or a peach.

- **The Shell/Skin:** This is the **Crust**. It's thin, cold, and rocky. It's where we stand!
- **The White/Flesh:** This is the **Mantle**. It is the biggest part. It's super hot and acts like thick, gooey melted plastic.
- **The Yolk/Pit:** This is the **Core**. It is at the very center and is the hottest part of the whole planet!

**Talking Points for 6-Year-Olds:** "The crust is like the skin on your knee—thin but it protects what's inside! The middle is hot like a yummy toasted marshmallow, and the center is a burning hot metal ball!"

## 3. Guided Practice: "We Do" (The Layer Chant)

Before building, let's memorize the names with movement:

- **Crust:** Tap your feet on the floor (It's what we stand on!).

- **Mantle:** Wiggle your arms like slow-moving lava (It's gooey!).
- **Outer Core:** Make a "swish" sound (It's liquid metal!).
- **Inner Core:** Squeeze your fists tight (It's a solid, heavy ball!).

Repeat the names and movements together three times, getting faster each time.

## 4. Independent Activity: "You Do" (The Playdough Earth)

Now, the learner will build their own Earth from the inside out. Follow these steps:

1. **The Inner Core (Yellow):** Roll a small ball of yellow clay. (*Explain: This is a solid metal ball, as hot as the sun!*)
2. **The Outer Core (Orange):** Wrap a layer of orange clay around the yellow ball. (*Explain: This layer is so hot it melted into liquid!*)
3. **The Mantle (Red):** Wrap a thick layer of red clay around the orange. (*Explain: This is the thickest layer. It moves very slowly.*)
4. **The Crust (Blue/Green):** Wrap a thin layer of blue over the red, and add green spots for land. (*Explain: This is the cool layer where we live.*)
5. **The Big Reveal:** Use the dental floss to "saw" the ball in half. The learner can now see all the layers they created!

## 5. Conclusion: Recap & Success Criteria

**Summary:** Look at the cross-section of your clay Earth. Point to each layer and say its name. Remember: It gets hotter and harder the deeper you go!

**Success Criteria:** The learner can successfully answer:

- "Which layer do we walk on?" (Crust)
- "Which layer is in the very center?" (Inner Core)
- "Is the middle of the earth cold or hot?" (Very hot!)

## Adaptability & Differentiation

- **For Struggling Learners:** Focus on just three layers (Crust, Mantle, Core) instead of four. Use a pre-drawn coloring sheet of the Earth layers.
- **For Advanced Learners:** Discuss *why* the inner core is solid (pressure) or introduce the idea of Tectonic Plates—the crust is actually broken into giant puzzle pieces that float on the mantle.
- **Digital Option:** If clay isn't available, use a digital drawing app to "paint" the circles in the correct colors and label them.

## Assessment Methods

- **Formative:** Observation during the "Layer Chant" and the building process. Can the student place the colors in the correct order (lightest/hottest in the middle)?
- **Summative:** Have the learner draw a picture of their cut-open clay Earth on paper and try to label the layers using the first letter of each word (C for Crust, M for Mantle, etc.).