

LESSON 5:

CREATING EARTH'S CORE

Students will use playdoh to model the four layers of Earth. Students will learn how and why core samples are taken in the scientific world.

OBJECTIVES

- What can we learn from core sampling our playdoh earths?

SUPPLIES

TEACHER PURCHASES

- None

LESSON KIT #5

- Play-Doh in multiple colors (3-4 jars per group of 3 students)
- 25 clear boba straws

OTHER SUPPLIES

The remaining supplies for this experiment can be found in the following locations in your bin

PENCIL BOX

- Rulers (6, share amongst students)
- Pencils (1 per student)

FOLDER

- Printer paper (1 sheet per student, for writing)

HANDOUTS FOLDER

- Earth's Layers Handout (1 per student)

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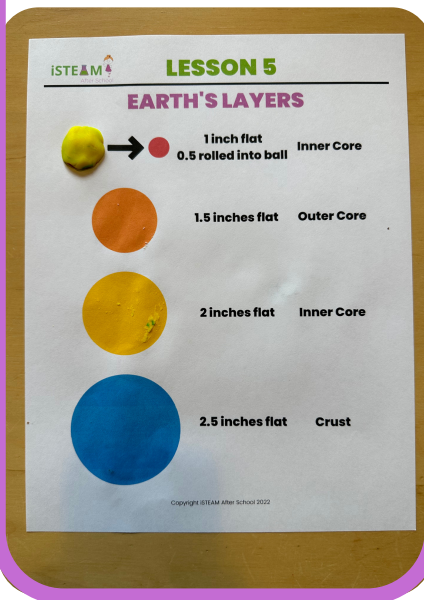


HOOK

🕒 2-3 min

Did you know there are some trees existing in America that are hundreds, some even thousands of years old?! Do you know any tools scientists uses to discover the age of trees? Discuss.

HANDOUT EXAMPLE



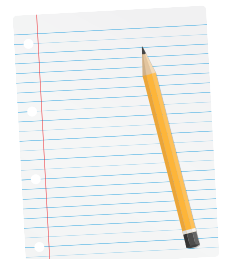
DISCUSSION

🕒 3-5 min

Trees grow a new ring in their trunk for every year they are alive. One way to determine the age of trees is by doing a core sample. A long, strong, hollow tube is twisted through the trunk. When they pull the tube out, scientists have a section of the tree to study. They can tell a lot about the tree by the rings! If the rings are really close together it might mean the tree didn't grow much that year, maybe there was a drought.

Coring can be used in the ground in rock layers to tell us the history of an area. Coring was even used on the Indianapolis Speedway to show the layers of years of pavement materials that were used on the track! This went from gravel and limestone to brick to asphalt.

Today we are going to create core samples using playdoh!



LESSON 5



HYPOTHESIS

🕒 3-5 min

Do you know what the Earth is made up of?
What do you think core sampling is used for? Why do scientists use it?

EXPERIMENTATION

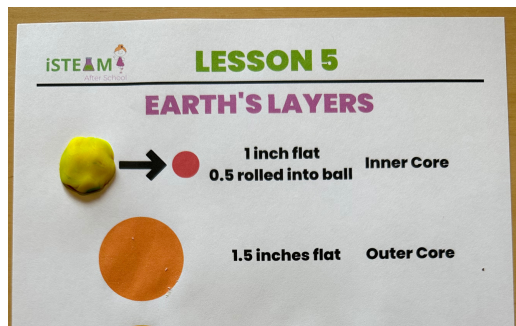
🕒 15-20 min

Pass out materials needed for experiment: (1) 4 mini PlayDoh containers, students can share in groups of 3, (2) rulers, (3) plastic boba straws, (4) Earth's Layers handout

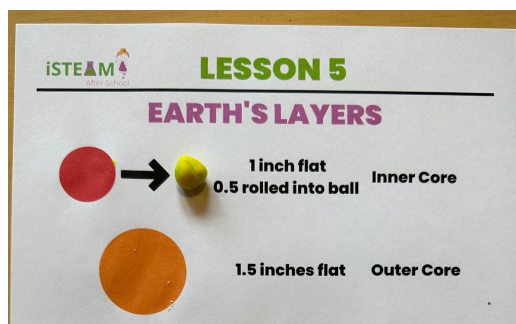
Here are your directions for taking core samples of the Earth you create using PlayDoh.

1. Choose the four colors you want to use
2. For color one, use the Earth's Layers handout to squish the PlayDoh into a coin-shaped circle 1 inch across - this is the "Inner Core". Then, roll into a ball. The ball will be about 0.5 inches.
3. For color two, squish into a flat circle the size of the "Outer Core" and leave flat.
4. Repeat for colors three and four to create the "Mantle" and "Crust"

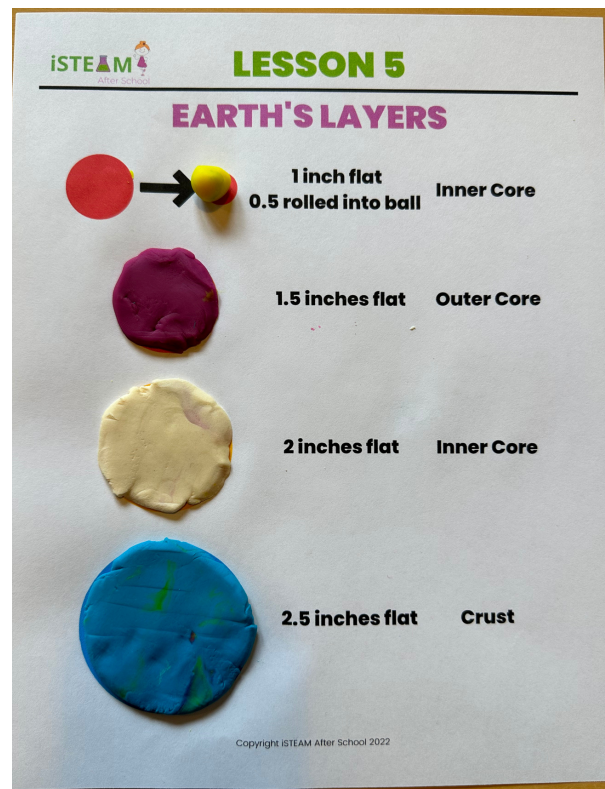
STEP 1



STEP 2



STEP 3



LESSON 5

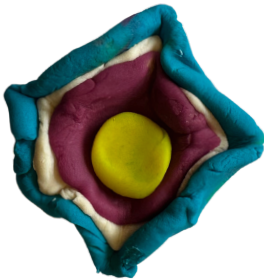
EXPERIMENTATION CONT.

🕒 15-20 min

STEP 4



STEP 5

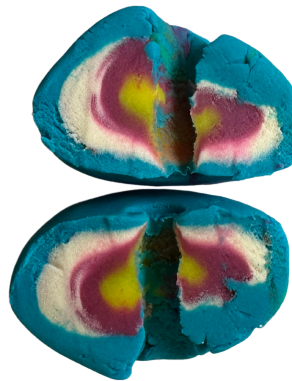


STEP 6



4. Stack up the four layers, from top to bottom: Inner Core, Outer Core, Mantle, Crust.
5. Pinch together the sides like a dumpling to wrap the outer layers around the Inner Core. Roll the ball between your hands to make it more smooth.
6. Take a straw and push it through the center of the "Earth" and all the way through, then remove.
7. Have students view the layers and guess which layers is which part of Earth.

STEP 7



OBSERVATION & EXPLANATION

🕒 10-15 min

See the different colors in the straw? How did they get that way? How many layers do you see? Review the layers of the Earth you learned, what does each layer represent for the Earth?

CONCLUSION

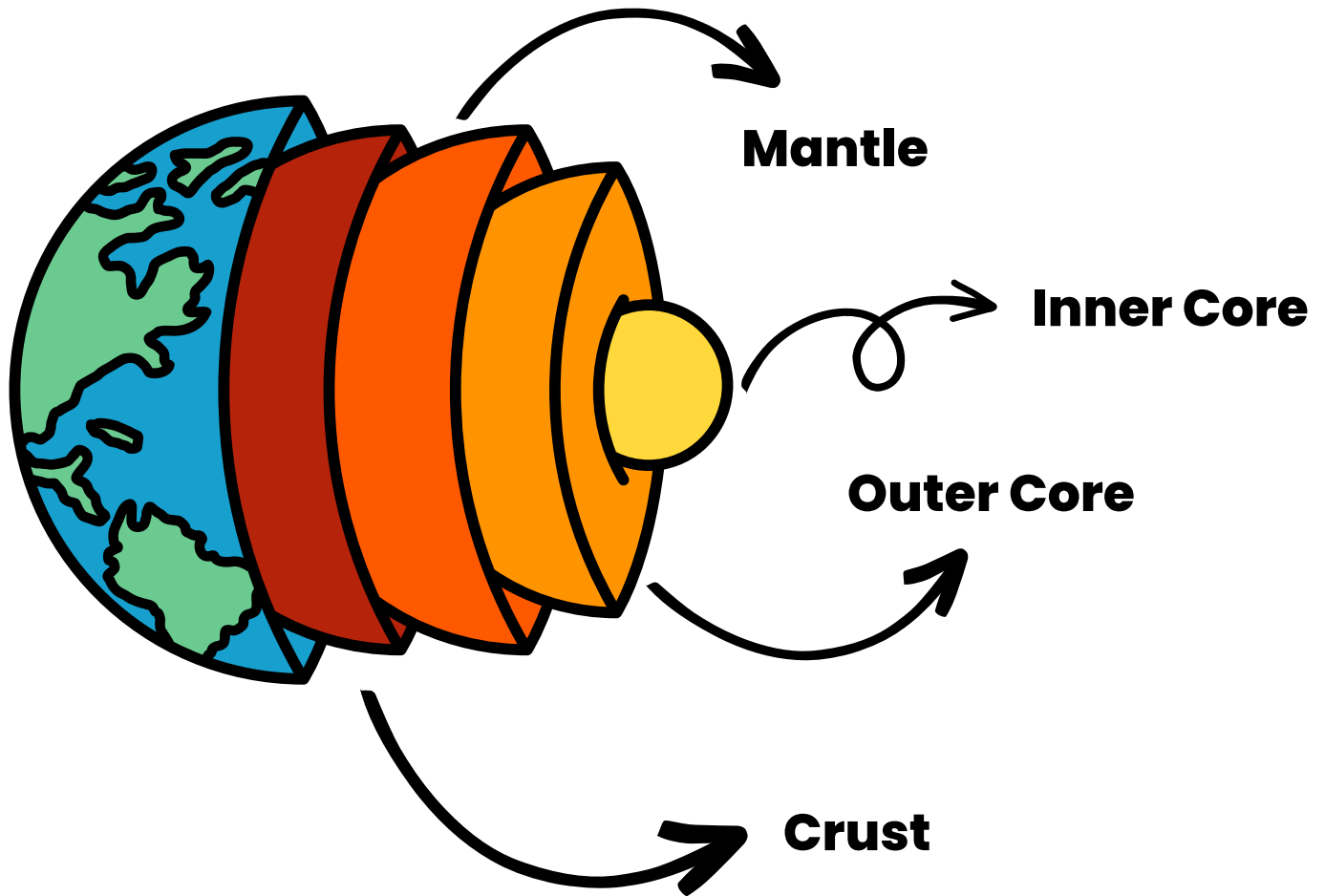
🕒 5-7 min

Fill out Hypothesis/Observation/Conclusion charts on the white board together as a group. Instruct students to clean their stations. Make sure to leave the classroom the way you found it.

ASSESSMENT

🕒 3 min

Students may write this answer on their sheet of paper or verbal tell the instructor as they leave: What is one way that core sampling can help a scientist?



SCIENTIST'S WORKSHEET

Tip: Can draw or write the following down on whiteboard!

Hypothesis	Observation	Conclusion
<p>What is the Earth made of? How many layers do you think there are? What could you use to recreate the Earth's layers?</p>	<p>What are the similarities and differences between each of your samples? Do you know which color represents which layer of Earth?</p>	<p>What did we discover by core sampling? Why do scientists take samples of the Earth's core?</p>