

Density of Fluids

Density/Earth Layers

Introduction: You will add fluids to a container to observe the property of density and compare/contrast these fluids to Earth's layers.

Review:

Density - mass/volume

Liquids - ability of a fluid to change shape and volume

Directions:

1. Obtain a clear container that has a top, like a Gatorade bottle. Cut the label off so you can clearly see through it.
2. Fill the bottle with half water. Observe.
3. Fill the bottle with $\frac{1}{4}$ vegetable oil. Make an observation.
4. Fill the bottle with $\frac{1}{4}$ corn syrup. Make two observations.

Observe/Draw:

In the space below, create a drawing/sketch of the layers of liquid in the container. Be sure to label the appropriate layers. Next to the bottle, draw a cross section of Earth and compare the layers of the bottle to the layers of Earth.

Bottle

Earth

Analysis:

Create a bar graph in your INB that shows the density of layers of Earth.

Layers	Density (g/cm ³)	Depth (km)
Crust	3.3	40
Mantle	4.0	2700
Outer Core	10.5	5150
Inner Core	12.8	6378

Questions:

1. How do the layers you've created in your bottle relate to the layers of Earth?
2. What is the difference in density of the crust and the inner core?
Which layers in the bottle represent these layers of Earth?
3. How are the layers in the bottle different from the layers of Earth?
4. How would you measure the density of these fluids? Provide directions.