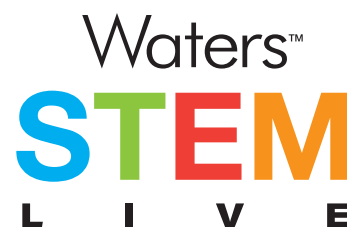


6-Layer Density Column

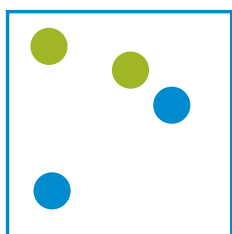
Stacking up the liquids!



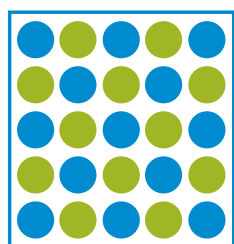
What is density?

Density is a word we use to describe how much space an object or substance takes up (its volume) in relation to the amount of matter in that object or substance (its mass).

Both the pillow and the steel have the same mass (500 g), but the steel takes up much less space (volume) than the pillow. This means that the steel is more dense than the pillow.



LOW DENSITY



HIGH DENSITY



LOW DENSITY



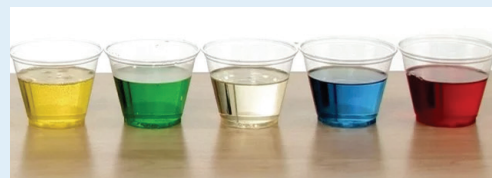
HIGH DENSITY

MATERIALS

- A tall glass vase or bottle
- 6 small cups
- Turkey baster
- Food coloring (3-4 colors optional)
- Honey
- Corn syrup/maple syrup
- Dish soap
- Water
- Vegetable oil
- Rubbing alcohol (70%) *(adult supervision/ optional layer)*
- Test objects (such as an almond, olive, ping pong ball, a bolt, grape, cherry tomato)

INSTRUCTIONS

Step 1: Pour equal amounts of each liquid into cups. You can add food coloring to any of the clear liquids, so they stand out in the finished density column.



Step 2: Start by pouring the honey into the cylinder. Slowly layer the honey and then the corn syrup/maple syrup into the center of the container. Take your time, and make sure they don't touch the sides of the container as you pour.



Step 3: Use the turkey baster to layer the dish soap. Add the soap one dribble at a time, and don't let the liquid touch the sides of the container.



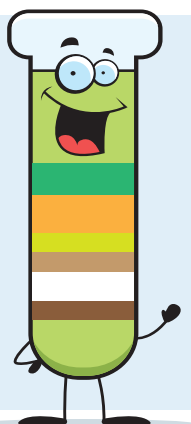
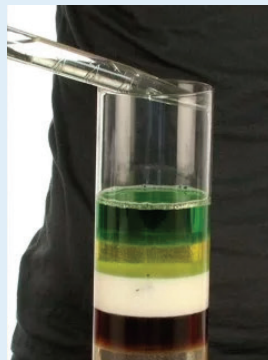
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6-Layer Density Column

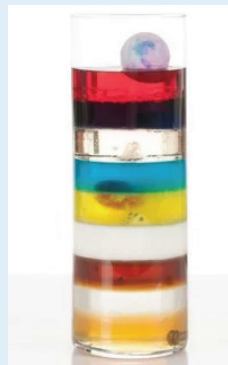
Stacking up the liquids!

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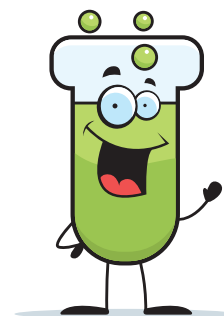
Step 4: Starting with the water, hold the tip of the baster against the side of the container, close to the layer of dish soap. Let the water flow down the side of the container and onto the dish soap. Move the baster upward as needed. Layer the vegetable oil and the rubbing alcohol in the same way. Allow each layer to settle before moving on to the next.



Step 5: Release the test objects one at a time into the density column so they "slide" as gently as possible through the liquids and fall along the side of the container.



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Safety tip!

Do not perform this experiment without adult supervision.



HOW IT WORKS

The same amount of two different liquids will have different densities if they have different masses. Less dense liquids (like water or vegetable oil) have less mass per volume, so they float on top of the more dense liquids (like honey or corn syrup). The liquids that have a higher density will sink below the liquids that have a lower density. The same rules apply to the small objects that you dropped into your density column. A metal object is more dense than all of the liquids and therefore sinks directly to the bottom. Less dense objects will float on individual layers within the density column.

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