At Home Density Lab

Materials:

- Tall, clear glass container (drinking glass, jar, beaker, graduated cylinder, etc.)
- Water (with optional food coloring – choose a color different from the other liquids in the experiment)
- Maple syrup / pancake syrup
- Cooking oil (vegetable oil or canola oil)
- Milk
- Dish soap
- Measuring cup (optional)

If you don't have one of the liquids, don't worry! You can complete this activity with whatever you have. Remember: NEVER taste the materials in a science experiment, and keep away from your mouth/nose.

Procedure:

Gather all of your liquids and make observations about each liquid. What do they look like? How do they move around the container they're each in? How "heavy" do they seem? Record your observations here:

Liquid	Water	Syrup	Oil	Milk	Dish Soap
Observations					

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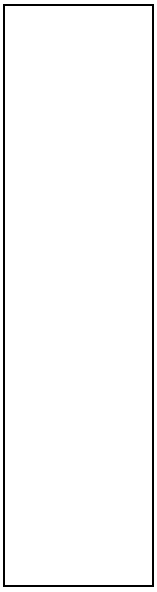
1. Make a prediction about how the liquids will settle in the container. The liquids will layer in order from most dense at the bottom to least dense at the top. The heaviest liquids are the most dense and will sink. You can even color in the layers as part of your prediction:



_____ - Least Dense

_____

_____

_____

_____ - Most Dense

2. Carefully add the liquids to the container in the order you predicted, from most dense (add first) to least dense (add last). Try to put in about the same amount of each liquid. Use a measuring cup to help you. Wait at least 30 seconds in between SLOWLY adding each liquid.

3. Observe what happens as you add each liquid. Write any interesting observations here:

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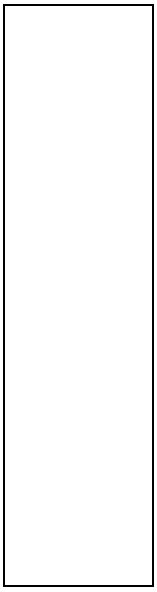
4. Once the liquids have settled in layers, record the results the same way you made your predictions. Fill in the chart below, and color in the layers, too:



_____ - Least Dense

_____

_____

_____

_____ - Most Dense

5. How did you do? How did your predictions match up with your results? Explain below.

_____

_____

_____

_____

_____

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6. What part of the results were the most interesting or surprising? Explain below.

_____

_____

_____

_____

8. Extensions

- Experiment with different liquids you may have in your cabinets or refrigerator – anywhere around the house! As for a parent's assistance and BE CAREFUL!
- Adjust the temperature of the water or milk and see how it affects the "density tower."
- Try dropping an ice cube into your "density tower." Try dropping in other small objects or foods, such as popcorn kernels or beads, and watch what happens.
- Do a web search to see if you can find the actual number density values for the liquids. Do the ones with the higher densities sink to the bottom during your experiment? Does what you find online match your own results?

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