

Name \_\_\_\_\_



## Liquid Layers

**Background Information:** Mass and volume are not the only physical properties that describe how much matter you have.

Another measurable physical property related to mass and volume is **DENSITY**. Density is the amount of mass a material has for a given volume. You notice this property when you try to lift two things of equal volume that have different masses.

Density ***is mass divided by volume.***

This relationship tells us how tightly mass is packed into an object.

If two objects are the same size, the one with the most density, will have the most mass. A cup full of very dense material weighs more than a cup full of less dense material.

If we squeeze matter into a smaller space, its mass is still the same, but its volume is smaller. Its density is greater.

**Question:** What happens when several liquids of different densities are put in the same container?

**Hypothesis:**

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**Materials:**

250 mL beaker	Graduated cylinder	Corn syrup
Glycerin	Water	Corn oil
Rubbing alcohol	Food coloring	Map pencils

**Procedure:**

1. Add food coloring to each liquid to make them different colors. Leave the water colorless.
2. Pour 40 mL of corn syrup into the beaker.
3. Slowly pour 40 mL of glycerin into the beaker. Allow the glycerin to trickle down the side of the beaker and observe.
4. Slowly pour 40 mL of water into the beaker and observe.
5. Slowly pour 40 mL of corn oil into the beaker and observe.
6. Slowly pour 40 mL of rubbing alcohol into the beaker and observe.

**Data:**

Record your observations as you add each liquid to the beaker.

☺ Corn syrup

☺ Corn syrup + glycerin

☺ Corn syrup + glycerin + water

☺ Corn syrup + glycerin + water + corn oil

☺ Corn syrup + glycerin + water + corn oil + rubbing alcohol

Draw and color a diagram of your beaker:

### Questions & Conclusions:

1. Look back at your hypothesis. Did the investigation turn out like you expected? Why or why not?

2. Why do you think the liquids behaved the way they did?

3. List the substances in this investigation in order from highest density to lowest density. Explain why you put them in this order.
4. Water has a density of  $1 \text{ g/cm}^3$ . What can you say about the densities of the liquids in this investigation?