

Curiosity Labs™ by MilliporeSigma:
HOMEMADE Lava Lamp

in this experiment, you will learn...

- What **density** is
- How density affects different objects
- What **buoyancy** is
- How density and buoyancy are connected

Share your results and tag us! #SPARKCuriosity

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SUPPLIES

- Clear jar/cup
- Vegetable oil
- Water
- Food coloring
- Salt

Instructions

STEP 1

Fill the jar 1/3 full with water.

STEP 2

Pour approximately 1/3 cup (80 mL) of oil into the jar.

STEP 3

Add one or two drops of food coloring. Does it color the oil or the water?

STEP 4

Shake salt on top of the oil. What happens to the food coloring?

STEP 5

Add more salt to keep the action going!

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FUN FACTS

Density is measured by how tightly the molecules in an object are packed together.

Density and buoyancy are interconnected. Buoyancy is an object's ability to float.

Objects with high density typically have low buoyancy, and objects with low density typically have high buoyancy.



WHAT HAPPENED?

The oil floats on top of the water because a drop of oil is lighter than a drop of water. The scientific way of saying this is that water is denser than oil. In addition to having different densities, oil and water are also known as immiscible liquids, meaning they don't mix.

Pouring salt on the oil and water mixture causes lots of movement. Salt is denser than water and oil, so it sinks to the bottom. As the salt passes through the oil layer, a drop of oil sticks to it and travels to the bottom. As the grain of salt dissolves it releases the oil, which floats back up to the top.