



AIM KITS

STEMducate

Lava Lamps

September
2024



September 2024: Lava Lamps

This Month's AIM Kit is making Lava Lamps. Lava lamps are not just fun to watch—they also teach us about density and chemical reactions!

Have you ever wondered why the blobs in a lava lamp move up and down? It's all about density! Density is how much "stuff" is packed into a certain space. When you mix oil and water, they separate because oil is less dense. Add an effervescent tablet, and watch as bubbles form, lifting water droplets to the top. When the bubbles pop, the water drops back down, creating a cool lava effect. With this kit, you'll create your own colorful lava lamp while exploring the science behind it!

Lava lamps are a colorful way to explore the science behind liquids and gases. Let's get started and create your own mesmerizing lava lamp!

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MATERIALS NEEDED:

- 1. Clear plastic or glass bottle/jar (with a tight-fitting lid)**
- 2. Vegetable oil**
- 3. Water**
- 4. Food coloring**
- 5. Effervescent tablets (like Alka-Seltzer or a similar brand)**
- 6. Measuring cup**
- 7. Funnel (optional, for easier pouring)**



PROCEDURE:

1. Pour vegetable oil into the bottle until it's about two-thirds full.
2. Pour water into the bottle until it's almost full. The water will sink to the bottom.
3. Add 10-15 drops of food coloring to the bottle. The color will mix with the water.
4. Drop a small piece of an effervescent tablet into the bottle. Watch as bubbles lift the colored water through the oil, creating a lava effect.
5. When the bubbling stops, you can add another piece of the tablet to keep the lava lamp going.



WHY IT WORKS:

The mesmerizing lava lamp effect is all about density and chemical reactions. In this experiment, you'll see how two liquids—oil and water—don't mix because they have different densities. The oil is less dense, so it floats on top of the water.

When you drop an effervescent tablet into the mix, it starts to dissolve and release carbon dioxide gas. This gas forms bubbles that attach to the colored water droplets, making them less dense and causing them to rise through the oil. When the bubbles reach the top, they pop, and the water droplets sink back down. This up-and-down movement creates the "lava" effect you see in the lamp!



Contact Us

 +1 225-800-STEM (7836)

 info@stemducate.org

About STEMducate

STEMducate is a non-profit organization dedicated to creating and promoting STEM to students from a young age to increase their curiosity and imagination. Our goal is to expose students to STEM opportunities and careers, enabling them to dream big and make their dreams a reality. We provide positive and powerful opportunities and experiences in STEM fields for people of all ages. These initiatives will hopefully entice students toward becoming the next innovators, educators, researchers, and leaders. We aim to reduce the number of unfilled jobs due to the lack of specialized skills that are needed to perform job tasks.

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