



Activity # 1 - Bubble Up Bottle

Introduction: Have you ever seen a Lava Lamp? When the lamp heats up, what happens?

In this activity you will create a bubble up bottle that will bubble like a lava lamp.



Supplies Needed:

- Vegetable oil
- Water
- Food coloring of your choice
- Alka-Seltzer tablets
- Clear glass or plastic bottle (16 oz is recommended) *The taller and skinner the bottle, the better the effect.*
- Funnel

What to Do:

1. Using a funnel, fill the container with 2 parts oil, 1 part water, leaving some room at the top of the container for a little bit of bubbling. If you are using a 16 oz bottle, we suggest that you use 1 Cup oil and 1/2 Cup water.
2. Add 3-5 drops of food coloring. You can add a couple more drops if you want the color to be darker.
3. Break an Alka-Selzer tablet into 2-3 pieces. Add one piece to the bottle. Watch what happens. Another piece can be added when the bubbling stops.
5. This is optional but fun! Take your bottle to a dark room and shine a flashlight under the bottom to make it look like a lava lamp. How does the light change the look of the oil, water, and the bubbles?
6. When all the bubbling stops, with the lid tightly secured, turn the bottle on the side, and slowly move the bottle back and forth until the tiny bubbles of oil droplets form a large glob.

Why do you think this happened?



What Happened?

- Oil and water will not combine when mixed together.
- Water is heavier and more dense than oil. Water will sink to the bottom when the two are put together in a container.
- When the Alka-Seltzer tablet was added to the water and oil it sank to the bottom, fizzed and created bubbles.
- The Alka-Seltzer reacts with the water to produce carbon dioxide gas bubbles. These stick to the water droplets.
- The water/gas combo is less dense than the oil, so the bubbles rise to the top of the container. At the top, the gas bubbles pop and escape into the air, allowing the dense water to sink back to the bottom again.

Lava Lamp video - if you would like to see a lava lamp, you can watch this video on YouTube

<https://www.youtube.com/watch?v=vBf1UkSUQQ0&feature=youtu.be>

Activity adapted from Nebraska Extension 4-H Youth Development (<https://unl.app.box.com/s/bgsh4nx6w39e50jwc30y1ogf2zzvavab>)

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