

lava lamp

AT-HOME SCIENCE ACTIVITIES

Lava lamps, created in the 1960s, are a thick glass container that holds a colored wax in an intensely colored solution. They are usually powered by electricity which heats a light bulb. The light bulb melts the wax and the heat currents cause the wax to move up and throughout the liquid. Our experiment mimics the lava lamp with common household ingredients.

MATERIALS

clear glass or plastic container
vegetable oil
water
liquid food coloring
effervescent antacid tablet

DIRECTIONS

Measure equal parts of vegetable oil and water. Pour the oil into your container first and then add the water. Add at least four drops of food coloring. Break the antacid tablet into quarters. Drop a piece into the liquid mixture.

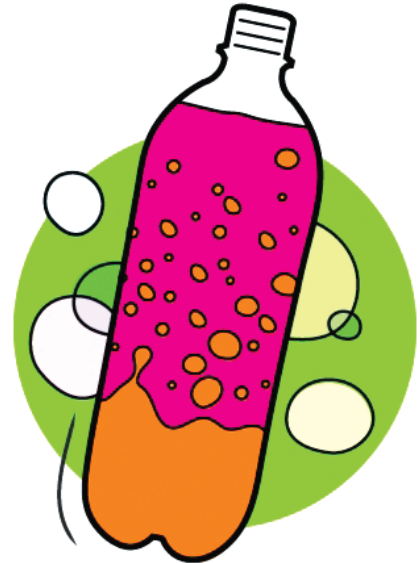
THE SCIENCE

What did you observe when adding the water to the oil? Did the water stay on top of the oil or sink to the bottom or did they mix into each other? You probably noticed that oil and water do not mix and that the water sank to the bottom. That's because each liquid has a different density. Density is a word we use to describe how much space something takes up or how heavy it is. In this case, the water is denser than the oil, meaning it is heavier.

What happened after adding the food coloring? Did it also fall through the oil? Depending on how long you observe, you might notice the food

EXPERIMENTS

- After your bubble reaction begins to calm, you can add more pieces of the effervescent tablet to cause another reaction. Your oil, water, and food coloring mixture can be reused over and over again. If your container has a lid, you can save your solution for reuse.
- Try adding small items like sequins or confetti to see how they react in the bubbles.
- After you are finished with your effervescent tablets and your solution has calmed, you can fill your container completely and then hot glue the lid. Now, you've created a fun sensory visual that can be shaken to watch the oil and water mix and settle.



coloring will settle between the oil and water layers. That's because food coloring is *less* dense than water but more dense than oil.

What happened after dropping in the effervescent tablet? What you are seeing is the effervescent tablets, or sodium bicarbonate (baking soda), in the tablet reacts with the water and causes gas bubbles to form. The bubbles rise in the solution and cause the food coloring to mix with the water and push the bubbles up through the oil. Once the bubbles of gas pop the water settles back to the bottom of the container.

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