

Blobs in a Bottle



YOU WILL NEED:

- A clean 1 litre clear soda bottle
- 3/4 cup of water
- Vegetable Oil
- Fizzing tablets (such as Alka Seltzer)
- Food colouring

WHAT TO DO:

1. Pour the water into the bottle.
2. Use a measuring cup or funnel to slowly pour the vegetable oil into the bottle until it's almost full. You may have to wait a few minutes for the oil and water separate.
3. Add 10 drops of food colouring to the bottle (we like red, but any colour will look great.) The drops will pass through the oil and then mix with the water below.
4. Break a seltzer tablet in half and drop the half tablet into the bottle. Watch it sink to the bottom and let the blobby greatness begin!
5. To keep the effect going, just add another tablet piece. For a true lava lamp effect, shine a flashlight through the bottom of the bottle.



Watch the video on the Science Bob website.

HOW DOES IT WORK?

To begin, the oil stays above the water because the oil is lighter than the water or, more specifically, less dense than water. The oil and water do not mix because of something called "intermolecular polarity." That term is fun to bring up in dinner conversation. Molecular polarity basically means that water molecules are attracted to other water molecules. They get along fine, and can loosely bond together (drops.) This is similar to magnets that are attracted to each other. Oil molecules are attracted to other oil molecules, they get along fine as well. But the structures of the two molecules do not allow them to bond together. Of course, there's a lot more fancy scientific language to describe density and molecular polarity, but maybe now you'll at least look at that vinaigrette salad dressing in a whole new way.

When you added the tablet piece, it sank to the bottom and started dissolving and creating a gas. As the gas bubbles rose, they took some of the coloured water with them. When the blob of water reached the top, the gas escaped and down went the water. Cool, huh? By the way, you can store your "Blobs In A Bottle" with the cap on, and then anytime you want to bring it back to life, just add another tablet piece.

MAKE IT AN EXPERIMENT

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer this question:

1. Does the temperature of the water affect the reaction?
2. Does the size of the bottle affect how many blobs are produced?
3. Does the effect still work if the cap is put on the bottle?
4. Does the size of the tablet pieces affect the number of blobs created?