

Lava in a Cup!



Simple Supplies:

- Clear Glass Cup
- ¼ Cup Vegetable Oil
- 1 Teaspoon of Salt
- Water
- Food Coloring (Optional)

*Tip – Before starting this activity, ensure that all of your materials are as clean as possible to prevent contamination, which can affect the experiment.

How To:

1. Fill the glass about $\frac{3}{4}$ full of water.
2. Add five drops of food coloring. You may add more or less depending on the size glass you are using. Choose your favorite color or select red or orange for that cool lava effect.
3. Slowly pour the vegetable oil into the glass. Notice how the oil floats to the surface.
Hmm, I wonder why that happens? Do you know?
4. Sprinkle the salt on top of the oil.

What Happened:

By now, you have noticed the blobs of “lava” or oil moving up and down in your glass, but do you know why? First the oil floats on top of the water because it is less dense or lighter than water. However, salt is denser or heavier than oil and water. As the salt is sprinkled onto the oil, it naturally sinks to the bottom of the glass taking some of the oil along with it. Then as the salt dissolves into the water, it frees the oil sending it back to the surface. You can keep adding more salt to keep your lava in the glass dancing.

Vocabulary:

- *Dense* – A measurement that compares the amount of matter an object has to its volume. An object with a lot of matter in a certain amount of volume has high density. An object with a little matter in the same amount of volume has a low density.
- *Dissolve* – To become broken up or absorbed by something or to disappear into something else.

More Fun:

Now that you know the basics for this project, expand your knowledge by trying to answer the following questions.

- How long will the effect continue if you keep adding salt?
- Does the amount of salt change the density of the water?
- Do different types of food oils like olive, coconut, canola, etc. affect the results of your project?
- Will other substances like sand, sugar, etc. affect the project in the same manner?
- Does the height or shape of the glass affect the project?