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Lava in a cup



Standards:

8. a, b, c, & d All objects experience a buoyant force when immersed in water.

Introduction:

How would you like to make your own cheap and easy lava lamp? This one is easy but short lived.

Materials:

- A clear drinking glass
- $\frac{1}{4}$ cup vegetable oil
- 1 teaspoon salt
- Water
- Food coloring (optional)

Safety:

- Always have an adult with you to help you during your experiment.
- Always wear eye protection and gloves when doing chemistry experiments

Procedure:

1. Fill the glass about $\frac{3}{4}$ full of water
2. Add about 5 drops of food coloring, red will make it look more like lava
3. Slowly pour the vegetable oil into the glass. See how the oil floats on top?
4. Sprinkle the salt on top of the oil.
5. Watch blobs of lava move up and down in your glass.
6. You can add more salt to keep the effect going.

Data and Observations:

Record your observations in this space.

What did you see? Anything you were not expecting? Describe it here.

How does it work?

So what's going on? Of course, it's not real lava but it does look a bit like a lava lamp. First of all, the oil floats on top of the water because it is lighter than the water. Since the salt is heavier than oil, it sinks down into the water and takes some oil with it, but then the salt dissolves and back up goes the oil.

Questions:

1. How long will the effect go on if you keep adding salt?
2. Do different kinds of food oil give different effects?
3. Will other substances (sand, sugar, etc.) work the same as salt?
4. Does the height or shape of the glass affect the experiment?

References:

1. Sciencebob.com
<http://www.sciencebob.com/experiments/lavacup.php>
(accessed July 23, 2012).

