

Classroom Chemistry – Bubbling Density

Bubbles are fun to watch and different coloured liquids floating on each other is interesting too. This experiment combines these two activities.

Materials:

- Cups (clear plastic)
- Light corn syrup
- Water
- Dropper or pipette
- Red and blue food colouring
- Vegetable oil
- Disposable cup
- Mixing spoon
- Baking soda
- Vinegar
- Old towel

Procedure: (Remember to have your parent's permission and have them watch and help you.)

- Cover your work area with the old towel or do this activity outside. It is a good idea to wear old clothes that you don't mind if they get stained.
- Pour corn syrup into the clear plastic cup to a depth of about 2 cm.
- Mix in several drops of red food coloring and mix well.
- Sprinkle baking soda on top of the corn syrup to a depth of about 0.5 cm.
- Gently pour water down the inside surface of the cup to a depth of about 2 cm.
- Add the vegetable oil next to a depth of about 2 cm.
- In a separate cup, use the blue food coloring to dye some vinegar.
- Take the dropper and drip the vinegar into the first cup. Keep adding the vinegar and watch what happens?
- Now, take the dropper filled with vinegar and put it down into the liquid so that the tip is in the baking soda layer. Squeeze out the vinegar and observe what happens.
- Keep adding more vinegar and observing the reaction.

What's Happening:

This experiment involves both density and a chemical reaction. Notice that the less dense liquids float on top of the more dense ones which creates the separation in the cup. When you first add the vinegar, it drops through the oil but has trouble breaking through to the layer of water. You will notice that blue blobs will slowly add up between the oil and water. Because of that, blobs of vinegar pile up at the bottom of the oil layer. When the vinegar is released in the layer of baking soda, a chemical reaction occurs that releases the gas carbon dioxide which you see as the foam.

Extension:

You can use different colours of food colouring for a slightly different effect.

This activity is based on our Classroom Chemistry kit. The source for this lab is <http://www.stevespanglerscience.com/lab/experiments/bubbling-density-concoction>. Our teaching kits (described on our website) are loaned out FREE to provide classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering as a classroom guest speaker or offer your business as a field trip location.

Lorne Cooper, Regional Executive Director

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