Baking Soda Bubbles
Lesson Plan

Amount of time Demo takes: 2-3 mins.
Try this at home!

Materials

- 1/2 cup of baking soda (1/2 cup/demo)
- 2 cups of vinegar (2 cup/demo)
- Bubbles and a bubble wand (1)
- Fish tank
- Small clear cup (1)
- Spoon (1)
- Bucket for waste

Set-up Instructions

1. Put ½ cup baking soda in a clear container.
2. Then add 2 cups of vinegar.
3. Blow bubbles over it, and the bubbles should stay suspended over CO2 gas, because of the difference in density.

Lesson’s Big Idea

- The mixture of vinegar and baking soda will bubble, making carbon dioxide.
- The carbon dioxide stays at the bottom of the bowl because it is more dense than the air in the bowl. The bubbles float on top of the carbon dioxide because they are filled with air and the air is less dense than the carbon dioxide.
- What density means: Pretend that you had two balloons and you filled one with air, and the other one with the same amount of carbon dioxide. The balloons would be the same size, because the gas in them takes up the same amount of space. But if you weighed both balloons, the one with the carbon dioxide would be heavier. This means that it's denser than the balloon with air in it.

SAFETY!

- Vinegar is an acid. Do not get in eyes. Wash hands after contact.
**Instructional Procedure**

1. Blow some bubbles into the container and watch how they float on the carbon dioxide. The bubbles are floating where the carbon dioxide and air meet.

**Clean Up**

- Clean up between demos if needed. When completely finished gather all materials listed for this demo and make sure everything is accounted for. If something was used up, broken, or damaged, let someone know so it can get replaced or fixed.

**References**

- [http://www.elmhurst.edu/~chm/vchembook/123Adensitygas.html](http://www.elmhurst.edu/~chm/vchembook/123Adensitygas.html)

**Next Generation Science Standards**

- K-5
  - 2-PS1
  - 5-PS1-3
- 6-8
  - MS-PS3