California State University of Bakersfield, Department of Chemistry

Floating Bubbles

Standards:

5th: 1 g- Students know properties of substances such as carbon dioxide.

Introduction:

Bubbles are lots of fun! But normally they fall to the ground and pop, this experiment will teach you how to keep them floating. By mixing baking soda and vinegar you make a reaction that produces carbon dioxide gas. The carbon dioxide gas settles above the liquid in the bottom of the bucket in an invisible layer. The air you blow through the bubble wand contains oxygen and carbon dioxide. This means the bubbles will contain an oxygen and carbon dioxide gas mix that is lighter than the pure carbon dioxide gas at the bottom of the bucket. Once the bubbles float down into the bucket they will start floating on the invisible layer of carbon dioxide gas produced by the chemical reaction.

Materials:

- Bubble solution
- Bubble blowing wand
- Large empty bucket
- Measuring cup
- Baking soda
- Vinegar

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. Put ½ cup of baking soda in your empty bucket.
2. Add 1 full cup of vinegar to the bucket. Watch as the chemical reaction starts to fizz and produce carbon dioxide gas.
3. As the fizzing begins to stop, start gently blowing bubbles up into the air above the bucket. You want the bubbles to float into the bucket on their own. DO NOT blow them directly into the bucket; this will displace the carbon dioxide out of the bucket.
4. Watch the bubbles that float down into the bucket as they levitate in midair almost like magic!
5. Grab some friends and make bubbles float! Have fun!

Data and Observations:

Record your observations in this space

Questions:

1. Why do the bubbles float as if they were magic?

2. How was the invisible layer of carbon dioxide gas formed?

3. Why does the carbon dioxide layer disappear?

References:

1. Weirdsciencekids.com
http://www.weirdsciencekids.com/Floatingbubbles.html
(Accessed July 25, 2012).