

A Gas Sudsation!

You can use chemistry to make something new. In this activity, you will combine baking soda and vinegar and see bubbles. These new bubbles will be filled with a gas that was not there before. Combining substances and getting something new is called a *chemical change* because the chemicals you start with *change* to become different chemicals.

Materials:

- Vinegar
- Baking soda
- Liquid dish detergent
- Measuring spoons
- Plastic soda bottle
- Paper or plastic cups
- Tape
- Scissors



Procedures:



1. Use your masking tape and pen to label one cup vinegar and one cup baking soda.

2. Pour 3 tablespoons of vinegar and 3 tablespoons of water into the vinegar cup.

3. Pour the vinegar and water solution into the bottle.

4. Add $\frac{1}{4}$ teaspoon of dish detergent. Swirl gently to mix. DO NOT SHAKE.

5. Make a funnel out of a piece of paper and tape it so that it



doesn't come apart.

6. Place 3 teaspoons of baking soda into its labeled cup.

7. Use the funnel to dump all the baking soda into the bottle at once. Swirl the mixture. What do you observe? Even if you think the reaction has stopped, keep swirling because there may be lots more bubbling still to come!



Think about this ...

If you continue to add more and more baking soda, do you think you will continue to get more and more bubbles? Why or why not?

Try this: See if you can find the exact amount of vinegar, water, detergent, and baking soda to bubble right to the very top of the bottle but no further. Good Luck!

Where's the Chemistry?

Whenever you see bubbling after combining substances, it is quite likely that the substances have changed to form something new. In the baking soda and vinegar reaction, the new substances created are carbon dioxide gas, water, and something called sodium acetate. Carbon dioxide gas was

inside the bubbles you saw. The detergent did not change in the reaction. It helped the bubbles last longer.

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