

# 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:

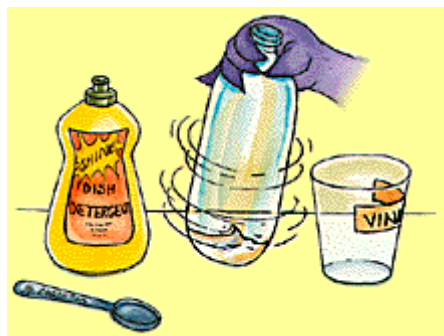
1. Use your masking tape and pen to label one cup vinegar and one cup baking soda.



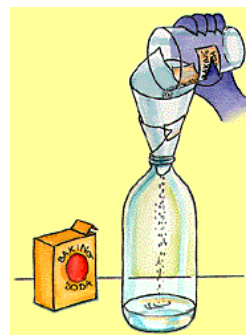
2. Pour 3 tablespoons of vinegar and 3 tablespoons of water into the vinegar cup.



3. Pour the vinegar and water solution into the bottle.
4. Add ¼ 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.



The American Chemical Society develops materials for elementary school age children to spark their interest in science and teach developmentally appropriate chemistry concepts. The *Activities for Children* collection includes hands-on activities, articles, puzzles, and games on topics related to children's everyday experiences.

The collection can be used to supplement the science curriculum, celebrate National Chemistry Week, develop Chemists Celebrate Earth Day events, invite children to give science a try at a large event, or to explore just for fun at home.

Find more activities, articles, puzzles and games at [www.acs.org/kids](http://www.acs.org/kids).

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## Safety Tips

This activity is intended for elementary school children under the direct supervision of an adult. The American Chemical Society cannot be responsible for any accidents or injuries that may result from conducting the activities without proper supervision, from not specifically following directions, or from ignoring the cautions contained in the text.

### Always:

- Work with an adult.
- Read and follow all directions for the activity.
- Read all warning labels on all materials being used.
- Wear eye protection.
- Follow safety warnings or precautions, such as wearing gloves or tying back long hair.
- Use all materials carefully, following the directions given.
- Be sure to clean up and dispose of materials properly when you are finished with an activity.
- Wash your hands well after every activity.

**Never** eat or drink while conducting an experiment, and be careful to keep all of the materials used away from your mouth, nose, and eyes!

**Never** experiment on your own!

**For more detailed information on safety go to [www.acs.org/education](http://www.acs.org/education) and click on "Safety Guidelines".**

