



The Academy of
Natural Sciences
of DREXEL UNIVERSITY

Balloon Blowing Bottle



All the fun of a “volcano” with none of the mess!

Materials:

- Plastic soda bottle
- Vinegar
- Baking soda
- Funnel
- Water
- Balloon

Instructions:

1. Pour about an inch of liquid--half vinegar, half water--into the bottle.
2. Use the funnel to fill the balloon half full of baking soda.
3. Stretch the open end of the balloon over the neck of the bottle. Make sure it's on tight! Let the heavy end of the balloon dangle, so no baking soda goes in the bottle. (Adults may have to help the children with this part, or have it set up for them in advance.)

4. Hold onto the balloon at the bottle neck. Pick up the heavy part of the balloon and let all the baking soda fall into the vinegar at the bottom of the bottle.

Wow! Hear the fizz? There are thousands of bubbles! And look at what's happening to the balloon...

Questions to ask:

- What do you see happening to the balloon?
- Do you hear any sounds?
- Do you smell anything different?
- Is there anything different you would like to try to change our experiment?

About this experiment:

When you were young, you probably loved the fizzing sound of mixing vinegar and baking soda together to create "lava" for your volcano. However, we didn't always think about the science behind the reaction. When baking soda and vinegar are combined, the acetic acid in the vinegar breaks down the baking soda (calcium carbonate) into the basics of its chemical composition. The carbon combines with the oxygen in the bottle to create carbon dioxide gas. The gas rises, can't escape from the bottle and goes into the balloon to blow it up.