

Balloon Blow Up

Summary

In this activity, we will be using vinegar and baking soda to release carbon dioxide gas to fill up a balloon. From our previous activities we learned that matter comes in several forms. We can touch and smell it, and it takes up space. A chemical reaction occurs when one or more reactants (like baking soda and vinegar) changes into a new product (carbon dioxide) and it cannot be undone to get the baking soda and vinegar back to their original forms.

Materials

- Glasses or sunglasses (*eye protection*)
- 1 balloon
 - *We use a 9-inch balloon, but other sizes may work*
- Clean 16-20 oz. soda or water Bottle
- ½ cup vinegar
- 1 Tablespoon baking soda
- Plastic funnel
 - *You can also use recycled paper and tape to make your own funnel.*
- Tray or cookie sheet

Steps to Follow (*All activities must be done with adult supervision*)

1. Do a brief review of your states of matter and what a chemical reaction is before you start.
 - a. *What is matter and its forms?*
 - b. *What is a chemical reaction?*
2. Pour ½ cup of vinegar into the water/soda bottle.
3. Put the funnel into the balloon opening and slowly pour in 1 tablespoon of baking soda into the balloon.
4. Attach the balloon to the bottle opening but do not let the baking soda fall into the bottle!
 - a. *Your balloon should be hanging from the top of the bottle off to the side.*
 - b. *Make sure the balloon is tightly secured and covers the entire opening of the bottle to prevent spills and gas leakage.*
 - c. *This is a good time to employ the scientific method. What do you think will happen in the bottle and to the balloon?*
5. Lift the balloon so the baking soda can fall into the bottle of vinegar.
6. *What did you observe?*
 - a. *We may not think of it right away, but gas takes up space like the other forms of matter. It fills balloons, tires, and the space all around us in the room.*

Ohio Early Learning and Development Standards

General Knowledge and Cognition/Science/Science Inquiry and Application/Inquiry

General Knowledge and Cognition/Science/Physical science/Explorations of Energy

Ohio Learning Standards

3.PS.2

New Generation Science Standards (NGSS)

2-PS-1