Baking Soda Science: Volcanoes

Summary

In this activity, we will be expanding on the introduction to the forms of matter by making an erupting volcano. Solids (like your chair or table) have a distinct shape, while liquids (like water or milk) get their shape from their container and pour very easily. Baking soda is a solid if you look closely at its small size, and vinegar is a liquid like water. When the two are mixed, they go through a chemical reaction that releases carbon dioxide (a gas). This is what causes the foamy mess and makes it look like a volcanic eruption.

Materials

- Glasses or sunglasses *(eye protection)*
- ½ Tablespoon baking soda
- 1 small cup or ¼ cup playdough
    - If you use a cup, pour the baking soda in it.
    - If you are using the playdough, shape it so it looks like a volcano and make a divot in the top and put the baking soda into it.
- 2 Tablespoons vinegar
    - You will want to have this in a small cup for easy use.
    - You can even add a drop of red food coloring and dish soap for added fun and visuals.
- Tray or cookie sheet *(contain spills for easy clean up)*

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

1. Begin by reviewing the forms of matter by observing the materials we have for this activity. *What form of matter is the baking soda, vinegar, cup/play dough, and the air all around us?*
    a. Baking soda is a solid since it does have its own *tiny* shape, just like the cup and play dough have their shape.
    b. The vinegar has a shape only when it is in a container and it can be poured easily.
    c. Like air in a balloon, the air around us is a gas that fills up a space.
2. Place all your materials on the tray or cookie sheet.
3. Slowly pour the vinegar into the cup or divot that contains the baking soda. *What do you observe?*
    a. Bubbles appear from the release of carbon dioxide.

Ohio Early Learning and Development Standards

Cognition and General Science/Science/Science Inquiry and Application/Inquiry
Cognition and General Science/Science/Physical Science/Explorations of Energy

Ohio Learning Standards

3.PS.2

Next Generation Science Standards

2-PS1-1