

Nature of Matter Lab Activity – Student Edition

Inflating Balloons

Background Information:

Matter is defined as anything that has mass and takes up space. In this lab, you will explore the nature of matter through using the reaction between acetic acid (vinegar) and sodium bicarbonate (baking soda) which makes carbon dioxide gas.

Specific Learning Objectives

By the end of this lab activity you should be able to:

- Identify the three states of matter in the reactants and products.
- Describe the properties of solids, liquids, and gases.

Lab set up

Time allowance: 30 minutes

Equipment needed:

1. balloons - small to medium sized
2. plastic bottle – empty, any size
3. 2 x funnel
4. baking soda
5. white vinegar

Lab Instructions

1. Use the funnel to fill the plastic bottle with vinegar to 1/3 capacity.



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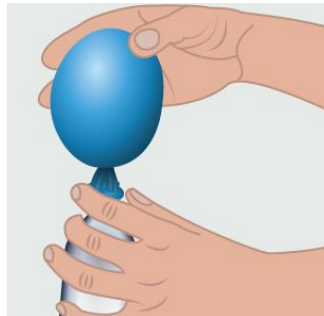
2. Insert the other funnel to the mouth of the balloon and half fill it with baking soda.

Pinch the neck of the balloon so that no baking soda can escape.

3. Stretch the mouth of the balloon over the neck of bottle and ensure it is firm. Note you may need to hold it there if it is too loose.



4. Lift the balloon so that it is vertical and allow the baking soda to fall into the bottle.



5. Observe what happens and record.



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Post-Lab Questions:

1. Complete the table to identify each of the following in the experiment:

State	Reactants/Products involved	Physical Properties of these reactants.
Solid:		
Liquid:		
Gas:		

2. Draw a diagram in the space below to show how the particles differ in the baking soda, vinegar, and carbon dioxide gas.

3. Identify the property of the gas in this experiment which allows it to fill the balloon.

4. Explain why the balloon inflates.
