



HUFF AND PUFF WATER BOTTLE

SCIENCE SAFETY

PLEASE follow these safety precautions when doing any science experiment.

- **ALWAYS** have an adult present.
- **ALWAYS** wear the correct safety gear while doing any experiment.
- **NEVER** eat or drink anything when performing any experiment.
- **REMEMBER** experiments may require marbles, small balls, balloons, and other small parts. Those objects could become a CHOKING HAZARD. Adults are to perform those experiments using these objects. Any child can choke or suffocate on uninflated or broken balloons. Keep uninflated or broken balloons away from children.

INGREDIENTS

- Small Neck Bottle
- Piece of Paper

INSTRUCTIONS

STEP 1: Tear off a small piece of paper. Crumple the small piece of paper into a wad. Describe and classify the paper by its observable properties.

STEP 2: Place the bottle on its side. Describe and classify the bottle and its contents by their observable properties.

STEP 3: Put the crumpled piece of paper, loosely, into the neck of the bottle. Make sure the wad of paper is close to the opening.

STEP 4: Using the air from your mouth, attempt to blow the wad of paper into the bottle and observe. Describe how this can be used as a model to describe that matter is made of particles too small to be seen.

EXPLANATION

Air takes up space and has mass. While the bottle looks empty, it's actually filled with air. The air from your mouth hits the air inside the bottle, bounces off, and pushes the wad of paper out of the bottle, instead of inside the bottle.



SCIENCE BACKGROUND

Matter is anything that has mass and takes up space. Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter of any type can be subdivided into particles that are too small to see, but even then, the matter still exists and can be detected by other means. A model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects. Matter can be described and classified by its observable properties. Measurements of a variety of properties can be used to identify materials. Different properties are suited to different purposes.

I CAN STATEMENTS

- ✓ I can plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- ✓ I can develop a model to describe that matter is made of particles too small to be seen.

NEXT GENERATION SCIENCE STANDARDS CONNECTION

2 – Structure and Properties of Matter | Planning and Carrying Out Investigations | Patterns

5 – Matter and its Interactions | Developing and Using Models | Scale, Proportion, and Quantity