ELEPHANT TOOTHPASTE

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 while doing 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

- 16 oz Plastic Bottle
- 20-Volume Clear Developer
- Yeast
- Dishwashing Liquid
- Warm Water
- Plastic Cup

INSTRUCTIONS

STEP 1: Pour ½ a cup of 20-volume clear developer into the plastic bottle. Add 1 tablespoon of dishwashing liquid and mix. Describe and classify the mixture by its observable properties.
STEP 2: Mix 1 tablespoon of yeast with 2 tablespoons of warm water, in the plastic cup, and wait 30 seconds. Describe and classify the yeast, before and after adding warm water, by its observable properties.
STEP 3: Pour the yeast and warm water mixture into the plastic bottle containing 20-volume clear developer and dishwashing liquid. What happens? Did adding the yeast into the plastic bottle, containing 20-volume clear developer and dishwashing liquid, result in a new substance?

EXPLANATION

The yeast acts as a catalyst, quickly removing the oxygen from the 20-volume clear developer, creating a lot of foam. The plastic bottle feels warm since the chemical reaction releases a lot of heat. A chemical reaction releasing heat energy is called an exothermic reaction.

Hooked on SCIENCE

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 can be described and classified by its observable properties. Measurements of a variety of properties can be used to identify materials. When two or more different substances are mixed, a new substance with different properties may form. This is considered a chemical reaction, which is a change that results in one or more new substances. A physical reaction does not result in a new substance.

I CAN STATEMENT

- ✓ I can plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- ✓ I can conduct an investigation to determine whether the mixing of two or more substances results in a new substance.

NEXT GENERATION SCIENCE STANDARDS CONNECTION

2 – Structure and Properties of Matter I Patterns
5 – Structure and Properties of Matter I Cause and Effect