# FOAM, FIZZ

# STUDENT WORKBOOK



# ELEPHANT TOOTHPASTE EXPLOSION!

Perform a chemical reaction to make what many people call "elephant toothpaste". It makes so much foam that an elephant could use it to brush their teeth.

## MAKING TOOTHPASTE

## WHAT YOU NEED: FROM THE KIT:

2 pipets

CIVITY

- Beaker
- Dishwashing liquid
- Food coloring
- Gloves
- Goggles
- Graduated cylinder

- Hydrogen peroxide
- Pie plate
- Stirring rod
- Thermometer
- Yeast
- OTHER ITEMS: Paper towels

## WARNING:

**CHEMICAL WARNING:** This kit contains chemicals that may be harmful if misused. Read cautions on individual containers carefully. Not to be used by children except under adult supervision.



## WHAT TO DO: STEP 1

Put on your goggles and gloves, and place the graduated cylinder in the pie plate.

## STEP 2

Use the pipet to add 7.5 milliliters (mL) of hydrogen peroxide to the graduated cylinder.

### **STEP 3**

Add 2–3 drops of food coloring to the graduated cylinder.

#### **STEP 4**

Add 2–3 drops of dishwashing liquid to the graduated cylinder.

**STEP 5** Gently swirl the graduated cylinder to mix the hydrogen peroxide, food coloring, and dish soap.

**STEP 6** Fill the beaker with 50 mL of warm water.



#### STEP 7

Open the yeast packet and pour it into the warm water in the beaker.

**STEP 8** Let the yeast sit in the water for 1 minute.

**STEP 9** Use a clean pipet to get about 1 mL of the yeast solution (the pipet should be full).



## STEP IO

When you're ready, quickly squeeze the pipet full of yeast solution into the mixture in the graduated cylinder. Pull the pipet out quickly so it doesn't get in the way of the reaction.

**STEP II** Sit back and watch the foamy fun!

**STEP I2** Once the foam settles, feel the temperature on the outside of the graduated cylinder. If you get any liquid on your hands, rinse your gloves. You can also place your thermometer inside of the cylinder to see the temperature change.

**STEP I3** Clean up! You can drain and rinse the graduated cylinder, pie plate, and beaker into the sink.

Note: Save your materials from this activity for future activities in this kit.

3

THINK ABOUT IT!

? 1. What are two things you observed during this reaction?

2. What are two questions you have about this reaction?



**Catalyst** – a substance that is used to speed up a chemical reaction.

**Chemical change –** a change in which new substances are formed with new chemical identities.

**Chemical equation –** a set of words and symbols used to describe a chemical reaction.

**Endothermic reaction** – a chemical reaction in which heat is absorbed from the surroundings.

**Exothermic reaction** – a chemical reaction in which heat is released to the surroundings.

**Hypothesis** – a prediction of what will happen during a scientific experiment, often in the form of an If-Then statement.

**Physical change** – a change in which an object or substance becomes different in appearance but not identity; a change in size, shape, or state.

**Product** – a substance that a chemical reaction ends with.

**Reactant –** a substance that a chemical reaction starts with.

**Variable –** something that changes in an experiment.

**Yield –** to make as a result of a chemical reaction.

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