OH WOW! MOMENT
ACTIVITY BY OH WOW! EDUCATION STAFF
GRADE LEVEL: SUITABLE FOR ALL AGES

Elephant Toothpaste – Kid Safe Version

AT A GLANCE:

This is a kid-safe version of the popular Elephant's Toothpaste demonstration using common household materials. A child with a great adult helper can safely do this activity and the results are wonderful.

STUDENTS WILL BE ABLE TO:

Demonstrate the process of science inquiry by posing questions and investigating phenomena through language, methods and instruments of science.

BACKGROUND INFORMATION:

The reaction creates foam that shoots up out of the bottle and pools in the pan. After a minute or so, it begins to come out in a moving stream that looks like toothpaste being squeezed out of a tube. The students can play with the foam as it is just soap and water with oxygen bubbles. The bottle will feel warm to the touch as this is an exothermic reaction.

PRINCIPALS:

Talk about the addition of the yeast as a catalyst, which makes the peroxide molecule release the oxygen atom faster. The teacher who submitted this experiment claims to have done this with hundreds of students from kindergarten through fifth grade and some adults who all loved the experiment. It is very easy and safe to do again at home using regular hydrogen peroxide from the drugstore.

MATERIALS:

- 16 oz empty plastic soda bottle (preferably with a narrow neck)
- 1/2 cup 20-volume hydrogen peroxide (20-volume is 6% solution)
- Squirt of Dawn dish detergent
- 3-4 drops of food coloring
- 1 teaspoon yeast dissolved in approximately 2 tablespoons very warm water
- Funnel
- Foil cake pan with 2-inch sides
- Safety glasses
- Lab coat

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PROCEDURE:

1. Have students put on their safety glasses and lab smock. Each student should have in front of them a cake pan, plastic bottle, Dawn in small cup, food coloring, 1/2 cup peroxide, and the dissolved yeast mixture.
2. Stand the bottle up in the center of the cake pan. Put the funnel in the opening. Add 3-4 drops of food coloring to the peroxide and pour the peroxide through the funnel into the bottle. Show a water molecule diagram and a peroxide molecule diagram, pointing to the extra oxygen that will be set free in the reaction.
3. Add the Dawn detergent to the peroxide in the bottle.
4. Pour the yeast mixture into the bottle and quickly remove the funnel.
5. The students can touch the bottle to feel any changes that take place.

Try this:

1. To make the four different solutions, regular 30% hydrogen peroxide and then diluted it by 1/2. Then dilute the 15% solution by half and the 7.5% solution by half. However, you can use various concentrations of peroxide available at drugstores, beauty supply stores, and to chemists.
2. The most important part of the experiment is that everything stays the same except for the concentrations of peroxide. Each cylinder should have 30 mL of hydrogen peroxide, 5 mL of dish soap, and 5 mL of 2M sodium iodide.
3. Collect your data by measuring the height of your eruption on the graduated cylinder.

What do you notice or observe?

What conclusions can you make?

What can you do differently next time?