**Kid-Friendly Exploding Toothpaste**

**A kid-safe version of the classic Elephant's Toothpaste**

This is a kid-safe version of the popular Exploding Toothpaste demonstration using materials that are easier to find. A child with a great adult helper can perform this activity safely, and the results are wonderful.

**Experiment Materials**

* 1-liter plastic soda bottle
* Hydrogen peroxide (12%) (This is found at a store that sells hair care products. Ask for hydrogen peroxide that is labeled 40-volume. This is the same as a 12% solution.)
* Liquid dish soap
* Food coloring
* Package of dry yeast (found at the grocery store)
* Measuring spoons
* Funnel
* Construction paper, markers, and some creativity
* [Safety glasses](http://www.stevespanglerscience.com/store/catalog/product/view/id/1442)
* Plastic tarp to cover the demonstration table
* Rubber gloves

**Experiment**

1. Let’s start with the arts and crafts part of the activity by making a decorative wrap to cover the plastic soda bottle. Since the activity is called Exploding Toothpaste, use your creativity to make a wrap that looks like a tube of toothpaste.
2. Put on your safety glasses and rubber gloves.
3. Cover the demonstration table with the plastic tarp.
4. Use a funnel to add 4 ounces (120 mL) of 40-volume hydrogen peroxide to the 1-liter soda bottle.
5. Add a squirt of dish soap and some food coloring to the hydrogen peroxide in the bottle. Give the solution a quick swirl to mix the contents.
6. Carefully cover the bottle with the toothpaste wrap that you made previously. It’s best to have someone help you with this step to prevent you from accidentally tipping over the bottle.
7. The next step is to prepare a kid-friendly catalyst for the reaction by mixing an entire package of dry yeast with 4 tablespoons of very warm water in a small plastic cup. Stir the mixture with a spoon. If the mixture is too thick or paste-like, add a small amount of warm water to thin it out.
8. Here comes the fun part. Pour the yeast mixture into the bottle and watch what happens. It may take a few seconds to react, but the result is well worth the wait.

**When you are finished**, it is safe to dispose of all of the demonstration materials either by throwing them away in the trash can or by washing them down the drain.

How Does It Work:

Similar to what happened in the adult version of Exploding Toothpaste, the yeast works as a **catalyst** to release the oxygen molecules from the hydrogen peroxide solution. The oxygen-filled bubbles, which make up the foam, are actually the remainder of what happens when the hydrogen peroxide breaks down into water (H2O) and oxygen (O2). The bottle will feel warm to the touch because this is an **exothermic** reaction in which energy, in the form of heat, is given off.