

# Elephant Toothpaste (Kid-friendly)



## The Science:

So you've made it through the mucus and you're starting to set up your new home. BUT WAIT! The human body decides to fight back using reactive oxygen species (such as hydrogen peroxide). This could really hurt you, so it's time to turn on your defenses. To fight back, you use the power of CATALASE! This enzyme breaks down the harmful hydrogen peroxide into water and oxygen, creating lots of tiny bubbles!

In this experiment, we will be making elephant toothpaste! It looks just as it sounds – foaming toothpaste SO BIG an elephant could bush its teeth with it! Instead of *H. pylori*, we will be using YEAST! Yeast can also use catalase to break down hydrogen peroxide into oxygen and water. The oxygen gets trapped by the soap, creating foam! Foam is awesome so let's get started!

## What you'll need:

1. An empty 20-ounce plastic bottle (or container)
2. 3% hydrogen peroxide solution (available at nearly any store)
3. Packet of active yeast (from the grocery store)
4. Liquid dishwashing detergent (such as Dawn)
5. Warm water
6. Food coloring (optional, but it looks cool)

## Making the Elephant Toothpaste

### Video:

<https://www.youtube.com/watch?v=JSWHRwGaOqs>

### Step 1:

Pour  $\frac{1}{2}$  cup hydrogen peroxide solution,  $\frac{1}{4}$  cup dishwashing soap, and a 8-10 drops of food coloring into the bottle. Swish the bottle around to mix the ingredients. Set the bottle in a sink or outdoors or somewhere you won't mind getting wet foam everywhere.

### Step 2:

In a separate container, mix a packet of active yeast with a little warm water. Give the yeast about five minutes to activate before proceeding to the next step.

### Step 3:

Pour the yeast mixture into the bottle. The reaction occurs immediately upon the addition of yeast, so move away from the bottle quickly!

### Being Safe:

1. Wear safety goggles and gloves
2. Don't touch the foam because it can be very hot! After several minutes, it does cool down.

### References:

<https://www.thoughtco.com/kid-friendly-elephant-toothpaste-demo-604164>

<https://www.hellowonderful.co/post/elephant-toothpaste-science-experiment-with-kids/>