

Elephant Toothpaste – with potato

Instructions in a Test Tube (about 1-1.5 cm wide)

- **First Step is to put on your safety goggles and gloves!**
- Place test tubes in a test tube rack and place on a tray/cookie sheet or in a tub so it easier to clean up.
- Cube 1 large potato. Place potato in blender with 1 cup of water and “grate”. *You can also do a rough blend or dice potato small and then smash with blade of knife similar to how it is done w/ garlic – some chunkiness seems to work best.*
- Add 12 ml (or 3 tsp) of potato slurry into tube.
- Add 6 ml (or 1-1.5 tsp) of water to tube.
- Add 6 ml (or 1-1.5 tsp) of hydrogen peroxide (3%) to tube.
- Wait and watch 😊.

Fun variation: add a drop of food coloring to the tube before adding potato; add a drop of food coloring to the tube before adding potato AND add a drop of a different food color to the hydrogen peroxide before adding it to the bottle.

Instructions in a Bottle (about 1-1.5 cm wide)

- **First Step is to put on your safety goggles and gloves!**
- Place bottle in a tray/cookie sheet or in a tub so it easier to clean up.
- Cube 1 large potato. Place potato in blender with 1 cup of water and “grate”. *You can also do a rough blend or dice potato small and then smash with blade of knife similar to how it is done w/ garlic – some chunkiness seems to work best.*
- Add 1 cup of potato slurry into bottle.
- Add 1.5 cup of water to bottle.
- Add 1.5 cup of hydrogen peroxide (3%) to tube.
- Wait and watch 😊.

Fun variation: add 2 drops of food coloring to the bottle before adding potato; add two drops of food coloring to the tube before adding potato AND add a drop of a different food color to the hydrogen peroxide before adding it to the bottle.

The Science behind the experiment:

The foam is special because each tiny foam bubble is filled with oxygen. The potato has an enzyme catalyst called catalase which removes oxygen from the hydrogen peroxide, leaving water. Since it did this very fast, the released oxygen created lots and lots of bubbles. If you pay attention to the tube/bottle as the experiment takes place, you will notice that it gets warm. The experiment created a reaction called an exothermic reaction, which means it not only created foam, it released heat! The foam produced is just water, potato, and oxygen, so you can clean it up with a sponge and pour any extra liquid left in the bottle down the drain.



Elephant Toothpaste

Instructions:

- **First Step is to put on your safety goggles and gloves!**
- Place your plastic bottle on a tray or tub so that it is easy to clean up all the foam.
- Measure 1/2 cup of hydrogen peroxide, and carefully pour it into the bottle.
- Add about 1 tablespoon of liquid dish soap into the bottle and swish it around to mix!
- Add 8 drops of your favorite food coloring into the bottle.
- In a separate small cup, combine the 3 tbs warm water and the yeast together and mix for about 30 seconds.
- Pour the yeast water mixture into the bottle and watch the reaction!!

The Science behind the experiment:

The foam is special because each tiny foam bubble is filled with oxygen. The yeast acted as a catalyst (a helper) to remove the oxygen from the hydrogen peroxide. Since it did this very fast, it created lots and lots of bubbles. If you pay attention to the bottle as the experiment takes place, you will notice that it gets warm. The experiment created a reaction called an exothermic reaction, which means it not only created foam, it released heat! The foam produced is just water, soap, and oxygen, so you can clean it up with a sponge and pour any extra liquid left in the bottle down the drain.