Warm Up to Some Cool Reactions!

Some chemical reactions change temperature, change color, produce a gas, or make a solid from two liquids. Try this reaction and see what it does!

What you'll need

- Hydrogen peroxide (3% - Do not use a higher percentage.)
- Yeast (3 teaspoons)
- Cup (paper or plastic)
- Thermometer (use thermometers with red liquid only)
- Measuring spoons
- Vinegar
- Baking soda

Be safe

Hydrogen peroxide and vinegar will irritate or sting your skin and eyes. Always work with an adult to supervise and guide you. You and your adult partner should both wear properly fitting safety goggles. Wear gloves when pouring hydrogen peroxide or vinegar. Do not taste or eat any food items you are testing.

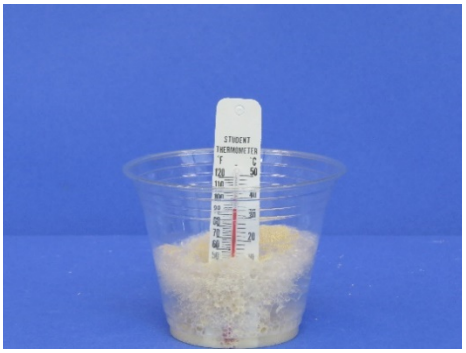
Here's what to do

1. Pour 1 tablespoon of hydrogen peroxide into a cup. Place the thermometer into the cup.

2. Hold the thermometer and the cup so they do not fall over. Read the temperature and write it down as your "Starting Temperature".

3. Measure 1 teaspoon of yeast. While the thermometer is still in the cup, dump all the yeast into the cup. Gently swirl the cup while you look at the temperature.

   What did you observe?



What to expect

The yeast and hydrogen peroxide will produce bubbles and the temperature will increase.

What's happening in there?

When yeast was added to hydrogen peroxide, a chemical in the yeast causes a reaction in which the hydrogen peroxide breaks apart to form oxygen gas and water. The oxygen was in the bubbles you saw. This reaction causes the temperature to go up.

What else could you try?

Be safe

Be sure to review the safety instructions on page 1 before proceeding.

Here's what to do

Try Another Temperature Changer!

1. Place 1 tablespoon of vinegar in a cup. Put the thermometer in the cup. Hold the thermometer and cup so they do not fall over. Read the temperature and write it down as the "Starting Temperature".

2. Measure 1 teaspoon of baking soda. With the thermometer still in the cup, have your adult partner dump all the baking soda in the cup.

3. Gently swirl the cup while looking sat the thermometer.

   What did you observe?

What to expect

The vinegar and baking soda will produce bubbles and the temperature will decrease.

What's happening in there?

When the baking soda was added to vinegar, a chemical reaction takes place that produces carbon dioxide gas. This reaction causes the temperature to go down.