1

IODINE CLOCK REACTION

Using safe household chemicals, this experiment demonstrates how two colorless liquids can combine to make a colored solution through the magic of simple chemistry.

YOU'LL NEED

- Distilled water (or tap water)
- Plastic cups
- Vitamin C tablets (1000 mg)
- Tincture of iodine (2%)
- Hydrogen peroxide (3%)
- Liquid laundry starch

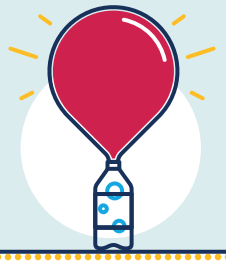
DIRECTIONS

1. Make a vitamin C solution by crushing a 1000 mg tablet of vitamin C and dissolving it in 2 ounces of water. Label this "vitamin C stock solution."
2. Combine 1 teaspoon of the vitamin C stock solution with 1 teaspoon of iodine and 2 ounces of water. Label this "solution A."
3. Prepare "solution B" by adding 2 ounces of water to 3 teaspoons of hydrogen peroxide and ½ teaspoon of liquid starch solution.
4. Pour solution A into solution B, and pour the resulting solution back into the empty cup to mix them thoroughly. Keep pouring the liquid back and forth between the cups.

Credit: https://www.imaginationstationtoledo.org/educator/activities/iodine-clock-reaction

2

BAKING SODA BALLOONS



The goal of this experiment is to demonstrate the power of gas produced when baking soda and vinegar are mixed. The reaction between these two ingredients should inflate the balloons.

YOU'LL NEED

- Balloons (1 per person)
- Clean, empty bottles (1 per person)
- Small funnel
- Baking soda (2 tablespoons per person)
- Vinegar (4 ounces per person)

DIRECTIONS

1. Using the funnel, add the baking soda to each balloon.
2. Pour the vinegar into the bottle.
3. Carefully fit the balloon over the bottle opening, being careful not to drop the baking soda into the vinegar.
4. Once the balloon is secured, lift the balloon to drop the baking soda into the vinegar.
5. Observe the chemical reaction and its effect on the balloon.

Credit: https://www.education.com/science-fair/article/balloon-gas-chemical-reaction/

3

EXPLODING BOOMERANGS

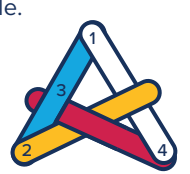
This experiment demonstrates the difference between potential energy and kinetic energy. As the popsicle sticks are placed together using pressure, potential energy builds within the boomerang. When the boomerang is thrown and hits its target, that potential energy is converted to kinetic energy, forcing the popsicle sticks to fly apart.

YOU'LL NEED

- Jumbo colored craft sticks (4 per person)

DIRECTIONS

1. Place the white stick on top of the blue stick at about a 45-55 degree angle.
2. Take the yellow stick and place it on the other end of the blue stick with the opposite end resting on the center of the white stick.



3. Tuck the red stick underneath the blue stick (but still on top of the yellow stick).
4. Tuck the other end of the red stick under the end of the white stick.
5. Throw the boomerang at a target affixed to the wall and observe the reaction.

Credit: http://www.icanteachmychild.com/craft-stick-exploding-boomerangs