

# Invisible Fire Extinguisher

Learn about the three things needed to create fire, and about the density of gases!

## Materials

- Plastic Tray
- Tea Light Candles
- 1 Large plastic cup
- 1 Small Plastic Cup
- Lighter
- 2 tbsp baking soda
- Vinegar

## Instructions

1. Place tea light candles on the plastic tray. Identify the three parts of making a fire:
  - a. Fuel- Candle
  - b. Heat Source- Lighter
  - c. Oxygen-Air
2. Light the tea lights
3. Mix 2 tbsp of baking soda and a splash of vinegar in the large cup
4. Quickly tilt the cup over the tea light as the reaction is happening. **\*\*Do not spill the mixture on the candles\*\***. The candles should go out

## The Science Behind it

The reaction between the baking soda (Sodium Bicarbonate) and Vinegar (Acetic Acid) creates CO<sub>2</sub> gas (as demonstrated in the equation chart). CO<sub>2</sub> gas is denser than air, therefore, gravity will allow the gas to travel downwards instead of straight up. As you tilt the cup, the CO<sub>2</sub> gas will pour out, cutting the oxygen off from the fire, extinguishing the flame.