

# FIRE EXTINGUISHER

## Dangerous Experiment!



### YOU WILL NEED:

- Bicarbonate of Soda
- 1/2 cup vinegar
- A large glass or ceramic bowl (not plastic)
- A large measuring jug
- Tea light candles and matches

### WHAT TO DO:

**An adult must supervise the lighting of candles.**

1. Place the tea lights in the large bowl and light them.
2. Put 2 tablespoons of bicarbonate of soda in the large measuring jug.
3. Add the vinegar and allow the foam to bubble up and die down. (The foam must not bubble over the jug)
4. Gently pour the jug over the bowl. (DO NOT LET THE FOAM OR LIQUID POUR OUT)

### HOW DOES IT WORK?

There is some pretty fancy chemistry going on in that little bowl of yours. It turns out that vinegar is an acid, and it reacts with the bicarbonate of soda to make carbon dioxide gas.

Carbon dioxide gas is heavier than air so it stays in the measuring jug. When you pour the jug over the candles, the gas pours out and puts the flames out.

Fire needs three things to live: Fuel, heat and oxygen. You are taking away the oxygen by displacing it with carbon dioxide gas.

### MAKE IT AN EXPERIMENT

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer this question:

1. What quantities (ratio) of vinegar and bicarbonate of soda makes the most gas?