



# Fizzy Fireworks

Fireworks are vibrant displays of light that brighten the sky on special occasions! Mimic these eye-catching displays using safe household liquids. Observe the chemical reaction that causes the colors spread.

## TEKS:

SCI 4.5A: The student is expected to measure, compare, and contrast physical properties of matter, including size, mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float.

SCI 4.5C: The student is expected to compare and contrast a variety of mixtures and solutions.

SCI 5.5D: The student is expected to identify changes that can occur in the physical properties of the ingredients of solutions, such as dissolving salt in water or adding lemon juice to water.

SCI 6.5D: The student is expected to identify the formation of a new substance by using the evidence of a possible chemical change, such as production of a gas, change in temperature, production of a precipitate, or color change.

## Materials:

- Baking soda
- Coffee filters
- Contact paper
- Food coloring
- Measuring spoon
- Spray bottle
- Tape
- Vinegar
- Water

## How To:

1. Cover a table with sticky contact paper (sticky side up) and tape it down to secure it.
2. Stick blank coffee filters all over the contact paper.
3. Fill a spray bottle with 3 parts vinegar to 1 part water.
4. Scoop some baking soda and sprinkle it on top of the coffee filters.

**31 Days of STEM FUN!**

[www.destember.org](http://www.destember.org) | [#deSTEMber](https://twitter.com/deSTEMber) | © 2017 by Girlstart [www.girlstart.org](http://www.girlstart.org)

DeSTEMber is a trademark of Girlstart

5. Put drops of food coloring onto the contact paper while another person starts spraying the baking soda covered coffee filters with the vinegar and water solution.
6. Observe what happens when the vinegar hits the baking soda!
7. Add more colors, water, or baking soda until your fireworks have fizzed out.
8. Let the coffee filters dry, remove them, lay out some new ones, and start again to start another fireworks display!

### **STEM Explanation:**

Sodium bicarbonate (better known by its common name “baking soda”) and acetic acid (more commonly known as “vinegar”) react in each other’s presence, yielding water and carbon dioxide gas. This release of gas is what causes the fizzing you observed in this activity. Chemical reactions are happening all around you! Can you think of any others?

### **Career Connection:**

*Chemists* study the properties of matter. There are many specializations within chemistry, but all chemists seek to understand the structure, properties, and compositions of various substances. They also study the dynamics of systems and processes at a molecular level and reactions between molecules.

### **Resource:**

<http://www.toddlerapproved.com/2012/07/fizzing-fireworks-readforgood.html>

**31 Days of STEM FUN!**

[www.destember.org](http://www.destember.org) | [#deSTEMber](https://twitter.com/deSTEMber) | © 2017 by Girlstart [www.girlstart.org](http://www.girlstart.org)

DeSTEMber is a trademark of Girlstart