**Fizzing and Foaming Experiment**

Ingredients:

* 1 tablespoon of baking soda (sodium bicarbonate)
* 1 tablespoon of laundry detergent
* 3/4 cup of water
* 1/4 cup of vinegar
* several drops of food coloring
* a 12-ounce drinking glass
* a waterproof (plastic or metal) tray
* a teaspoon

Directions:

* Place the drinking glass on the tray.
* Add the baking soda and laundry detergent to the glass.
* Add the water and a few drops of food coloring.
* Gently stir the mixture to mix the contents of the glass.
* Quickly pour the vinegar into the glass.

What happened and why:

* In this experiment, the fizz is produced by a chemical reaction between baking soda and vinegar.
* Baking soda and vinegar react, and one of the products of the reaction is carbon dioxide gas.
* This gas forms bubbles that are surrounded by the liquid.
* The laundry detergent makes the bubbles last longer, and a foam is produced.
* The volume of the gas produced and trapped in the foam is much greater than the glass can hold, so some of it spills over the top of the glass.
* Baking soda is sodium bicarbonate.
* Vinegar contains acetic acid dissolved in water.
* Sodium bicarbonate reacts with most acids.
* The products of the reaction with vinegar are carbon dioxide gas, sodium acetate, and water.
* The reaction of sodium bicarbonate to form carbon dioxide gas is the basis of its use as a leavening agent in baking.
* Cakes are solid foams.
* The foam is produced when bubbles of carbon dioxide from the reaction of sodium bicarbonate are trapped in the batter.
* As the cake bakes, the batter dries, and the trapped bubbles of carbon dioxide form the holes in the cake.