

Unleash the Power of the Lemon Volcano!

August 22, 2024 / DIY / STEM Activities / Chemistry / Ages 3 - 8 / Lemon Volcano



Tags: Chemistry; Chemical Reaction; Kitchen Science; Simple Experiments

Create a volcanic eruption at home using simple kitchen ingredients!

- Age: 3-8
- Time: Less than 30 minutes
- Mess Level: Messy

Materials Needed:

- Tray
- Baking soda
- Lemon
- Spoon
- Food colouring
- Dish soap or laundry detergent
- Knife



Step-by-Step Instructions:

1. Cut off the top and bottom of the lemon so that it can stand upright.



2. Remove the lemon seeds but keep the juice inside.



3. Add 4 drops of food colouring to the centre of the lemon and squeeze in some dish soap.



4. Add a spoonful of baking soda, stir, and observe the bubbling reaction. To keep the reaction going, you can continue adding baking soda, food colouring, and dish soap. Stirring and squeezing the lemon will release more juice, enhancing the bubbling reaction.



The Science Behind It:

This experiment involves an acid-base chemical reaction. Lemon juice contains a high amount of citric acid (acidic), which reacts with baking soda (alkaline) to produce carbon dioxide gas, seen as bubbles. Stirring and squeezing accelerate the chemical reaction, leading to a more intense "volcanic eruption."

Why Add Dish Soap?

Adding dish soap increases the amount of foam. The gas produced by the reaction between citric acid and baking soda forms bubbles in the dish soap, creating more foam that overflows, resulting in a larger and longer-lasting eruption.