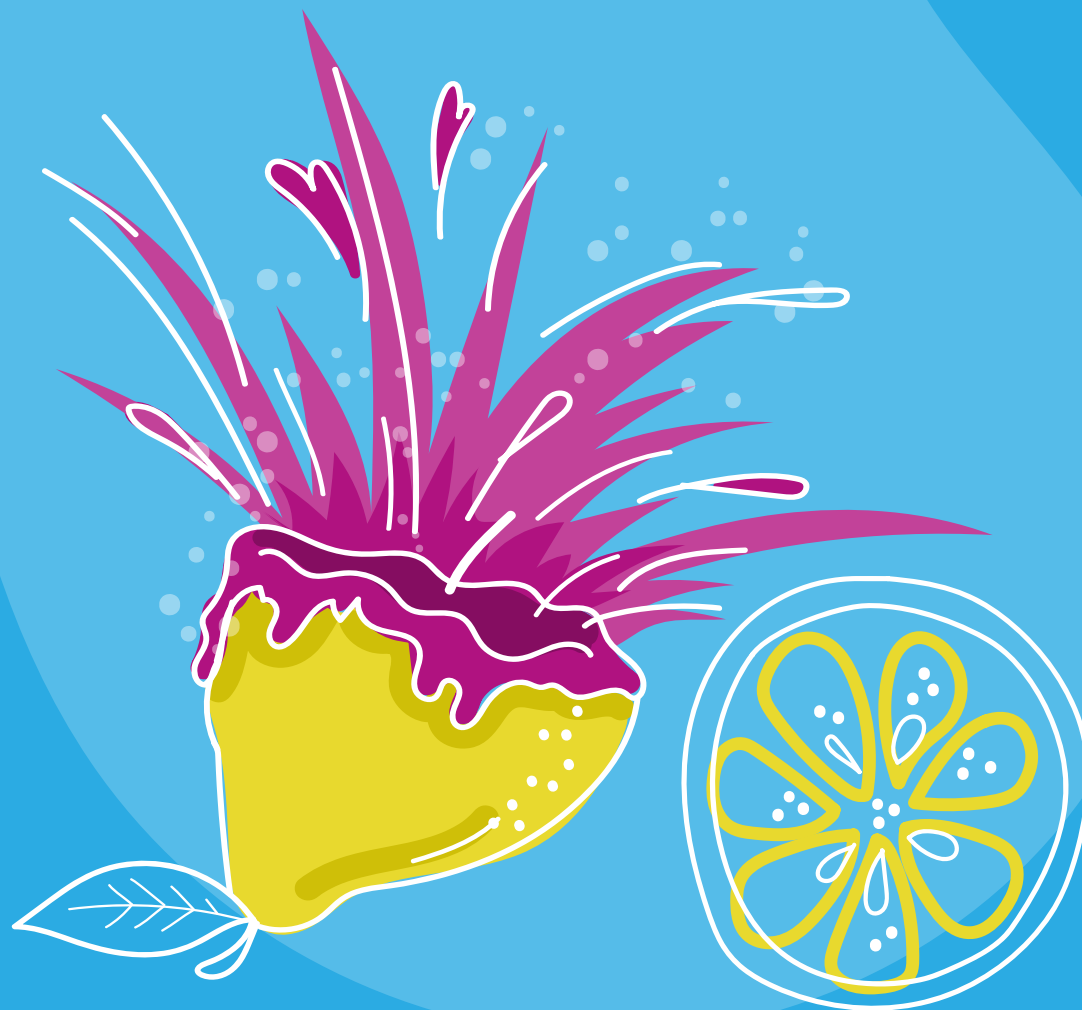


ACTIVITY

1

CHEMISTRY AT HOME

# ERUPTING LEMONS AND LIMES



●●○ MEDIUM



6+



30 MINS

*Including prep*



Try a simple, safe chemical reaction at home!  
Use a lemon or lime to make a fun, fizzy foam!

ENCOURAGING TOMORROW'S CHEMISTS TODAY

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# ERUPTING LEMONS AND LIMES

Did you know you can use a lemon, bicarbonate of soda and vinegar to make a fizzy potion?

The acidic juice in the lemon reacts with the alkaline bicarbonate of soda releasing carbon dioxide gas and water. This fizzy reaction is fun to watch and can be used in lots of different science experiments.

## You will need

1 lemon  
1 lime  
Bicarbonate of soda  
Vinegar  
Food colouring *optional*  
Teaspoon  
Knife *adult supervision needed*  
Washing up liquid  
Tray or plate  
Small cups or containers  
Timer



## Safety

Take care using vinegar and other household acidic substances.

Use a tray or plate *it can get messy!*

This activity should be supervised at all times.

## Instructions

### Activity 1

#### Bicarbonate of soda and vinegar

- Place half a teaspoon of bicarbonate of soda in one small container.
- Add a teaspoon of vinegar, and watch the fizz!

### Activity 2

#### Bicarbonate of soda, vinegar and washing up liquid

- Place half a teaspoon of bicarbonate of soda and a small squirt of washing up liquid in a clean container and mix well.
- Add a teaspoon of vinegar.
- This time the fizzy mixture should be thicker and more foam like because of the washing up liquid.

### Activity 3

#### Bicarbonate of soda and lemon / lime

- Carefully (ask an adult to help) slice the top off a lemon or lime about one third of the way down. Use the spoon to squish the inside of the lemon / lime up a little.
- Drop about half a teaspoon of bicarbonate of soda into the lemon / lime and use a small spoon to squish it up inside the lemon / lime.
- Add a little washing up liquid to get a thicker foam.

## Challenge

Sam wants to create lemon or lime eruptions for a school project and wants to choose the one that works the best.

Set up a fair test for her to work out which give the most fizz.

### Things to keep the same

- Amount of lemon / lime juice
- Amount of bicarbonate of soda

### Things to change

- Whether lemon or lime juice is used

### What to measure

- How high the fizz reaches up the container.
- How long the reaction takes before stopping completely.
- Squeeze the same amount of lemon and lime juice into two identical containers. About 20ml should be enough.
- Add half a teaspoon of bicarbonate of soda into each container.
- Time how long the reaction lasts and how high up the container the fizz reaches.



**SHOULD SAM USE  
LEMON OR LIME JUICE,  
TO MAKE THE MOST FIZZ?**



## What's happening?

An alkali (bicarbonate of soda) and acid (vinegar or lemon/lime juice) react to neutralise each other. When they react together they release carbon dioxide gas which forms the bubbles that you can see. Adding in a little washing up liquid to the reaction makes the foam thicker, a little like lava, which is why this is a great reaction to make a volcano project with!

