



Home Science Resources:

Rainbow exploding volcanoes!

This video explores **acids and alkalis** by creating **RAINBOW EXPLODING VOLCANOES**. Food colouring, vinegar and bicarbonate of soda will be reacted together to create “volcanoes” finishing with a scientific explanation of the reaction.

By the end of the video you should have an understanding of:

- What the difference between an acid and alkali is
- What happens when an acid and alkali react
- What causes excess gas bubble formation

We can't wait to see your pretty patterns!

What will you need for your homemade volcanoes?

- **White vinegar:** Any vinegar is fine, I used distilled malt vinegar. **Lemon juice** is also fine.
- **Bicarbonate of soda:** If you don't have it, **baking powder** is fine.
- **Food colouring:** A variety of food colouring would be great. Equally, you can use things like beetroot juice or turmeric to naturally colour your solutions, or a drop of paint!
- **Teaspoons:** lots if possible so you don't mix all the colours
- **Glass jars/cups/glasses/mugs/bowls:** to make your volcanoes in!
- An outdoor space or garden is ideal, but if you don't have that then make sure you put some newspaper down or even do the experiment in a large mixing bowl/the sink!

How does this experiment fit with the curriculum:

Fit with the GCSE chemistry and biology curricula:

- Explain that reactions involve the formation of new materials, such as the changes associated with action of acid on bicarbonate of soda (**KS1 and KS2 science**)
- Define acids and alkalis, understand the pH for measuring acidity/alkalinity, and the reaction of acids and alkalis to produce salt and water. (**KS3 chemistry**)
- pH as a measure of hydrogen ion concentration, and its numerical scale (**KS4 chemistry**)

Please do send us in your creations! ncbe@reading.ac.uk, or Tweet/Instagram

We'd love to know how you got on!



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Glossary - in case you need a recap of any of the terms!

Acid – an item with a low pH, so therefore contains a high concentration of hydrogen (H^+ ions). Acid foods include vinegar and lemon juice and provide a sour taste. They are at the left-hand side of the pH scale, represented by red/orange colours.

Alkali – an item with a high pH, it contains a lot of OH^- ions and is said to be alkaline. This includes things like soap, bicarbonate of soda, baking powder and drain cleaner.

Decomposition reaction – a chemical reaction when a single compound (e.g. carbonic acid) breaks down into two or more new compounds (such as carbon dioxide and water in our case).

pH – a logarithmic scale which measures the concentration of hydrogen ions in a solution, the left-hand side of the scale represents acidity (more H^+ ions) and the right-hand side represents alkalinity (more OH^- ions).