

Build an erupting volcano

Make your own mini Mount Vesuvius.

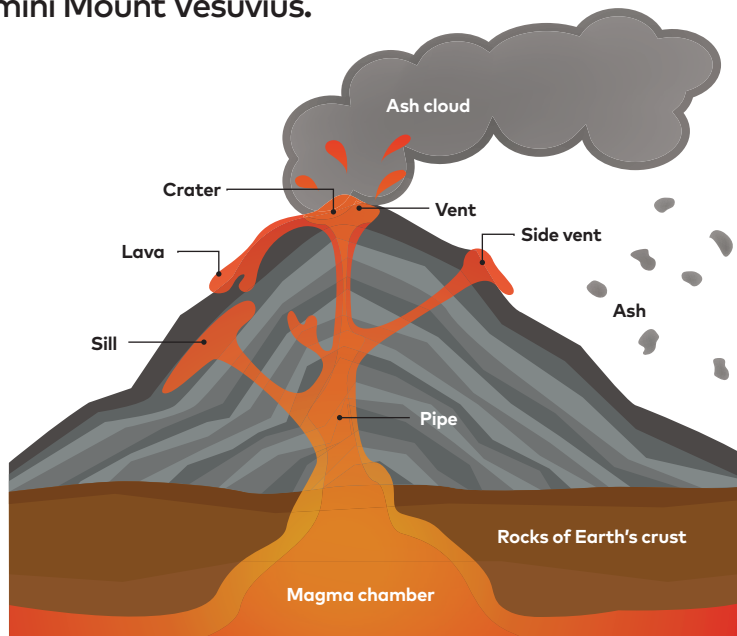
What you need

- Clay or playdough
- Paint
- An empty 500 ml bottle
- Funnel

- 2 tbsp baking soda
- A few drops of red food colouring
- 250 ml vinegar

EXTRAS:

- 500 ml orange soda
- One packet of mentos



How does it work?

Just like an onion, Earth is made up of layers. The top layer, known as the crust, isn't one piece of solid rock. It's broken up into giant slabs, called tectonic plates. These plates float on top of the mantle – the layer of semi-molten rock underneath the crust – and constantly slide past and bump into each other. Where one tectonic plate slides underneath another, parts of the mantle melts and the molten rock, called magma, rises to the surface. The magma builds up in a chamber near the surface, until the pressure causes the hot, liquid rock to be pushed up and erupt.

In this experiment, mixing baking soda with vinegar causes a chemical reaction. Vinegar is an acid and baking soda is a base (the opposite of an acid). The reaction releases carbon dioxide gas. This bubbles up in the bottle, forcing the liquid to froth out of the top.



1 Use a funnel to get the baking soda into your empty bottle. Then, mould the clay around the bottle to make a volcano shape.



2 Paint your volcano using brown, red and orange paint – make it look like it is fearsome and erupting. Leave to dry completely.



FROM THE SEA TO THE SKY

Mauna Loa in Hawaii, US is the largest active volcano on Earth. The top stands more than 9,000 metres from its base on the seafloor.



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3 Now, it's time for the fun part. Add a few drops of the red food colouring to your vinegar and mix it together well.



4 Pour the mixture slowly into the top of your volcano and watch as it erupts. Add more baking soda and vinegar to repeat the eruption.



5 Take it further! Try swapping your empty bottle for a bottle of orange soda. Next, pop four or five mentos and watch what happens.