

## Topic: Natural disasters

### Make your own volcano

<http://www.sciencebob.com/experiments/volcano.php>

#### What you need

- A volcano - Talk to an art teacher about making a volcano out of paper mache or plaster. You can also use clay or if you're in a hurry to make your volcano, use a mound of dirt outside.
- A container
- Red and yellow food coloring (optional)
- Vinegar
- Liquid dish washing soap

#### What to do

- 1.Go outside or prepare for some clean-up inside
- 2.Put the container into the volcano at the top
- 3.Add two spoonfuls of baking soda
- 4.Add about a spoonful of dish soap
- 5.Add about 5 drops each of the red and yellow food coloring

Now for the eruption!

6.Add about an ounce of the vinegar into the container and watch what your volcano come alive.

#### How does it work?

A VOLCANO is produced over thousands of years as heat and pressure build up. That aspect of a volcano is very difficult to recreate in a home experiment. However, this volcano will give you an idea of what it might look like when a volcano erupts flowing lava. This is a classic experiment in which a CHEMICAL reaction can create the appearance of a PHYSICAL volcano eruption. You should look at pictures of volcanoes to be familiar with the different types. (A SHIELD volcano, for example is the most common kind of volcano, and yet few people know about them) The reaction will bubble up and flow down the side like a real volcano (only much faster!) Look for videos of volcanoes erupting and be sure that you understand how heat and pressure work to really make volcanoes erupt.

#### Make it an experiment

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Does vinegar temperature affect how fast the volcano erupts?
2. Does the shape of the volcano affect the direction the eruption travels?
3. What can be added to the "lava" to slow it down and make it more like real lava?
4. What combination of vinegar and baking soda creates the biggest eruption?

## **Topic: Natural disasters**

### **Erupting Volcano**

Things you will need:

- Bi-carb soda
- A container to hold the ingredients
- Vinegar
- Paper towels or cloth (in case of any spills)
- Food colouring

Instructions:

1. Place some of the bi-carb soda into your container.
2. Pour in a little food colouring.
3. Pour in some vinegar.
4. Watch as the reaction takes place! You may like to use playdough or clay to build your volcano! Don't forget to place the container inside to hold the ingredients

## Topic: Natural disasters

### Tornado in a Bottle

[http://www.madaboutsience.com.au/store/index.php?main\\_page=page&id=17](http://www.madaboutsience.com.au/store/index.php?main_page=page&id=17)

Tame the destructive force of a tornado by creating a mini one in a bottle. It's fun and easy! Suitable for kids aged 4+

#### What you will need:

- Empty plastic bottle with lid. Any size, 500ml works well
- Two drops of liquid detergent (clear detergent works best)
- Teaspoon of glitter (optional)
- Food colouring (optional)

#### What to do:

1. Almost fill the plastic bottle with cold tap water.
2. Add the liquid detergent.
3. Add glitter to the bottle.
4. Screw on the cap tightly.
5. Hold the bottle by the neck and turn it upside down. Rotate the bottle in a circular motion hard and fast. When you stop rotating a mini-tornado should form inside the bottle. Some find it easier to hold the bottle horizontally and then with a hard flick of the wrist flip it upside down. It may take several goes before you get it right – all part of the fun.

Note: add a small amount of food dye for a colourful effect, or some tiny animal toys and watch them swirl in the vortex. Coloured lamp oil makes just the vortex coloured.

#### How does it work?

Most people encounter their first vortex as bath water drains from the bathtub. A vortex is a type of motion that causes liquids and gases to swirl around a center line. In this experiment you have created a water vortex by rotating the bottle. The vortex looks like a tornado in the bottle and is very similar to the effect you see with a real tornado except the medium is water as opposed to air.

For a longer lasting tornado in a bottle check out our vortex valves!