The Volcano

Time
2 mins per eruption

WHAT YOU'LL NEED

(Provided in Primary Science Pack)

- Ice Scoop
- Dry Ice

Always replace lid on dry ice box immediately after use.

You will also need:

- Volcano Structure

BACKGROUND

In preparation for the lesson make a volcano out of paper mache or plaster as a class craft project. You can also use clay or if there is no time make one out of mud using soil and water! Ensure that there is room in the middle of the model volcano to fit the entire scoop supplied by Chillistick. The scoop needs to be sitting open-end up in the middle of the volcano but ideally should not be visible and you need to be able to get it out after each volcano demo!

What To Do

1. Place the scoop in the volcano.
2. Pour about 5 – 10 pieces of dry ice into the scoop using a coffee mug.
3. Get some hot water, about the temperature of a cup of tea, (hot tap water should be fine).
4. Gather the class around the volcano and then pour half a coffee mug (no more than 150ml of hot water) into the scoop.

You will see a spectacular release of fog which will erupt from the top of the volcano and then flow down around the volcano. This is well worth repeating and showing other classes.

What's Happening?

When dry ice and hot water mix the result is 'fog', lots of tiny drops of water in a cloud. The fog you have created is the same as the fog seen in nature. (It is also the same fog effects that your class may have seen on TV shows!)

Make this an experiment

To turn this demonstration into a true experiment ask the junior scientists to answer these questions:

- **How does the temperature of the water effect the fog?**
- **Why is the fog white?**
- **How can we make a bigger fog effect?**
- **What colour is Carbon Dioxide gas?**

TEACHER'S NOTES

Using the equipment supplied and following these instructions means that the demonstration is very safe – as always please read the safety Information on dry ice provided with these downloads and available from www.chillistick.com.

Hot water encourages the formation of fog, colder water produces far less fog. You can show this by adding very chilled water to some dry ice in the scoop and compare this to adding hot water.

Why is the fog white? This is a tough question to answer simply but it likely to be asked! The fog is made up of tiny drops of water and these droplets are so small they scatter light. The result is that the fog looks white in the same way that clouds and fog from weather systems looks white.

CO_2 gas is colourless (we know this because our breath is usually invisible!).

To make a bigger fog effect you need more ice and more hot water, this is best shown with 'how to make the perfect fog effect' experiment available to download at www.chillistick.com