Volcano - How did this volcano get here?

Fact

- "This volcano" is Mt Victoria, in Devonport, Auckland
- A volcano marks the point where molten rock, from deep within the earth, has reached the earth's surface.
- As pressure in the molten rock builds up it needs to escape somewhere. So it forces its way up "fissures" which are narrow cracks in the earth's crust. This molten rock is called magma.
- Once the magma erupts through the earth's surface it's called lava. And as the built-up lava flows cool and harden into hills we call this a volcano.
- The type, viscosity (runniness) and density of magma and how it erupts decides what shape forms on the earth's crust. If the lava is thick and sticky and oozes from the earth's crust it will travel like flowing porridge and just add a thick layer to the earth's crust. If it's thick and sticky and fountains upward it will make the typical volcanic cone shape.
- The top layer of the built-up lava flow cools and hardens as the underneath stuff continues to ooze and cool slowly.
- Mt Victoria was formed hundreds of years ago when the pressure of the magma about 100 kms below the earth's surface forced the magma up and out into a volcano.

Do you know

- If we could have a bird's eye view of Mt Victoria, we would see that it is a horseshoe shaped volcano. The first eruptions made a nice round cone shape. One side of the volcano collapsed when the lava flow erupted more fiercely from one side.
- Volcanic eruptions vary in force from gentle to violent depending on how much pressure is built up in the magma from gases.
- Auckland is built on a volcanic field – a place where there has been lots of volcanic activity. Mt Victoria is one of 50 volcanoes in the Auckland area.

Experiments you can do

Make your own volcanic eruption

<u>What you need:</u>

A small plastic container with a lid (like an old film canister)
Some water
An antacid tablet
A space outside

<u>What you do:</u>

First of all, fill the container with water until it is half full. Have the lid handy because as soon as you put the tablet into the water, you'll need to put the lid on. Once the lid is on put the container on the ground and move away from it – quick as you can – about 2 meters.

What happens? The lid should come flying off the container. The as the antacid tablet dissolves in the water it produces carbon dioxide. The carbon dioxide gas builds up in the container until there is too much and the pressure is strong enough to push the top of the container off.

That's what happens to the earth when the hot magma wants to come out. And that's how a volcano is made.

Under Pressure
What you need:
An adult to help
2 small bottles full of a fizzy drink.
A place outside where it doesn't matter if you make a sticky mess

What you do:
Shake one of the bottles hard. Predict what will happen when you unscrew both the lids at the same time. Try it and see. Can you explain the different results?
The fizz is carbon dioxide that has been squashed in there under pressure the more you shake the bottle the more pressure the carbon dioxide is in and it wants to get out!

Other Investigations
Make a volcano look alike
What you need:
A sandpit
2 tablespoons of baking soda
Half a cup of vinegar
What you do:
Make a volcano shape in the sand and hollow out a well in the top of the volcano. Put in the baking soda and then pour in the vinegar.
The vinegar reacts with the baking soda to make a chemical reaction and bubbles out over the top of the sand volcano just like a real one does.

Are there any volcanoes in your region? Maybe they're extinct like nearly all of the ones in Auckland? Or maybe they're active like Mt Ruapehu or White Island. Find out more about these amazing acts of nature.

Jokes
What does a volcano wear when it goes out to town? A LavaLava.
From Jo Wheat