

Unit 3 Volcanoes

1. Whole class instruction

Objective: To explain the basic ideas of volcanicity.

1.1. Go to Mountain>>Multimedia>>Section 7

“Do you know what a lava flow is? Let’s look at video 1.3 to start our exploration.”

- ▶ Start the video and look at the nature of lava.

1.2. Go to Textbook pages 10-11

“What are the features of a (composite) volcano?”

- ▶ Go over the diagram and make sure children know the words for the various parts of a volcano.
- ▶ Make sure they are aware of the differences between lava and ash.

1.3. Go to Textbook pages 12-13

“What is it like to see a volcano explode?”

- ▶ Use the introduction case study of Mt. St. Helens as a case study of a volcano that explodes sideways (see also Pompeii whose later stages were exactly like this).
- ▶ Open the Volcanoes and earthquake textbook and find Hawaii pages 8-9. Now flip between this and Mt. St. Helens to show there are two very different kinds of eruption. Notice that there can be many kinds of eruption between these two ends of a spectrum, and that this is what gives variety to world volcanoes.



1.3 shows lava flowing over a daily cycle.

Spend time with section 7 (Volcanoes) of the multimedia section.

Note that there are several accompanying books: 'Active volcanoes of the world' creative topic for everyone, and 'Volcanoes and earthquakes' textbook for the more able.

2a. Group exploration

2.1. TG photocopiable page 44



- ▶ A simple experiment involves making a frothy substance flow. Use a carbonated water bottle where gas is dissolved under pressure (as in a magma chamber). Shake the bottle, then open it to allow the froth to come out. No chemical reaction is involved, just a change of state from liquid to gas, and this is what happens in a volcano.

Fizzy water bottle that has not been opened to act as a magma chamber.

2b. Literacy activity

- ▶ The action of a volcano is described in Pompeii, literacy unit 4.

Putting flour into a puffer bottle and holding it upright and then puffing the flour into the air is a really messy experiment that indicates exactly what happens when ash rises and covers the landscape, with more falling close to the cone and less farther away. A fan adds wind direction.

3. Plenary session

- ▶ Get children to say what they think they have learned and present it perhaps on the whiteboard or in their own books.

4. Further work/homework

- ▶ Ask children to read the 'Active volcanoes of the world' creative topic and find out more about any volcano of their choice using the World Volcanoes section of the multimedia area.

Alternatively, use talcum powder in a puffer bottle.

Note: I am personally not in favour of chemical reactions that make froth as this is not a good model of what happens. Changes of state (liquid to gas/solid) and pressure are involved, not reactions. So baking powder and vinegar do not imply the correct process.