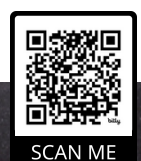


# Teaching Notes & Resources

Key Stage 2

Themes: Volcanoes | The Natural World | Natural Hazards |  
Human & Physical Geography

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# Introduction

## About the Book

Spewing out fountains of red-hot lava and toxic plumes of smoke, volcanoes are dangerous and deadly. But every volcano is different - in shape and size, location and destructiveness.

Find out about these amazing natural phenomena and see how they're formed, where they are in the world and why some explode so violently. Discover why people live so close to volcanoes and how scientists are helping to predict when the next eruptions might occur.

## About the Author

Clive Gifford is the author of more than 150 children's books including *Eye Benders*, winner of the Royal Society Young People's Book Prize, Royal Society-nominated *Out of This World* and *Cool Technology* which won the School Library Association Information Book Award. His book, *The Colours of History*, won the Blue Peter Book Awards' Best Book With Facts. He has travelled through 70 countries, run a computer games company and taken part in all manner of sports from parachuting and gliding to Ultimate Frisbee.

The consultant, Katharine Cashman, is Professor of Volcanology at the University of Oregon and has been a judge for the Royal Society Young People's Book Prize.



# Introducing the topic

Answer the following questions in preparation for learning about the themes and ideas introduced in the book: *The Explosive History of Volcanoes*.

- How would you spot a volcano? What natural features might they possess?
- Why are some volcanoes very dangerous? What might they do?
- In which continents will you find a volcano?
- Can you name any volcanoes?
- What is the name for a scientist who studies volcanoes and their activity?



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# Key Terms and Their Definitions

Before you read *The Explosive History of Volcanoes*, create a glossary of key vocabulary and important scientific terms. Find a starter list below; add more words to your glossary as you read.

**ACTIVE**

**ASH**

**CALDERA**

**CRUST**

**DORMANT**

**ERUPTION**

**EXTINCT**

**GEOHERMAL ENERGY**

**LAVA**

**MAGMA**

**MANTLE**

**PLATE BOUNDARY**

**TECHTONIC PLATE**

**VENT**

**VOLCANOLOGIST**



## CHALLENGE

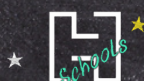
Create your own labelled illustration of a volcano. You can use pages 6–7 to help. Add the labels below to your illustration.

- 1) Hot, melted rock builds up in the magma chamber, usually under great pressure
- 2) A side vent also lets magma reach the surface and flow as lava
- 3) Lava flows out of the main vent and down the slopes
- 4) The main vent is the large, central opening in many volcanoes
- 5) Ash, solid particles of lava and gases form thick clouds during an eruption
- 6) Layers of ash and lava from the eruption often fall and form a cone shape
- 7) Fissures are cracks or fractures in rocks on the volcano's slopes through which lava can ooze out



SCAN ME

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SCAN ME

# Case Study - Mount Vesuvius

Read pages 30–31 in which we learn more about Mount Vesuvius which was responsible for one of the most explosive volcanic eruptions in history...

## DISCUSSION QUESTIONS

- 1) In which country will you find Mount Vesuvius? Which former 'bustling Roman towns' lay beneath it?
- 2) What were the warning signs that Mount Vesuvius was about to erupt? When did it erupt?
- 3) How high was the column of gas and ash it created? How many tonnes of molten rock and ash were ejected?
- 4) What 'swept down the slopes of the volcano'? Note: Research any terms you don't know!
- 5) How long did it take for the two cities to be destroyed?
- 6) What lay preserved afterwards 'for almost 1,700 years'? Why is this amazing?

## CHALLENGE

In the book we learn that despite the risks, many people still settle or live near volcanoes as they are deemed 'sacred or part of their culture' and that 'nearly two million people live on the slopes of Mount Vesuvius' (page 38).

Use pages 12–13 to learn more about the threats of eruption with active volcanos such as Mount Vesuvius.

Create a warning poster for people living near active volcanoes and tourists visiting them explaining the risks of: Quakes; Rocks and Lava Bombs; Ash and Gas; Pyroclastic Flows; Lahars; Tsunamis



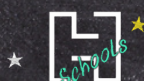
# Reflection Activities

- Volcanos are formed in different ways. Spend a few minutes reading about Stratovolcanoes, Ash and Cinder Cones, Shield Volcanoes, Calderas, and Lava Domes on pages 16–17. Write a quiz for a partner and see what you've learned about these different formations across the globe!
- Despite the dangers they can pose, there are a number of reasons why people choose to 'live with volcanoes'. Use pages 38–39 to create a pros and cons list of living near a volcano. Hold a class vote to see how many of you would choose to live with a volcano. Be prepared to explain your answer!
- Choose another infamous volcano from the Hall of Flame on pages 28–37 and create a 3D papier mache model of it.
- Read pages 18–27 to learn more about the Volcanic Explosivity Index (VEI) devised by Chris Newhall and Stephen Self. Create a graph and plot volcanic eruptions from history measuring between VEI 0 – VEI 8 showing their frequency and severity.
- On a globe or map, find and plot the locations of the volcanoes you have learned about today. What do you notice? How does this help you understand how volcanoes are formed? Clue: Pacific Ocean!
- On pages 44–45, we learn that volcanoes don't just exist on Earth but on other planets too! Wow! Create list of 5 Fun Facts about volcanoes that exist throughout the solar system.

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