

Teacher Resource

Volcano Warning

Focus Questions

1. Discuss the BTN story with another student and record the main points of your discussion.
2. Where is White Island? Find using Google Maps.
3. How many volcanoes in New Zealand are active?
4. What is the Ring of Fire?
5. In which ocean can you find the Ring of Fire?
6. What are tectonic plates? Explain using your own words.
7. What is another word for molten rock?
8. What clues can scientists look for to predict a volcanic eruption?
9. What is a volcano alert system?
10. What is the main challenge for scientists that manage volcano alert systems?

Activity

What do you see, think and wonder?

After watching the BTN *Volcano Warning* story, students will respond to the following questions:

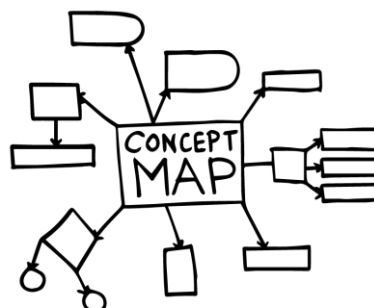
- What did you SEE in this video?
- What do you THINK about what you saw in this video?
- What did you LEARN from this story?
- What was SURPRISING about this story?
- What QUESTIONS do you have about this story?

Activity

Class Discussion

Discuss the BTN *Volcano Warning* story as a class. Ask students to record what they know about volcanoes on a mind map. What questions do they have? Use the following questions to help guide discussion:

- What is a volcano?
- What causes volcanoes?
- Where do volcanoes occur?
- Are there volcanoes in Australia?
- What volcanoes do you know?
- What happens when a volcano erupts?



Key Learning

Students will investigate what causes volcanoes to erupt and the impact that volcanic eruptions can have on people and the environment.

Curriculum

Science – Year 6

Sudden geological changes and extreme weather events can affect Earth's surface.

Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions.

Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives.

Scientific knowledge is used to solve problems and inform personal and community decisions.

Science – Years 5 & 6

With guidance, pose clarifying questions and make predictions about scientific investigations.

Activity

Volcano – Key Words

Below are some key words relating to volcanoes and their meaning. Students match the word to the meaning.

Key Word	Meaning
Lava	A large irregularly shaped slab of solid rock
Magma	The outermost surface of the Earth
Divergent plate boundary	Molten rock when it leaves the Earth's surface
Convergent plate boundary	Where tectonic plates move away from each other
Earth's crust	Where tectonic plates come together
Tectonic plate	Hot molten rock inside the Earth

Volcanoes Research

Students will be exploring volcanoes in more detail. They can develop their own key questions to investigate or respond to one or more of the questions below. Students can complete the following KWLH organiser to explore their knowledge and consider what they would like to know and learn.

<i>What do I <u>k</u>now?</i>	<i>What do I <u>w</u>ant to know?</i>	<i>What have I <u>l</u>earnt?</i>	<i><u>H</u>ow will I find out?</i>

Here are some possible questions for students to research:

- Why aren't there any volcanoes in Australia?
- How can you tell if a volcano is active, dormant or extinct?
- How can we predict when a volcano will erupt?
- What impact can volcanic eruptions have on people and the environment? Consider the negative and positive effects.
- What do plate tectonics have to do with volcanoes?
- What is meant by the 'Ring of Fire'?
- What are the different types of volcanoes?

Activity

Make your own volcano

In pairs or small groups, students will build a volcano, using these [step-by-step instructions](#). Students will use the following investigation framework before, during and after their investigation. Before starting this activity, introduce students to what a science investigation is and why we do them. Think of words that relate to “science investigation” and then find and explain their meanings. Here are some concepts to get you started: variable, observation, diagram, fair test and prediction.

Before the investigation

Before starting this experiment, respond to the following:

- What am I going to investigate?
- What do I think will happen? (make a prediction)
- Why do I think this will happen?
- What steps do I need to follow to investigate my prediction?
- What materials and equipment will I need? Make a list or draw and label each item.
- How will I make a fair test?
- What variables am I going to keep the same? For example, think about using different materials to change the shape of the volcano or adding more bi-carb soda.
- What do you know about this topic?
- What things may affect what you are investigating?
- Draw a labelled diagram to illustrate the investigation setup.
- Describe what you will be doing in each stage of the investigation.

Investigation

- Use these [step-by-step instructions](#) to make your own bi-carb soda volcano.
- Record your observations.
- Try using different amounts of bi-carb soda and vinegar and see what difference it makes to the eruption.

After the investigation

- Write a sentence that summarises what happened.
- Draw a labelled diagram of your observations to show what happened.
- Draw a labelled diagram of a volcano including Earth’s layers (crust, mantle, outer core and inner core). Explain some of the features of each layer.
- Was this what I expected to happen? Yes or no.
- Why do I think this happened? Use science ideas to explain. What gas is produced when bicarb is mixed with vinegar. Is this the same gas that is produced when a volcano erupts?
- What problems did I experience when I was doing the investigation?
- One important fact I learned when doing this investigation was...
- What I found surprising was...
- What I would do differently next time is...

Activity

BTN Volcano Stories

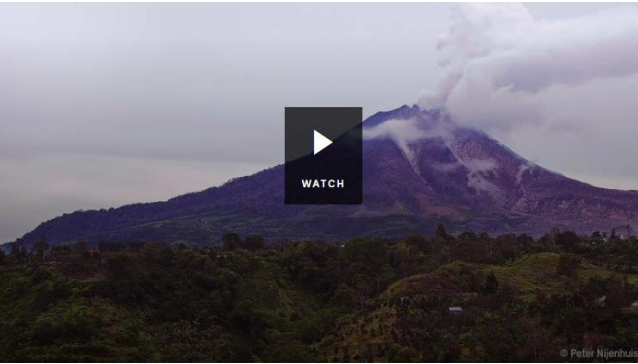
Students watch these BTN stories to learn more about volcanoes.



[Volcanoes Explained](#)



[Living near a volcano](#)



[Sleeping Volcanoes](#)



[Hawaii Volcano](#)

Activity

Volcanoes Quiz

Quiz Questions	Your Answer
1. What is magma? a. Hot molten rock under the Earth's surface b. Hot molten rock that has erupted onto the Earth's surface c. The Earth's crust	
2. The word volcano comes from Vulcan, the god of fire in Roman mythology. a. True b. False	
3. Which volcano buried the ancient Roman cities of Pompeii and Herculaneum? a. Mt Etna b. Mt Saint Helens c. Mt Vesuvius	

<p>4. Volcanoes only occur on land.</p> <p>a. True</p> <p>b. False</p>	
<p>5. Where is the largest volcano in the solar system?</p> <p>a. Earth</p> <p>b. Mars</p> <p>c. Saturn</p>	
<p>6. Which volcano is thought to have caused the loudest sound in history?</p> <p>a. Krakatoa</p> <p>b. Kilauea</p> <p>c. Mt Fuji</p>	
<p>7. A person who studies volcanoes is called a...</p> <p>a. Palaeontologist</p> <p>b. Seismologist</p> <p>c. Volcanologist</p>	

Answers: 1. a, 2. a, 3. c, 4. b, 5. b, 6. a, 7. c

Useful Websites

White Island: Scientists invent new volcano alert system - Newsround

<https://www.bbc.co.uk/newsround/53471089>

Guide: What causes volcanoes? - Newsround

<https://www.bbc.co.uk/newsround/33947859>

Volcanoes Explained – BTN

<https://www.bbc.co.uk/newsround/33947859>

Sleeping Volcanoes – BTN

<https://www.abc.net.au/btn/classroom/sleeping-volcanoes/10535820>

Living near a volcano – BTN

<https://www.abc.net.au/btn/classroom/living-near-a-volcanoe/10541064>

Hawaii Volcano – BTN

<https://www.abc.net.au/btn/classroom/hawaii-volcano/10489092>