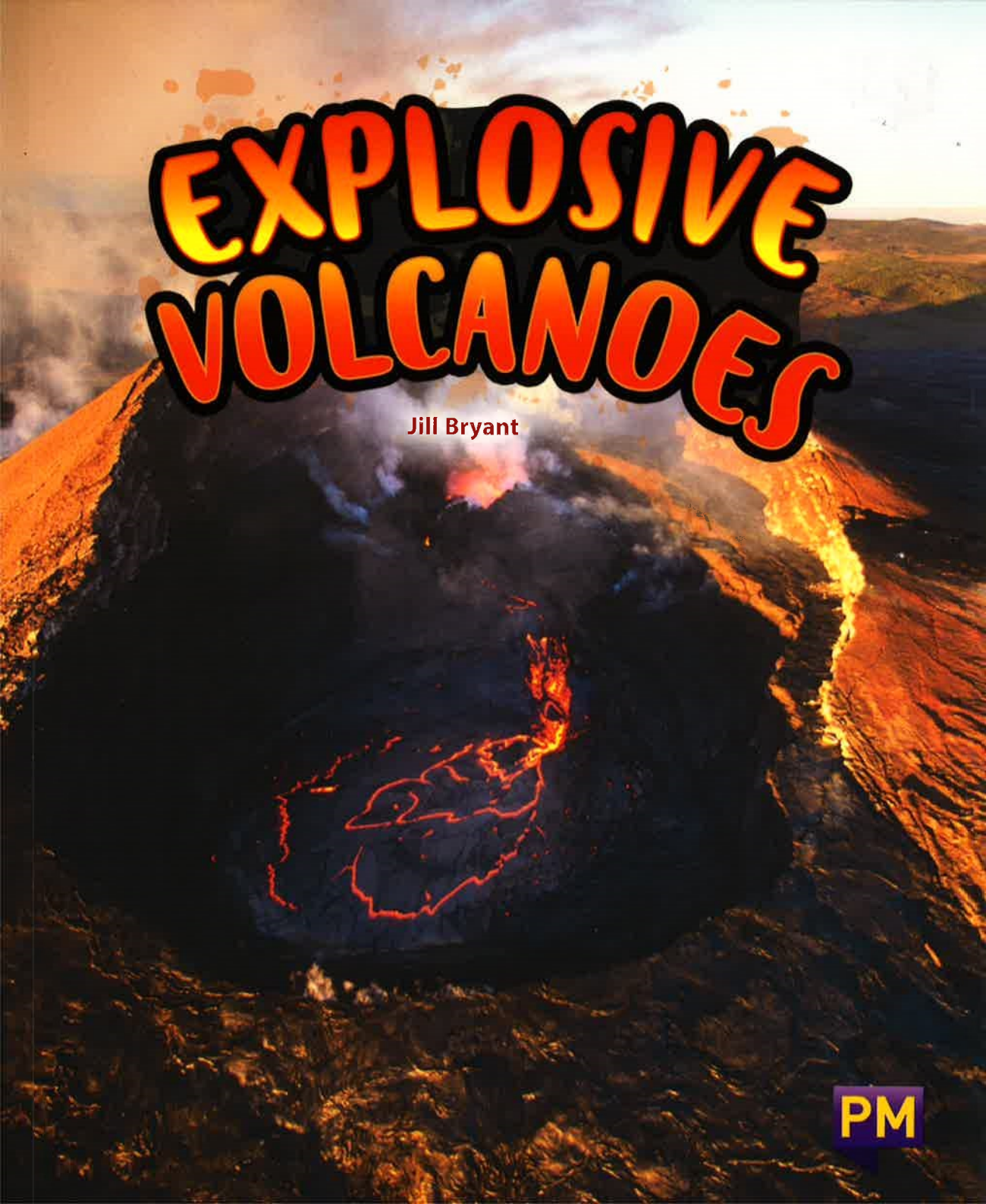

EXPLOSIVE VOLCANOES
Jill Bryant
PM

For teachers' inspection ONLY

Explosive Volcanoes

Level 30

Running Words 2633 **Text Types** Information Report (Informative) pages 2–26
Recount (Informative) pages 27–30

Curriculum Area Humanities – Geography

Think and Talk About ...

Fact boxes in the book encourage each student to explore the statements further and to share the information with others.

Oral Literacy Focus for Students

Key issues from the text to encourage critical thinking and stimulate group discussions:

1 Establish what would happen to living creatures and plant life in the vicinity of an erupting seamount.
2 Explain where hundreds of thousands of people in Japan would find safety during a volcanic eruption.
3 Justify why the Yellowstone supervolcano is nicknamed the 'Sleeping Giant'.
4 Prepare a list of questions to email to a volcanologist about one of the most interesting missions they have been involved in.
5 Imagine that a volcano near your home is erupting Describe the evacuation procedures taking place around you

Written Literacy Focus for Students

Key issue from the text to present in visual and written form to an audience:

1 Research the topic 'Famous Volcanoes'.
2 Prepare an information report on a volcano that is not featured in the book.
3 Edit and revise the text.
4 Present the text as a slide show with photographs.
5 Critically evaluate your presentation.

Links with other PM Guided Reading Books and Cards

Level 29	Book	Information Report/Exposition	*The Amazon Rainforest*
Level 30	Book	Information Report	*Unexplained Mysteries*

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EXPLOSIVE VOLCANOES

Jill Bryant

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Volcanic Vents

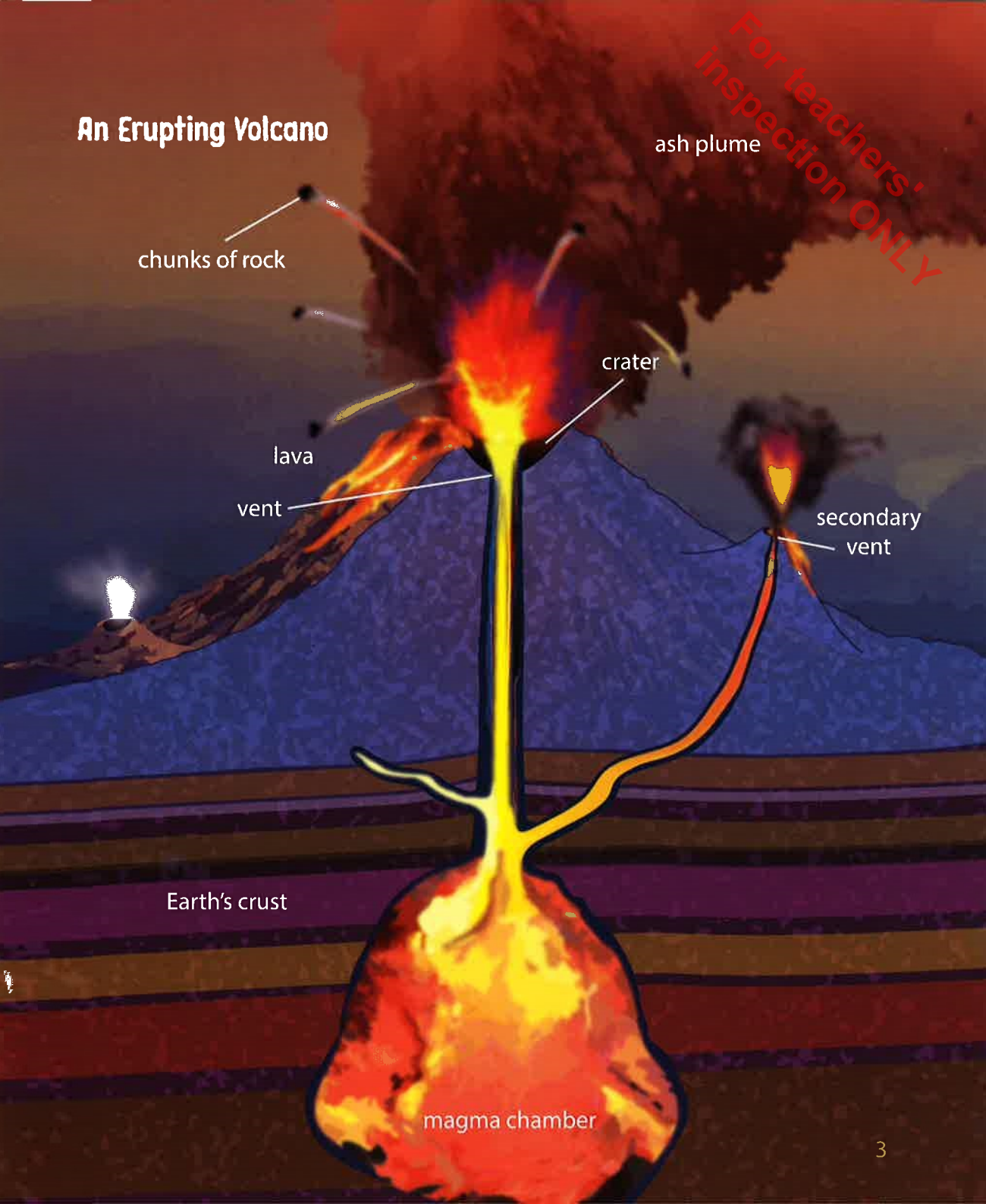
A volcano is an opening, or **vent**, that extends from the surface of Earth down through its crust. During a volcanic **eruption**, hot material gushes out of the vent, including melted rock, chunks of solid rock, gas and ash.

Volcanic ash is made up of crushed particles of rock, other minerals and fragments of volcanic glass. When a volcano erupts, a stream of ash and rock can shoot more than 30 kilometres into the air. This forms a tall column called an ash plume.

The hot, liquid rock that oozes below Earth's surface is called magma. Once it bursts through the vent and pours outside onto the ground, it is known as lava. Cooled lava hardens to form rock such as pumice or obsidian.



Volcán de Fuego, Guatemala, is a type of volcano known as a volcanic peak.



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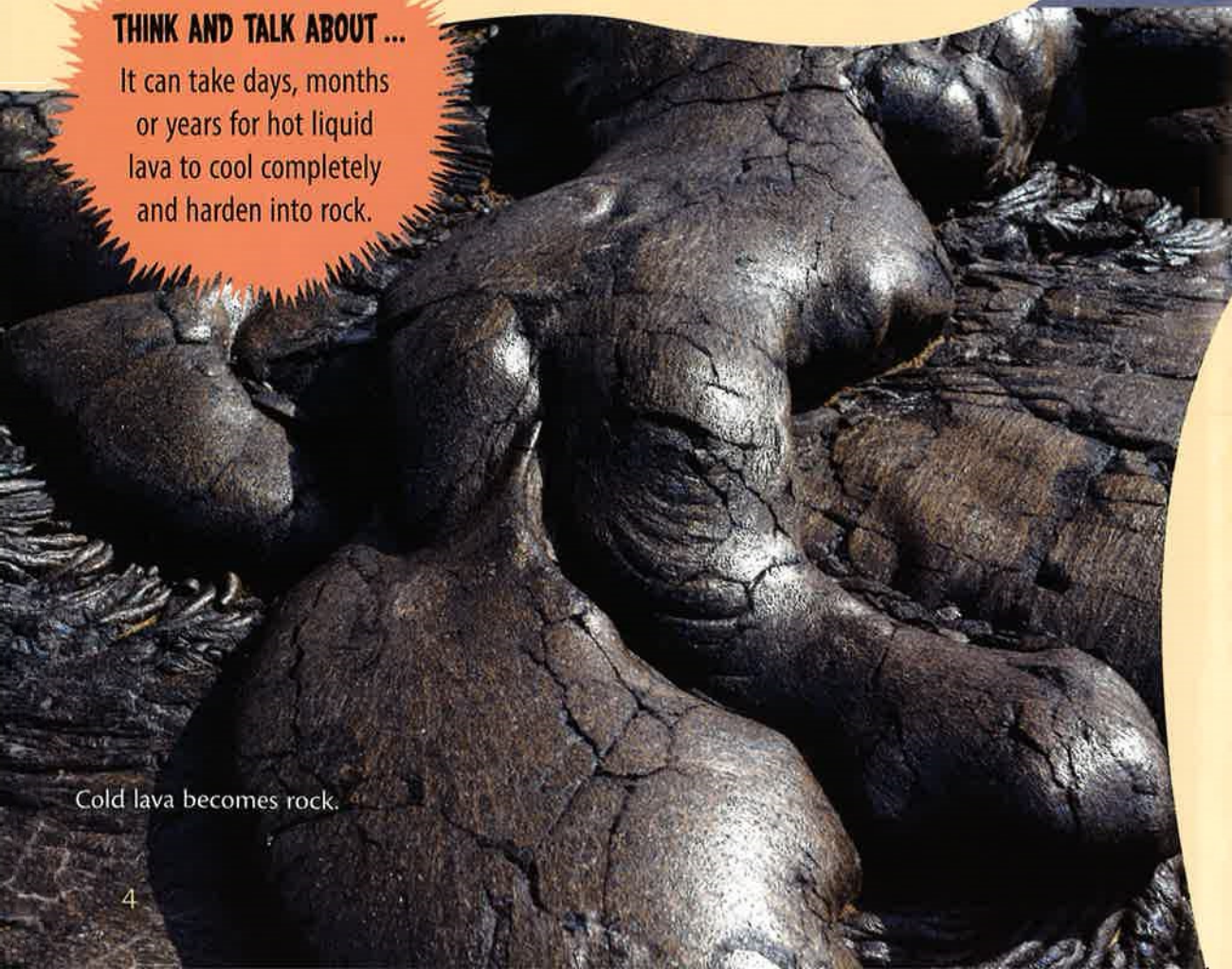
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Volcanoes on Land and at Sea

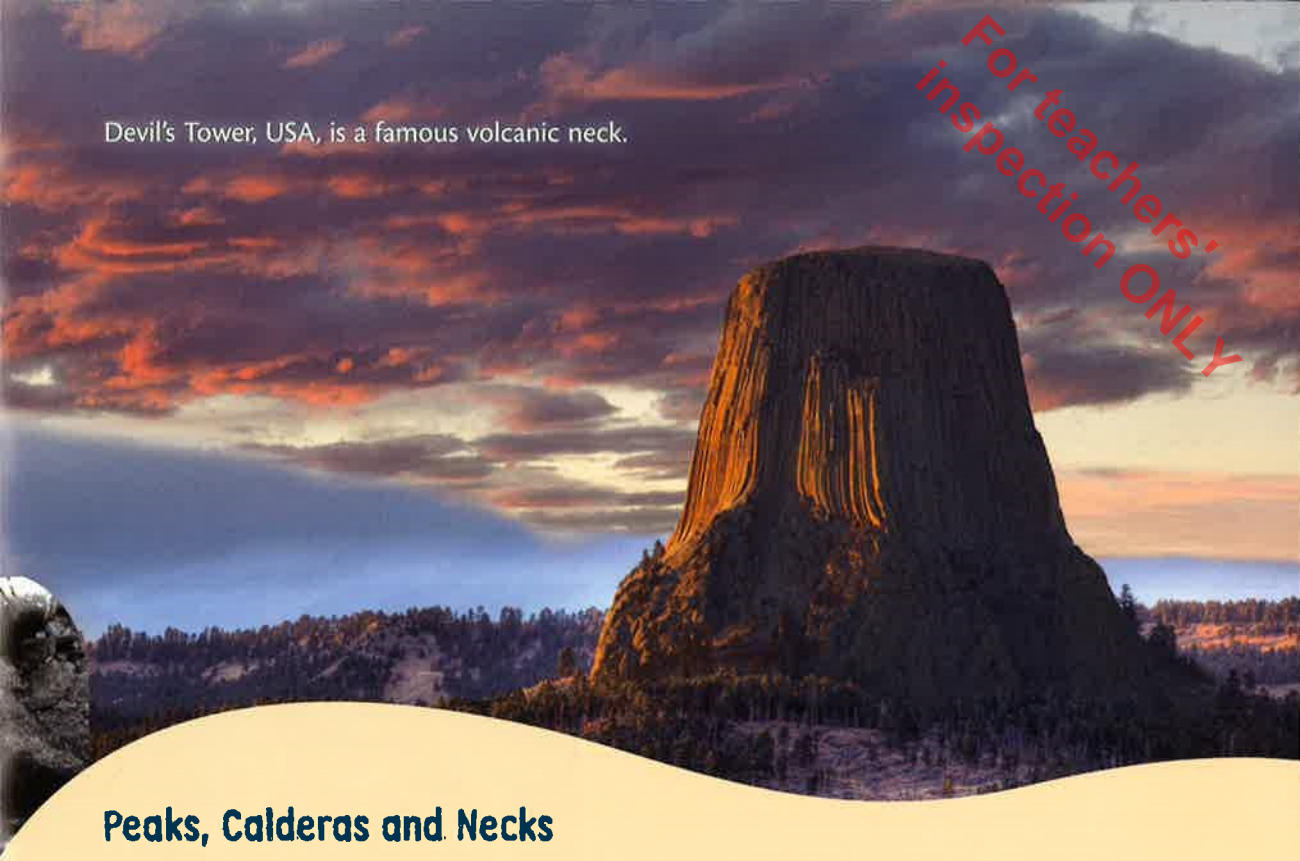
Each time volcanoes erupt, they change the landscape. Massive eruptions leave behind large holes that become valleys. Lava flows over the surface, creating distinctive rock formations as it hardens. Some volcanic eruptions can even create new islands at sea.

THINK AND TALK ABOUT ...

It can take days, months or years for hot liquid lava to cool completely and harden into rock.



Cold lava becomes rock.



Devil's Tower, USA, is a famous volcanic neck.

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Peaks, Calderas and Necks

The most common shape for a volcano is a steep-sided cone with a **crater** at the top. This shape is known as a volcanic peak.

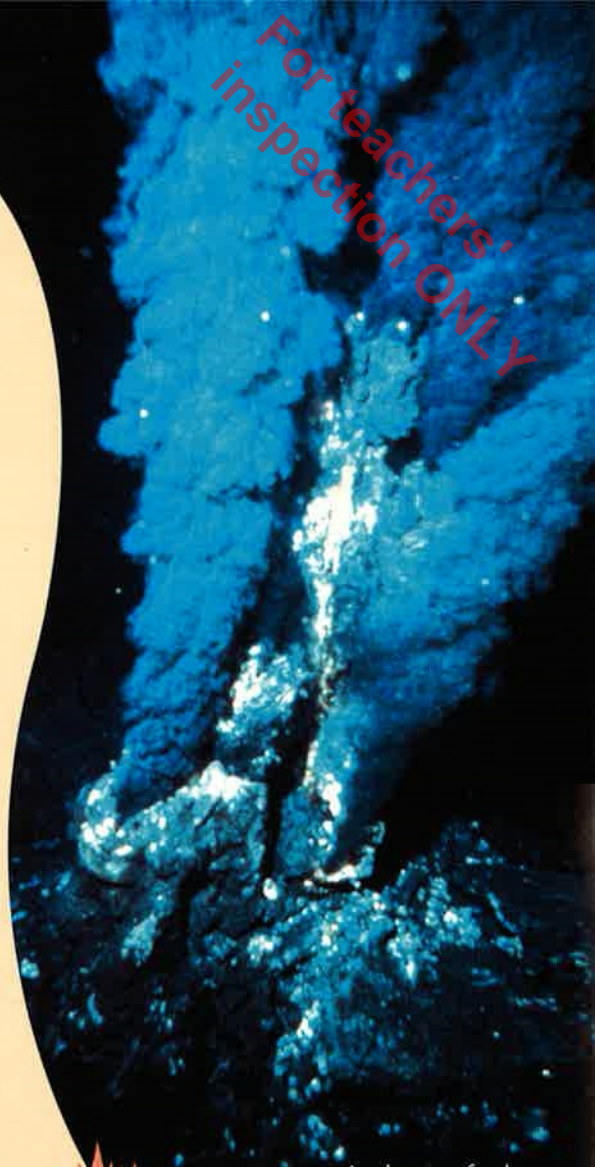
After a massive eruption, the top of the cone collapses, due to the ejection of the magma that was underneath the mountain. This can form an uneven, vast hole called a **caldera**. Calderas are more than a kilometre wide. Sometimes, they fill with rain to form deep lakes.

Sometimes, a column of hardened magma is trapped inside the vent during the eruption. This is called a volcanic neck. The rock in volcanic necks is much harder than the rock on the outside of the mountain, so it doesn't erode at the same rate as the rest of the old volcano. Frequently, the volcanic neck is the last part of a peak to remain.

Seamounts

Often, volcanoes form under the water. They are called seamounts. Like volcanoes on land, when seamounts erupt, lava pours out. As the lava cools into rock under the water, it creates volcanic mountains with high peaks. Some seamounts grow tall enough that they break through the ocean's surface, and their peaks become volcanic islands.

Seamounts that do not break the surface can be thousands of metres under the water and very far from any shore. It is not always possible to know that they have erupted. Scientists believe that most volcanic eruptions on Earth occur in the ocean. The water around the vent fills with bubbles as gas begins to erupt from the volcano. During an underwater eruption, the ocean can become hot and there can be a lot of waves on the surface.



A plume of ash erupts from a seamount deep under the ocean.

THINK AND TALK ABOUT ...

Chains of deep-sea volcanoes can create extreme, hot-water environments that are home to many rare sea creatures, such as tube worms.

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Plates and Hotspots

Most volcanoes are located along the boundaries between the **tectonic plates** that cover Earth. These huge plates can shift and slide, causing extreme events on the surface above, such as earthquakes, tsunamis and volcanic eruptions.

Some volcanoes occur at other parts of a tectonic plate, in places called hotspots. Hotspots are regions in Earth's mantle in which rock melts and becomes magma. This wells upwards. As tectonic plates slowly move, different parts of Earth's crust pass over the hotspot. This can cause a chain of volcanoes. If these volcanoes are tall enough to break the surface, they become a chain of islands. There are hotspot volcanoes in Hawaii, Iceland, the Galápagos Islands and other places.



major volcanic hotspots of the world

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Volcanoes are vents extending down into Earth's crust. When a volcano erupts, hot melted rock, gas and ash can gush explosively from the vent. Volcanoes can occur on land or under the water. Some volcanoes are very active and dangerous, and some have not erupted for thousands and thousands of years. There are many famous volcanoes around the world.

One famous volcano is Mount Pinatubo, in the Philippines. Mount Pinatubo was peaceful for nearly 500 years, before awakening with a devastating eruption.

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PM Level 30

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Text Types:
Information Report (Informative)
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ISBN: 978-0170379465
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