

All about Volcanoes

twinkl

Aim

- To know about volcanoes and where in the world they can be found.

Success Criteria

- To describe the structure of a volcano.
- To locate some of the major volcanoes on a world map.

Where Does the Word 'Volcano' Come From?

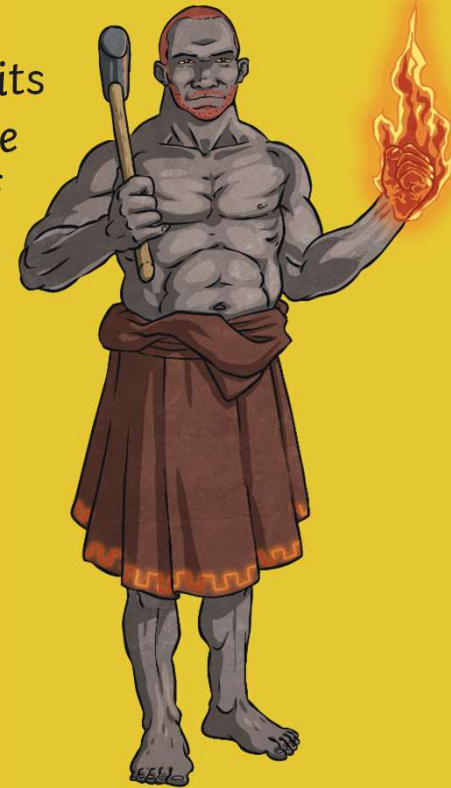
Have you ever thought about why volcanoes are actually called 'volcanoes'? Can you think of a reason why?

The word 'volcano' comes from the island 'Vulcano', which is a volcanic island in Italy.



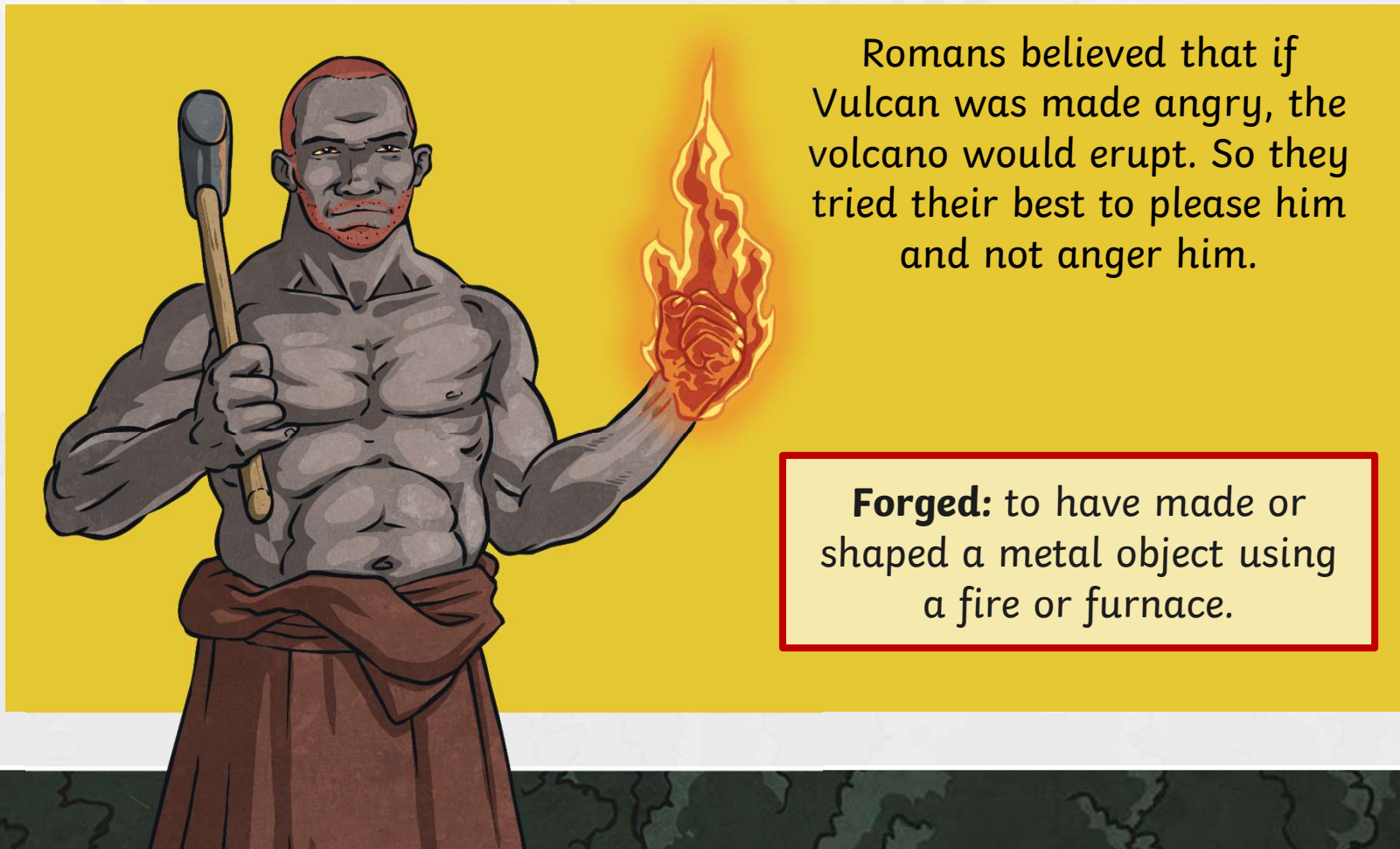
Vulcano, Italy.

The island actually gets its name from the Roman god of fire – Vulcan.



The Roman God of Fire

Roman mythology says that Vulcan lived in a volcano. As well as being the god of fire, he made many weapons and **forged** them using metal and fire. He was a very skilled blacksmith.



Romans believed that if Vulcan was made angry, the volcano would erupt. So they tried their best to please him and not anger him.

Forged: to have made or shaped a metal object using a fire or furnace.

What Is Our Earth Made Of?

The Mantle

The mantle is approximately 2897km thick and is made of a solid, rocky substance called molten rock or magma. This is what escapes when a volcano erupts.

The Outer Core

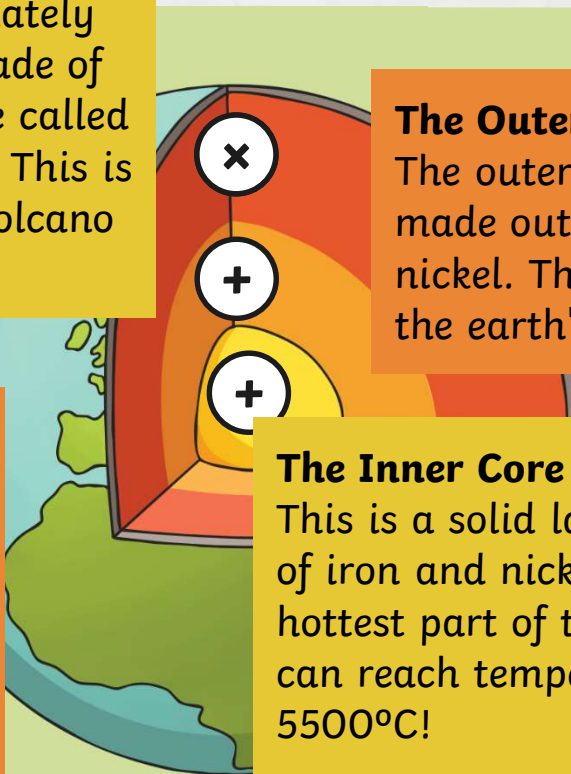
The outer core is a liquid layer made out of molten iron and nickel. This liquid metal creates the earth's magnetic field.

The Crust

This is the outer layer of the earth. It varies in thickness from 0 – 60km thick. It is not even and is made up of pieces which overlap to cover the entire planet. These pieces are called 'tectonic plates'.

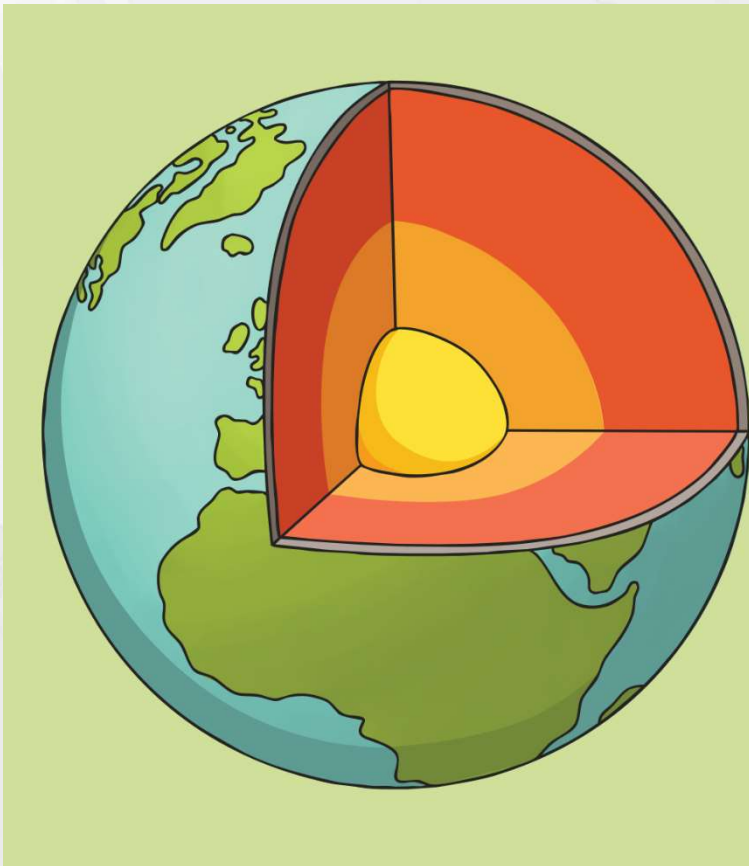
The Inner Core

This is a solid layer and is made of iron and nickel. It is the hottest part of the earth and can reach temperatures of up to 5500°C!



How Are Volcanoes Formed?

Deep in the earth, it is extremely hot. It is so hot, in fact, that rocks actually melt and form magma, which makes up the mantle of the earth.



The upper mantle mixes and moves, which creates pressure underneath the crust. This pressure can sometimes cause the mantle to leak out onto the surface of the earth – **this is a volcano!**



Over time, as this magma leaks out, the volcano will get bigger and bigger.

The Three Stages of Volcanoes

Scientists have placed volcanoes in to three different categories.

Active

An active volcano is one that has erupted recently, and there is the possibility that it may erupt again.

Dormant

A dormant volcano is one that has not erupted for a long time, however, it may still erupt in the future.

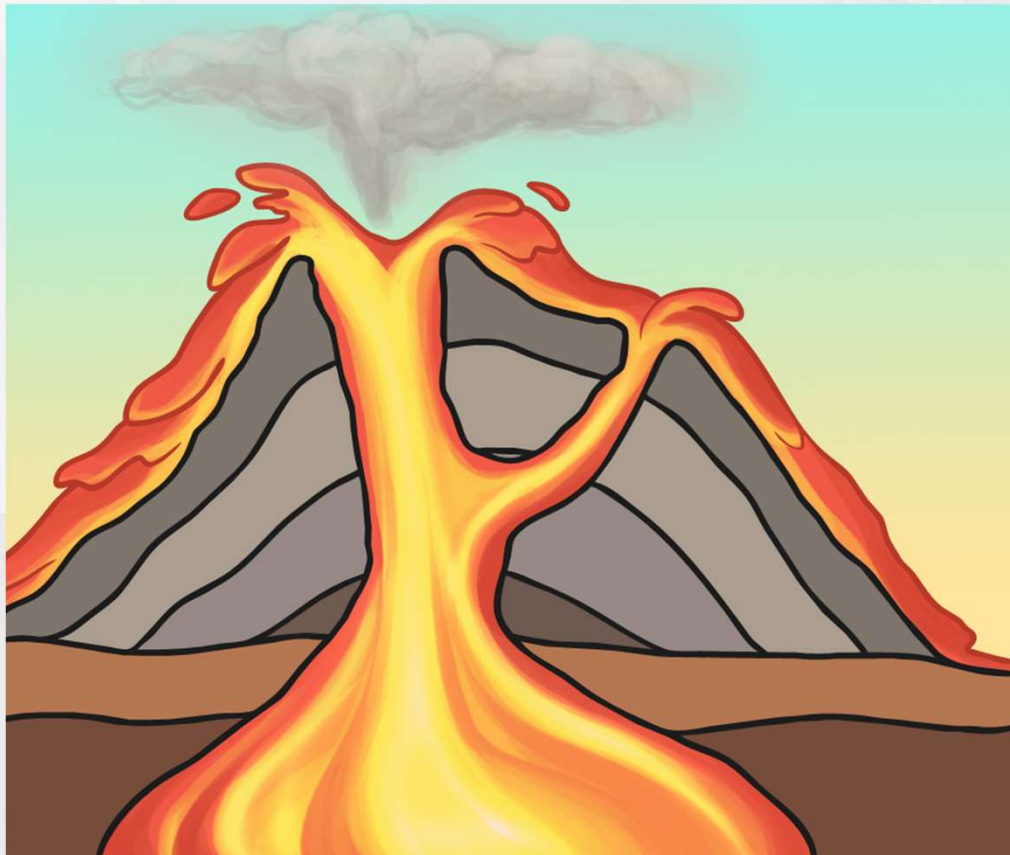
Extinct

An extinct volcano is one which has erupted thousands of years ago, but it will probably never erupt again.



Why Do Volcanoes Erupt?

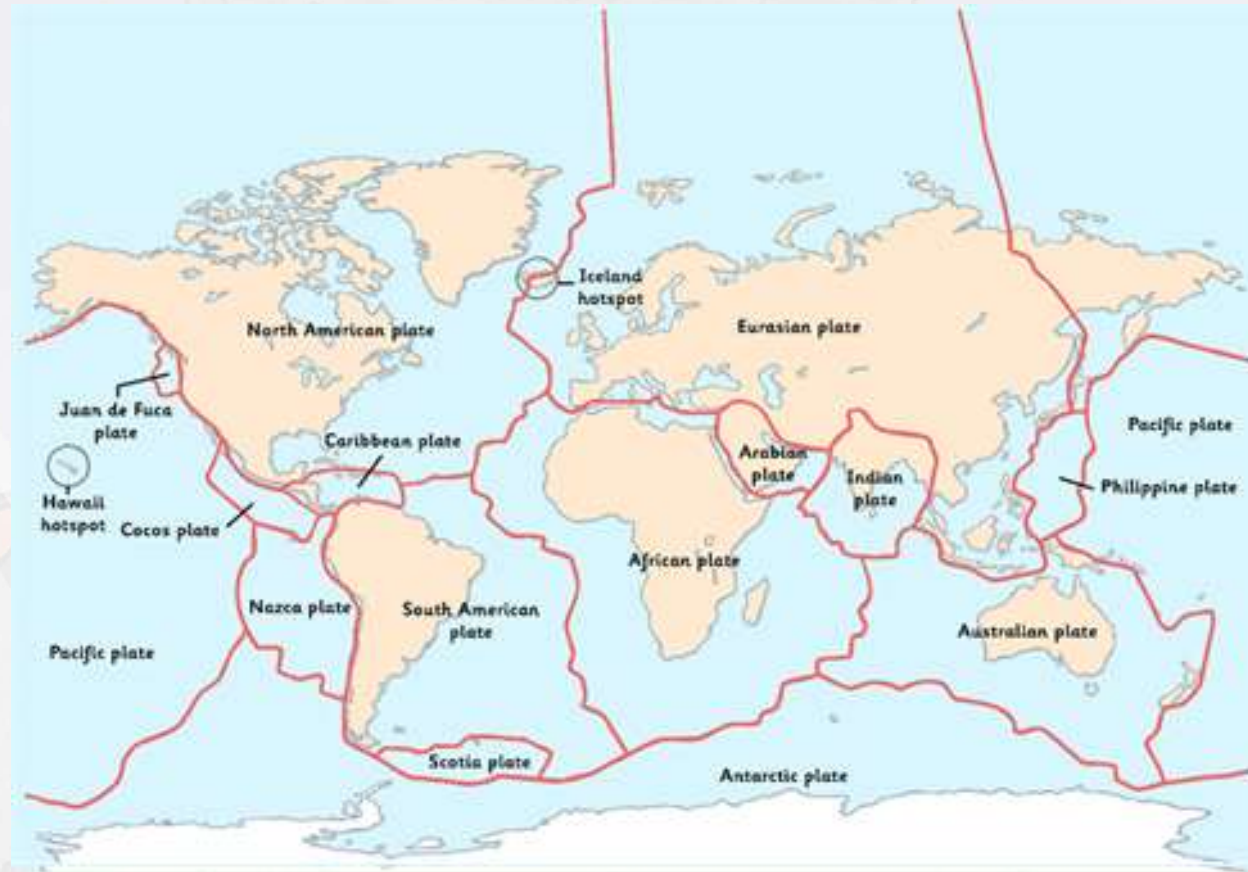
We know that the earth's crust is made up of huge slabs called tectonic plates. These fit together like a jigsaw puzzle and they sometimes move.



As you have previously learnt, convergent and divergent boundaries can give rise to volcanoes. As the tectonic plates are moving in different directions and at different speeds, they can cause volcanic eruptions at their boundaries.

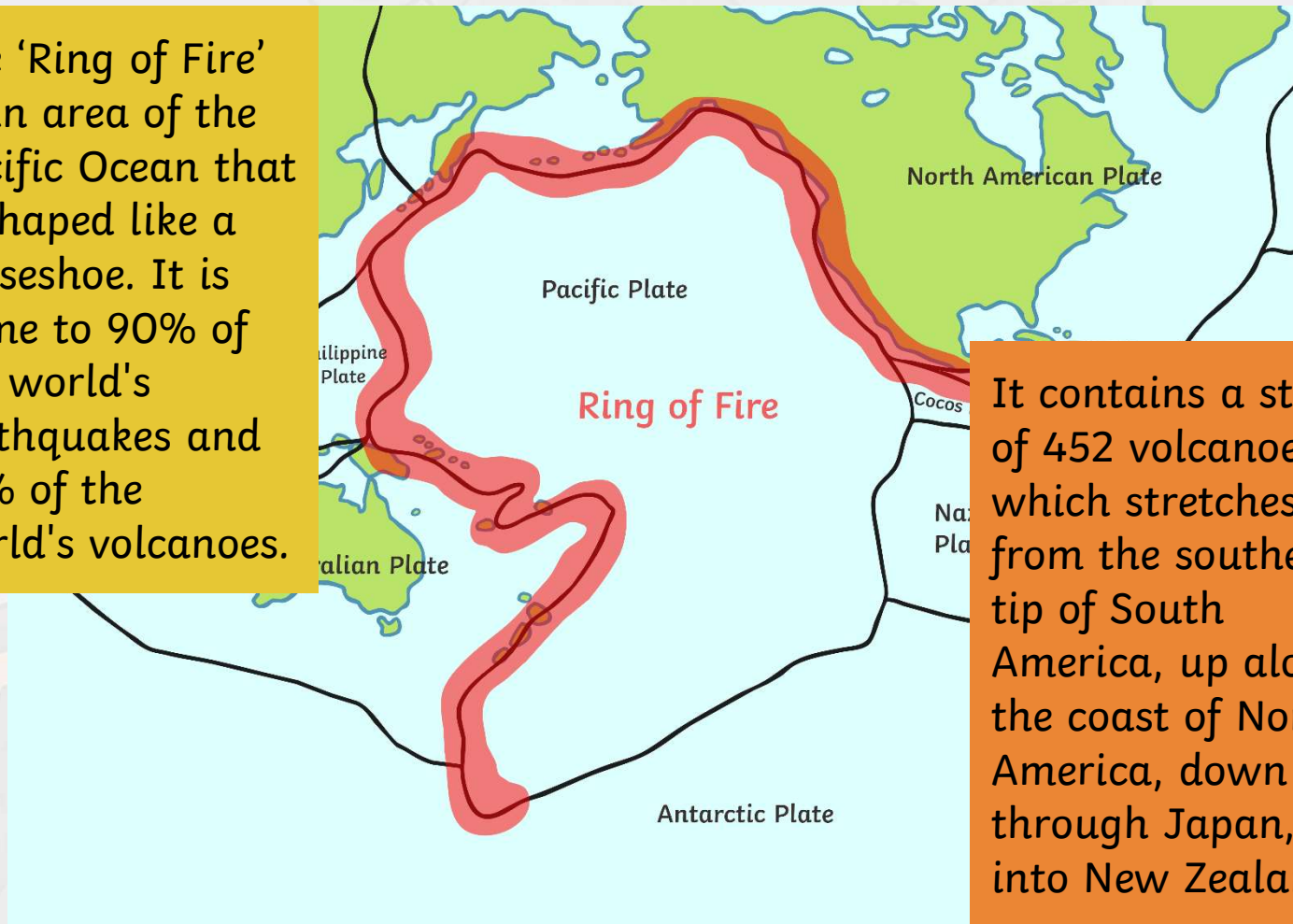
Where Are Most Volcanoes Located?

This map shows where the tectonic plates are.



Where Are Most Volcanoes Located?

The 'Ring of Fire' is an area of the Pacific Ocean that is shaped like a horseshoe. It is home to 90% of the world's earthquakes and 75% of the world's volcanoes.



It contains a string of 452 volcanoes, which stretches from the southern tip of South America, up along the coast of North America, down through Japan, and into New Zealand.

What Are the Different Parts of a Volcano?

An opening in the surface of the Earth through which volcanic materials, such as magma, can escape.

vent

A cloud of ash. It is formed by volcanic explosions

ash cloud

Side vent

An opening in the side of the volcano.

Throat/conduit

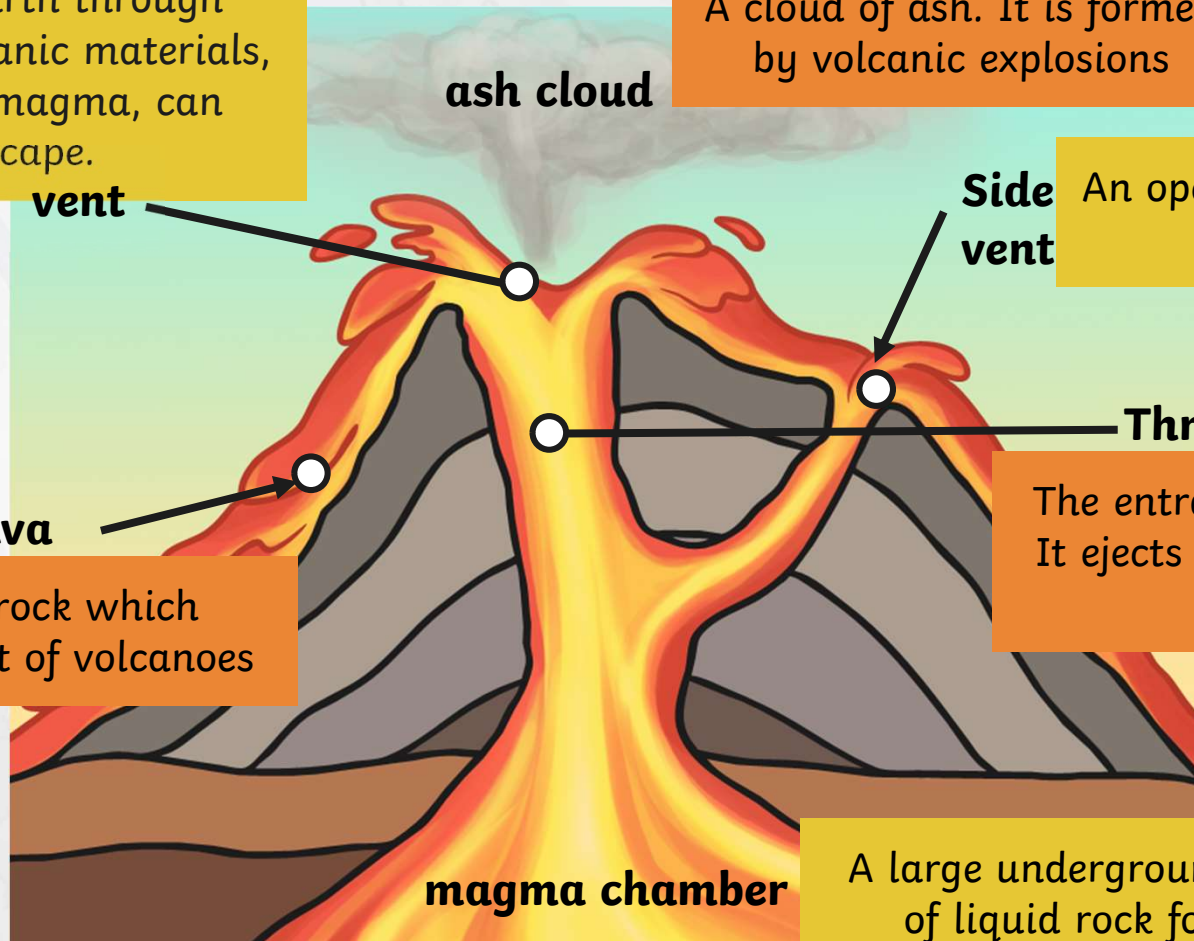
The entrance of a volcano. It ejects lava and volcanic ash.

Lava

Molten rock which escapes out of volcanoes

magma chamber

A large underground pool of liquid rock found beneath the surface of the Earth.



More Volcano Facts

What is the difference between magma and lava?

Magma is liquid rock inside a volcano. Lava is the name for liquid rock that has flowed out of a volcano. Lava takes a long time to cool down as it is not a good **heat conductor**. As a lava flow cools down, it gets slower and thicker.

Heat Conductor:

something which can transfer heat from one object to another.



What is a 'pyroclastic flow'?

This is the most deadly of all volcano activities.

It is a liquidised mixture of solid and part-solid fragments and hot, expanding gases.

They look like a snow avalanche but are extremely hot and contain poisonous gases. They move at the speed of a hurricane.



How Many Volcanoes Are There?

There are more than 1500 active volcanoes on Earth. There are also more than 80 volcanoes under the ocean, although these are just the ones that have been discovered.



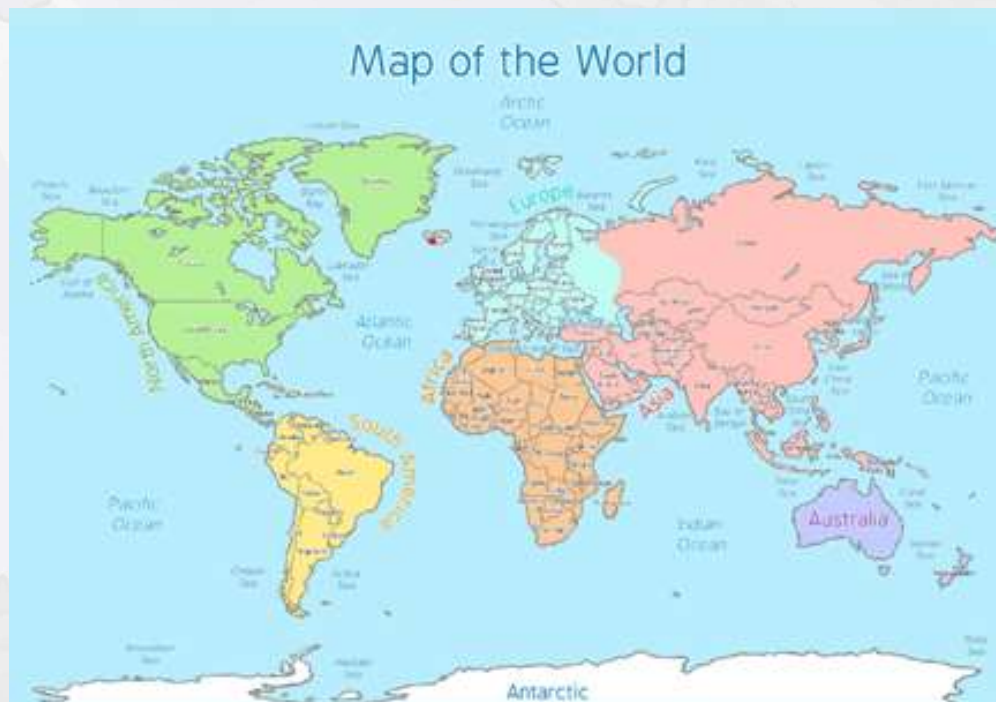
What Is the Largest Active Volcano?

Mauna Loa



The largest, active volcano in the world is Mauna Loa in Hawaii. It is 13,677 feet above sea level. From its base below sea level to its summit, Mauna Loa is taller than Mount Everest.

Eyjafjallajökull



Eyjafjallajökull is a volcano in Iceland.



Watch this video of it erupting in 2010.

[The Guardian Iceland eruption](#)

Are There Any Volcanoes in the UK?

Arthur's Seat, Edinburgh, Scotland



[BBC Bitesize volcanoes](#)

Are There Any Volcanoes in the UK?

Bardon Hill Quarry, Leicestershire, England



Photo courtesy of MalpasCC (Own work) [CC BY-SA 1.0 <http://commons.wikimedia.org/w/index.php?curid=3144444>]

Are There Any Volcanoes in the UK?

Giant's Causeway, Northern Ireland



Photo courtesy of TS Orum @Blickr.com - granted under creative commons licence - attribution

Are There Any Volcanoes in the UK?

Snowdon, Wales



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Are There Volcanoes on Other Planets?

Earth is not the only planet to have volcanoes, although most of the volcanoes on other planets are now extinct.

Mercury used to have volcanoes but when the planet's interior cooled down, the volcanoes died.



Mars has the largest known volcano called Olympus Mons. It is no longer active and will probably never erupt again.



Io is one of Jupiter's moons and has several active volcanoes.



Triton is Neptune's largest moon. Instead of lava, the volcanoes on Triton actually release ice.



Aim

- To know about volcanoes and where in the world they can be found.

Task

- Label your own diagram of a volcano.
- Read the definitions to help you with your labelling.
- Optional extra: create your own mini volcano! [Mini volcano](#)

