

All about Volcanoes



Where Does the Word 'Volcano' Come From?

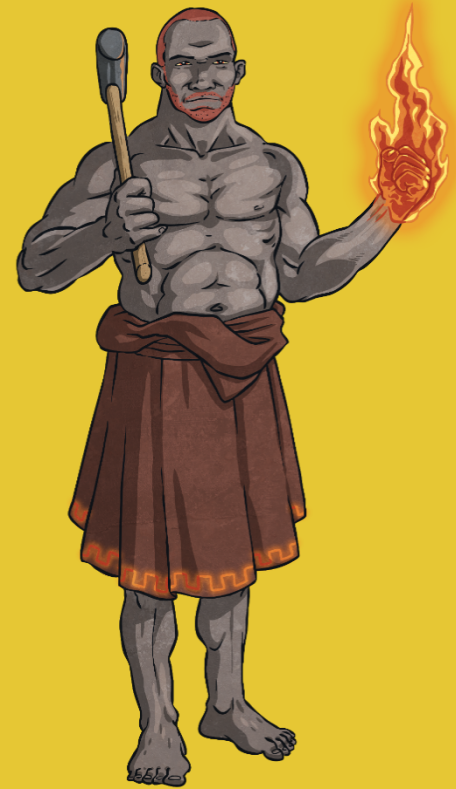
Have you ever thought about why volcanoes are actually called 'volcanoes'? Can you think of a reason why?

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



Vulcano, Italy.

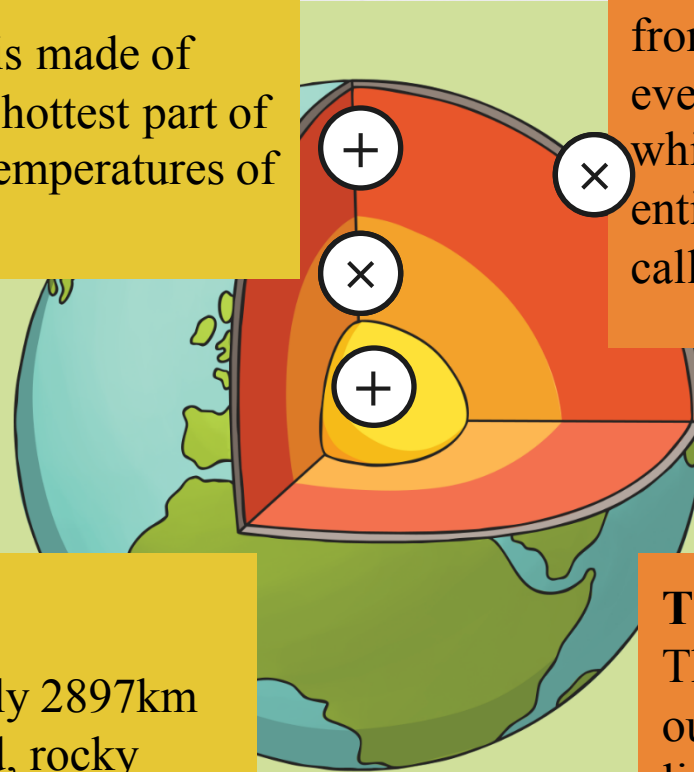
The island actually gets its name from the Roman god of fire – Vulcan.



What's Our Earth Made Of?

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!



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 Crust

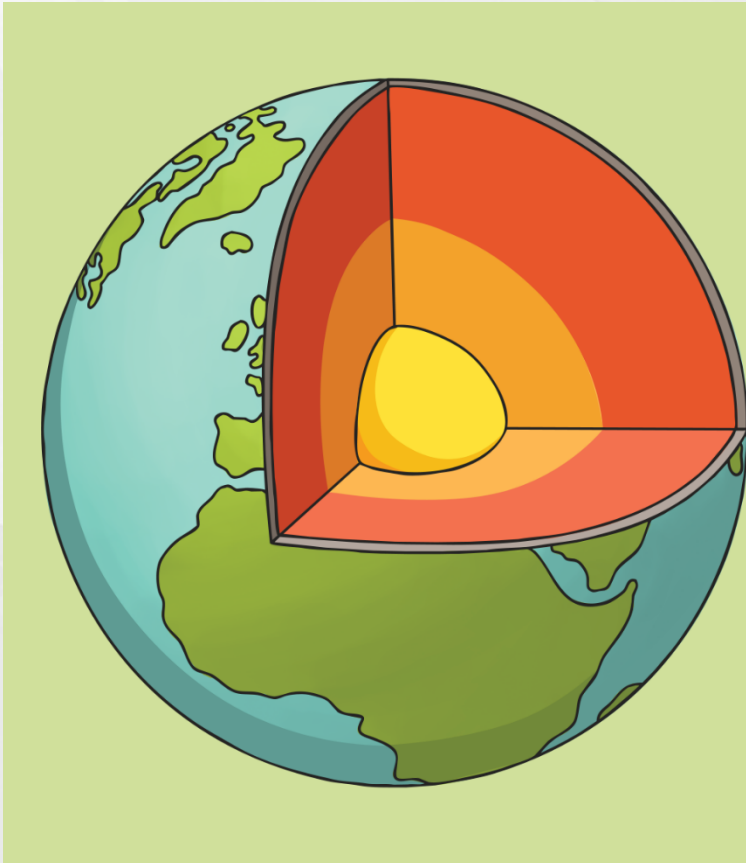
This is the outer layer of the earth. It varies in thickness from 0 – 60km thick. It is not even and is made up of pieces which overlap to cover the entire planet. These pieces are called 'tectonic plates'.

The Outer Core

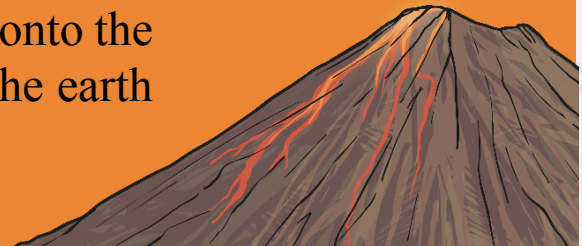
The outer core is a liquid layer made out of molten iron and nickel. This liquid metal creates the earth's magnetic field.

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.

What Are the Different Parts of a Volcano?

A cloud of ash. It is formed by volcanic explosions

The mouth of a volcano. It surrounds the vent.

vent

ash cloud

crater

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

throat

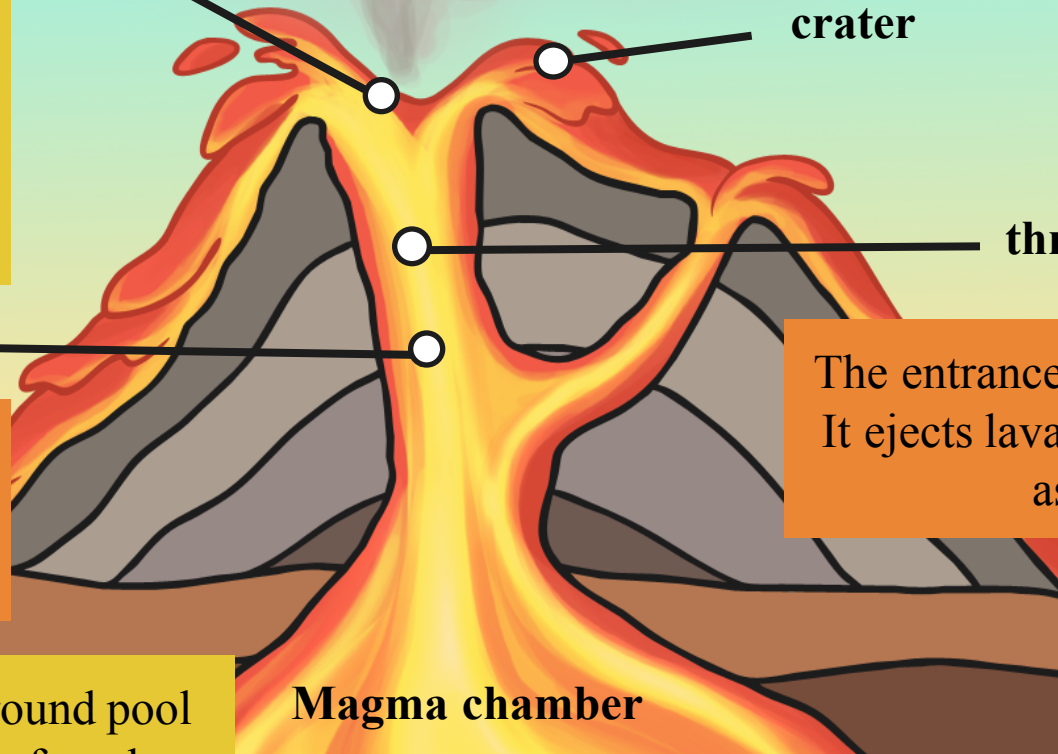
conduit

An underground passage which magma travels through.

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

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

Magma chamber



The Three Stages of Volcanoes

Scientists have placed volcanoes in to three different categories.
What do you think each one is?

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.

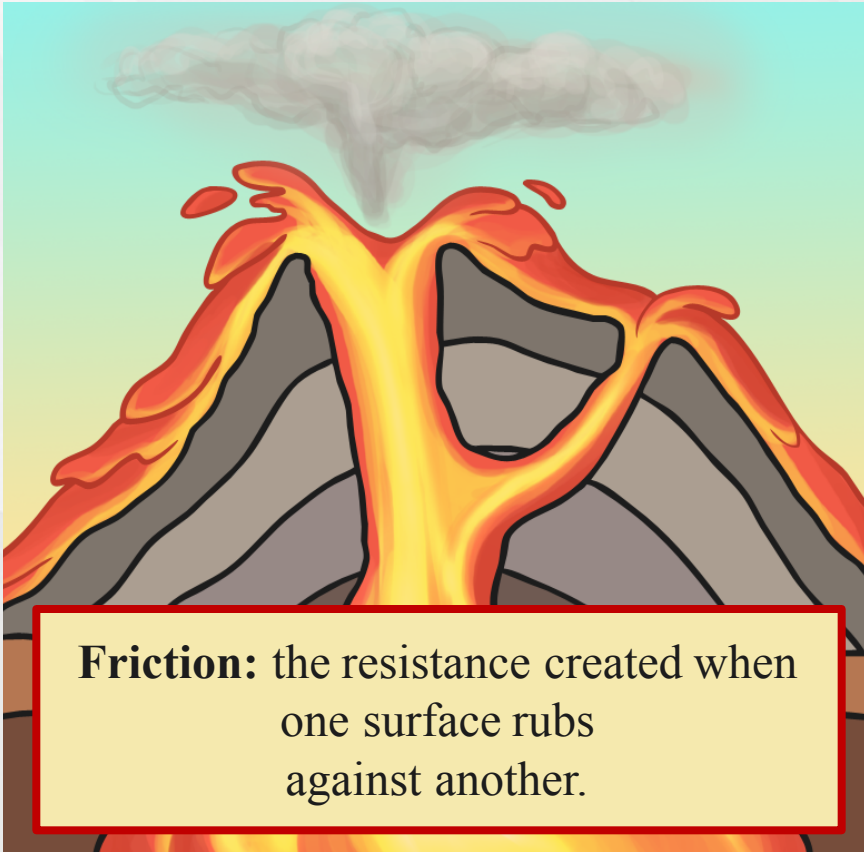
Extinct

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.



Friction: the resistance created when one surface rubs against another.

The movement causes **friction** which causes earthquakes and volcanic eruptions near the edges of the plates. The theory that explains this process is called 'plate tectonics' – this means the plates are moving in different directions and at different speeds. Sometimes they collide or brush past each other and cause these earthquakes and volcanic eruptions.