

Volcanoes

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What Are Volcanoes?

Have you ever heard of (or even climbed) Mount Snowdon, Scafell Pike or Ben Nevis? Many breathtaking mountains like these were made by volcanoes millions of years ago.

A volcano is an opening in Earth's surface that allows ash, magma and gas to escape during an eruption. Surprisingly, many people choose to live near to volcanoes because of the rich, fertile soil.

Magma chamber

Lava flow

Why Do Volcanoes Erupt?

As Earth's crust melts, incredibly hot liquid rock called magma is formed. Pressure eventually forces the magma up and out of the vent of the volcano. Once magma leaves the volcano, it becomes known as lava.

Volcanoes can be classed in these categories:

- **Active:** There has been at least one 'recent' eruption (in the last 10,000 years).
- **Dormant:** There has been no eruption in the last 10,000 years, but it's expected that an eruption will take place in the future.
- **Extinct:** There has been no recent eruption, and the volcano is not expected to erupt again in the future.



How Are Volcanoes Formed?

Earth's surface is made up of tectonic plates, which are like pieces of a giant jigsaw puzzle. The plates are always moving, although only by a few centimetres each year.

Volcanoes are formed like this:

1. Two tectonic plates collide.
2. One of the plates is subducted beneath the other plate.
3. The crust of the subducted plate gets hotter and melts to form magma (liquid rock).
4. The magma is lighter than the surrounding rock, so it rises towards Earth's surface.
5. Eventually, the magma erupts to make a volcano.

Earth's crust

Subducted
plate

What Are Hot Spots?

Volcanoes can also be formed above hot spots. As a tectonic plate moves over a hot spot in Earth's crust, a whole line of volcanoes is made. This happened in the Pacific Ocean, and the volcanic islands of Hawaii were created. The map below shows a line of volcanoes formed by a hot spot in the Pacific Ocean. The largest active volcano in the world is Mauna Loa in Hawaii, which is 4,169 metres tall.



Where Can I See A Volcano?

There are around 1,900 active volcanoes in the world. Many active volcanoes can be found in an area known as the 'Pacific Ring of Fire', which surrounds the Pacific Ocean.

Approximately 10% of active volcanoes are in Japan, and over 20% are found underwater.



Vesuvius

Mount Vesuvius in Italy erupted in 79 CE, killing and covering the people of the town of Pompeii in ash. The volcanic ash preserved the bodies of the dead and turned them into statues. Visitors to Pompeii can see what life was like in a Roman town almost 2,000 years ago because it is preserved so well.

Are There Volcanoes in Britain?

If you live in Britain, the chances are that you've never been close to an active volcano. That's because Britain is no longer near the edge of a tectonic plate or a hot spot.

However, 500 million years ago, Britain was extremely volcanic. This created many of the magnificent mountains in Britain such as Glen Coe in Scotland and the Borrowdale Hills in Cumbria. All the volcanoes in Britain have been extinct for many millions of years.

Did You Know? Edinburgh Castle is built on an extinct volcano.



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