

Volcanic Eruptions

INTRODUCTION



A volcano is an opening in the surface of the Earth through which molten rock and hot gases erupt. Most volcanoes are mountains having a conical shape and a hole in the center.

When rock beneath the surface of the Earth gets extremely hot, they melt and become liquid. When it is below the surface, it is called magma. When the magma erupts through a volcano, it is called lava. Sometimes, lava can be as hot as 2,000°F!

There are three different kinds of volcanoes: active, dormant, and extinct. An active volcano is one which has 'recently' erupted and will likely erupt again soon. A dormant volcano can be considered as a kind of a sleeping volcano. It has not erupted for a long

time. However, there is a chance that it might erupt in the future. An extinct volcano is one which had erupted thousands of years ago and will not erupt again.



There are more than 1500 active volcanoes on our planet. Indonesia has the most active volcanoes, more than 120! There are also active volcanoes in the USA. Most of them are located in Hawaii, Alaska, Washington, Oregon and California.

Volcanic Eruptions

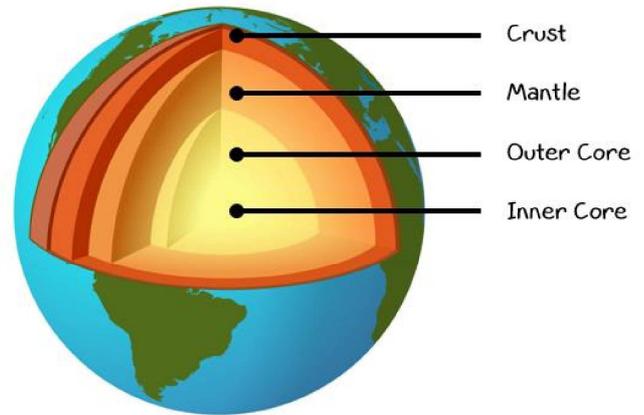
HOW THEY FORM

The Earth consists of three layers: the core, the mantle and the outer crust.

The outer crust is the layer on which we live and is around 18 miles deep. The crust is made up of massive plates, which fit together like a jigsaw puzzle.

Volcanic eruptions happen on fault lines, or near the edges of these plates.

Volcanic eruptions happen because of extremely high temperatures under the Earth's crust (the mantle). The mantle consists of molten rock and gases and is about 1,800 miles thick. When pressure builds up in the mantle, molten rock rises from deep inside the mantle to the surface. When the magma rises, it melts gaps in the surrounding solid rock and forms large chambers. The solid rock releases pressure that forces the magma up



to the surface through channels (weak parts of the rock). When the pressure is strong enough along the cracks or openings in the outer crust, an eruption is likely to occur. Eventually, the magma and gases erupt through the opening in the surface (the central vent).



Dangerous Volcanoes

IN HISTORY

Mount St. Helens is one of the most active volcanoes in the United States. It is located about 96 miles from Seattle. Its most famous eruption happened in 1980. The blast killed 57 people and caused a lot of damage. The last time it erupted was in 2004 which resulted in the spewing out of more than 25 billion gallons of lava, rock and ash.

The largest active volcano in the world is located in Mauna Loa in Hawaii. The volcano is 13,677 feet high.

The tallest known volcano in the Solar System is located on Mars. It is called the Olympus Mons and is 17 miles high!

Mount Vesuvius in Italy is probably the most dangerous volcano in the world. The reason for this is that its eruptions have been very explosive and the slopes of the mountain are very densely populated. Its most famous eruption occurred in 79AD when it completely destroyed the ancient city of Pompeii.

Top 5 Deadliest Volcanic Eruptions

| | Location | Date | Deaths |
|---|---------------------------|------|------------------|
| 1 | Tambora, Indonesia | 1815 | 92,000 – 100,000 |
| 2 | Unzen, Japan | 1793 | 15,000 – 53,000 |
| 3 | Mount Pelee, Martinique | 1902 | 30,000 – 40,000 |
| 4 | Krakatoa, Indonesia | 1883 | 36,400 |
| 5 | Nevado del Ruiz, Colombia | 1985 | 22,900 – 25,000 |

Exercise 5: Are the statements below true (T) or false (F)?

- 1) The world's largest active volcano () is located in the United States.
- 2) Several planets in the Solar System () have volcanoes.
- 3) The eruption of Mount Vesuvius () was the deadliest in history.
- 4) The deadliest volcanic eruption () happened in Indonesia.
- 5) Mount St. Helens is the most () dangerous volcano in the world.
- 6) The deadliest eruptions in history () happened in previous centuries.

Things to know

ABOUT VOLCANIC ERUPTIONS



There are around 20 volcanoes erupting at any given time. However, 75% of all eruptions happen underneath the ocean.



The Ring of Fire is an area along the edges of the Pacific Ocean. This area is frequently hit by earthquakes and volcanic eruptions. The Ring of Fire has 452 volcanoes and is home to more than 50% of the world's active and dormant volcanoes.

Ash clouds from volcanic eruptions can be very dangerous. Not only are these harmful for people to breathe, but they make it extremely difficult for airplanes to fly through. A massive ash cloud from a volcanic eruption in Iceland in 2010 shut down most airports in Europe for several days.

The word "volcano" comes from the name of the Roman god of fire, Vulcan.

Volcanic eruptions can trigger tsunamis, earthquakes, flash floods, and landslides.

Exercise 6: Complete the crossword puzzle.

Across

- 3) Along which ocean is the Ring of Fire located?
- 6) Airplanes cannot fly through the ... of volcanic eruptions.

Down

- 1) The word "volcano" is derived from the word
- 2) An area with lots of volcanic activity.
- 4) Most volcanic eruptions occur under
- 5) Volcanic eruptions can cause

