

explainity explains: volcanoes

Ash rains from the sky, a loud rumble fills the air, and glowing lava flows down the volcano.

But what exactly is a volcano?

The short answer:

Volcanoes are openings in the Earth's crust, from which molten rock escapes.

When molten rock is found below the Earth's surface, it is known as "magma" and is between 900 and 1,500 degrees Celsius. When the volcano bursts open, which is known as an eruption, we call the hot mass above ground "lava".

So, what causes an eruption? The Earth's crust is our planet's outermost shell. The rock in the Earth's crust is a lot heavier than magma. Due to the pressure placed on the magma, it breaks through existing cracks, rises, and gathers in large chambers just below the Earth's surface. If the chamber fills up, the pressure increases more and more. Gases are released from the magma and form bubbles.

These bubbles are the driving force behind volcanic eruptions, as they cause the hot mass to froth up and press against the surface. If there's too much pressure, the bubbles burst and the volcano erupts.

Most volcanoes are found on plate boundaries. Here for example, the heavier tectonic plate might slide under the lighter one. The plates can then become porous and break apart, which paves the way for magma to rise and creates a volcano.

But there are also volcanoes in the middle of tectonic plates. These occur when the heat concentration in the Earth's mantle is particularly high in one place. Here, hot material rises from inside the Earth and slowly melts the Earth's crust. Geologists call these areas hot spots.

Volcanic eruptions can vary in strength. Sometimes, pieces of volcanic rock are "fired" several kilometers through the air.

With other volcanoes, lava just flows down the side in viscous streams.

And others can emit large quantities of ash that cloud the surrounding area.

By the way: Around the world today, there are around 1,500 active volcanoes. This includes those that have erupted in the past 10,000 years. Each year, there are around 50 to 60 volcanic eruptions.

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