

Volcanoes: Earth's Fiery Forces

Learning objective: To understand the physical processes of volcanoes, including their structure, formation, and global distribution.

Use these flashcards to test your knowledge of volcanic activity. Finn the dolphin has been mapping the ocean floor and found many underwater volcanoes! Can you match the terms to their definitions?

What is the difference between magma and lava?

Magma is molten rock located beneath the Earth's surface, whereas lava is the term used for molten rock once it has erupted onto the surface.

Define a 'Vent' in the context of a volcano.

A vent is the opening in the Earth's crust through which volcanic materials, such as gas and lava, escape.

Explain the role of tectonic plates in volcano formation.

Volcanoes often form where tectonic plates meet or pull apart, allowing molten rock to rise from the mantle through the gaps.

What is the 'Ring of Fire'?

A major area in the basin of the Pacific Ocean where a large number of earthquakes and volcanic eruptions occur due to plate boundaries.

Define a 'Dormant' volcano.

A dormant volcano is one that is not currently erupting but is considered capable of erupting again in the future.

What is the difference between an 'Active' and 'Extinct' volcano?

An active volcano is currently erupting or has erupted in recent history, while an extinct volcano is unlikely to erupt ever again.

Describe the features of a volcanic crater.

A crater is the bowl-shaped depression at the top of a volcano formed by an eruption.

Explain why volcanoes are often found in chains.

They often form along plate boundaries or over 'hotspots' where the Earth's crust is thin or fractured, allowing magma to surface in a line.

Justify why some volcanic eruptions are more explosive than others.

Explosivity depends on the viscosity of the magma; thick, sticky magma traps gases, causing higher pressure and more violent eruptions.

Compare and contrast a shield volcano and a stratovolcano.

Shield volcanoes have gentle slopes and runny lava, while stratovolcanoes are tall, cone-shaped, and produce explosive, thick lava.

What might happen if a volcano erupted under a glacier?

The intense heat would cause rapid melting of the ice, potentially leading to catastrophic floods or lahars (volcanic mudflows).

Explain the benefit of volcanic soil for agriculture.

Over time, weathered volcanic rock breaks down into soil that is exceptionally rich in minerals, making it very fertile for farming.