



Mountains, Volcanoes and Earthquakes

In this unit, we will be developing our map skills by identifying where the world’s largest mountain ranges and active volcanoes are located. We will also learn how they are formed and what causes volcanoes to erupt and earthquakes to occur.

Key Questions

- Where are mountains, volcanoes and earthquakes normally located and why?
- How are mountains and volcanoes formed?
- What causes a volcano to erupt?
- What happens when a volcano erupts?
- What causes an earthquake?
- How is the height of the land represented on a 2D map?



This map shows the tectonic plate locations and the plate boundaries. It shows the distribution of volcanoes, earthquakes and key areas such as the ‘Ring of Fire’ around the Pacific Plate.

Key Vocabulary

landform	A feature of the Earth’s surface that is part of the terrain e.g. hills, mountains, volcanoes.
plates	Pieces of the earth’s crust that are constantly moving.
magma	Magma is molten (liquid) rock from the mantle. Magma is <i>within</i> the surface of the Earth.
lava	Magma becomes lava when it flows out over the surface of the land (e.g. during a volcanic eruption).
active volcano	A volcano that has had at least one eruption during the past 10,000 years.
dormant volcano	An active volcano that is not erupting, but supposed to erupt again.
extinct volcano	They are dead and will not erupt again.

Mountains

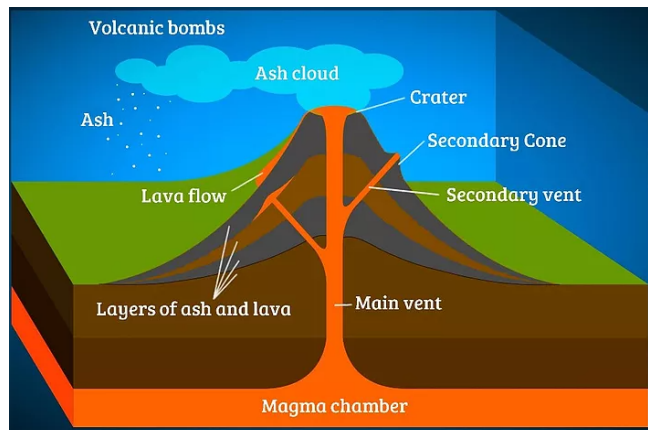
Mountains are formed when huge areas of land hit each other. The surface of Earth is made up of lots of different sections called tectonic plates, and mountains can be formed in different ways when these plates collide or when magma can get from the centre of the earth up to the surface.

Volcanoes

Volcanoes erupt when molten rock called magma rises to the surface. Magma is formed when the earth's mantle melts. Melting may happen where tectonic plates are pulling apart or where one plate is pushed down under another. Magma is lighter than rock so rises towards the Earth's surface. As the magma rises, bubbles of gas form inside it. Runny magma erupts through openings or vents in the earth's crust before flowing onto its surface as lava. If magma is thick, gas bubbles cannot easily escape and pressure builds up as the magma rises. When the pressure is too much an explosive eruption can happen, which can be dangerous and destructive.

Earthquakes

The earth's crust is cracked into pieces called tectonic plates. These plates move around. In some places they move apart from each other and, in other places, they move together. These movements are felt on the surface and they vary in size. Most are too small to be felt by humans and are measured using a sensitive machine called a seismometer. Some earthquakes are large and can cause extensive damage to property and loss of life.



Suggested Homework Projects

1. Use books and/or the Internet to research a case study of a volcanic eruption, e.g. Mount Vesuvius in AD79 or Mount St. Helens in 1980.
2. Use the templates found here to make a 3D model volcano: <https://www.3dgeography.co.uk/make-volcano-model>
3. Make an earthquake model from Lego and play dough <https://www.3dgeography.co.uk/earthquake-models>
4. Make an earthquake model out of jelly: <https://sciencing.com/make-earthquake-model-kids-5347246.html>