

Year: 4

Subject: Geography

Unit of Study: Volcanoes and Earthquakes

Linked Literature:

Climate and weather

Where in the world do we live?

We do like to be beside the seaside

Volcanoes, earthquakes and mountains

The water cycle

The Americas

Vocabulary

tectonic plate	Large areas of the Earth's crust 'floating' on top of the mantle that move slowly and collide.
fault	Large cracks in the surface of the Earth where tectonic plates are moving.
crust	The outer layer of the planet, made of rock — we live here!
mantle	The part of the planet below the crust, made of magma.
core	The centre of the planet, incredibly hot and pressured.
OS (Ordnance Survey) map	Detailed maps of Britain by a national agency.
key	Describes what the symbols on a map mean.
magma	Molten rock below the surface of the planet.
lava	Molten rock that has broken through the surface to the top.
crater	The bowl shaped area at the top of a volcano
main vent	The largest area of a volcano lava flows from
magma chamber	The main pool of magma below a volcano's vent

I need to know (continued):

When tectonic plates move, they can sometimes hit another plate. They can push against each other, rub against each other, or sometimes move apart. This causes earthquakes. Earthquakes can be different strengths and can be measured in different ways. The stronger an earthquake is, the more damage it is likely to cause.

Sometimes when plates meet, they can fold and buckle in different ways. When they push against each other, it can force both edges of the crust up and create fold mountains. These are the most common mountains, like the Himalayas in Asia where Mount Everest is and the Alps in Europe.

Sometimes instead of folding up, the collision of plates makes fault lines. The land between these faults sinks, leaving "blocks" of land on either side, called fault block mountains. These do not form straight lines, but the shape of the rock can be changed through erosion.

Dome mountains are formed by magma pushing up through part of the crust but without the pressure to break through to the surface. It then cools and hardens into rock.

Ordnance Survey maps show the features of the land, unlike road maps. They use symbols to tell the reader what is there, and a key is used to find what the symbols mean.

When the movement of plates and the pressure of the mantle is too much, sometimes magma from the mantle bursts through to the surface. This is a volcano. Volcanoes grow as the lava hardens and becomes rock, and can even create new land and islands. Lava can add minerals to the soil that makes it very easy to grow things there, but there is a risk! The ash and smoke from a volcano can be more dangerous than lava.

There are lots of different volcanoes and mountains in the world, and many famous earthquakes in history.

I need to do:

- Explain the structure of the Earth.
- Explain the structure of a volcano.
- Explain the process of tectonic plates and the impact they have on volcanoes and earthquakes.
- Make comparisons between geological features in different locations
- Use maps to locate volcanoes and earthquakes around the world
- Use OS maps to examine an area of the UK
- Understand and use 4-figure grid references

Prior knowledge:

- Countries of the UK and capital cities
- Seven continents and five oceans
- Seasonal and daily weather patterns
- Compass directions to find routes on a map.

I need to know:

There are three main parts that make up our planet; the core, the mantle and the crust. The mantle is made of magma and the crust sits on top of it in large plates that move incredibly slowly, but are moving all the time. Millions of years ago all of the continental plates were stuck together, meaning there was only one huge landmass on the planet. This supercontinent was called Pangea, and was first explained by Alfred Wegener.



What are tectonic plates?

How do earthquakes occur?

How are mountains made?

How do mountains change the landscape?

Why do volcanoes erupt?

Can I share my research?

