How are mountains, volcanoes and earthquakes formed?

In this unit the children will recap their knowledge of the 7 continents and will be able to identify the worlds mountainous area on a map. Children will study the layers that make up the earth and develop an understanding of tectonic plates and how these relate to volcanoes, mountains and earthquakes. Children will learn about how mountains are formed and will be able to label key features of a mountain. Weather, dangers, and tourism on a mountain will also be researched. Children will also use a range of maps and aerial photographs during this unit.

In this unit children will:

- Locate and name the 7 continents and locate the worlds main mountainous areas.
- Develop knowledge of how tectonic plates move together to create mountains, earthquakes and label tectonic plates on a map.
- Identify a valley and the summit, foot, ridge, peak and slope of a mountain.
- Understand how mountains and volcanoes are formed and what happens when a volcano erupts.
- Read contour lines on a map to identify the height of mountains and volcanoes.
- Investigate the weather and climate on different mountains.
- Compare the positive and negative impacts of tourism on Mount Fuji, Vesuvius and Everest.
- Case Study: Explore the impact of the 2010 Haiti Earthquake.
- Children will use a range of maps, including OS and topographic maps and aerial photographs to identify and describe mountains and volcanoes

Prior Learning

Year 1 Continents and Oceans

Year 2 Local area

Year 3 In the desert

Year 4- Europe

Cross Curricular Links

Science- Earth Composition

Key Vocabulary

Mountain – A large natural elevation of the earth's surface rising abruptly from the surrounding level.

Earthquake- a sudden violent shaking of the ground, typically causing great destruction

dormant volcano - seen as a 'sleeping volcano', it is a volcano that has not erupted for a while but technically could in the future.

eruption - the event where magma from beneath the earth's crust forces its way out, exploding out of a volcano in the form of lava.

extinct volcano - a volcano that has not erupted for a long time and is unlikely to erupt at all in the future.

igneous (or volcanic) rock - the cooled, and therefore solid, rock that came out of the volcano as lava.

Tectonic plates - Sections of the Earth's crust which move slowly over the mantle.

Friction - The resistance that one surface or object encounters when moving over another.

Crust - The hard-rocky layer of the earth.

Mantle - The hot viscous layer of the earth made up of melted rock.

Range – A series of mountains or hills ranged in a line and connected by high ground.

Summit – The top of a mountain.

Contour – Contour lines join land that is the same height.

Altitude – the height of an object or point.

Tourism – people travelling for fun.

Economic - the organisation of money, industry, or trade.

Environmental - the natural world and the impact of human activity on its condition.

Climate - the weather conditions prevailing in an area in general or over a long period.

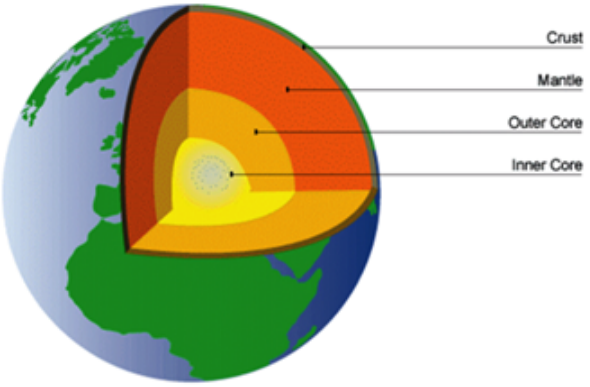
Erosion – the process of something being worn down or destroyed over time.

Topographic – the detailed mapping of a region.

Key Knowledge

- Mountains are made by movement of the tectonic plates in the Earth's crust.
- The brown lines are contour lines. Contour lines join land that is the same height above sea level. On most maps, lines are marked at 5m or 10m intervals. The closer the lines are together, the steeper the slope will be.
  - Earth is made up of different layers. The outer layer is called the crust, mantle, the outer core and the inner core.
  - A volcano is a mountain or a large hill through which molten rock can escape.
  - Volcanoes are classified into three categories; active, dormant and extinct.
  - **Active volcanoes** are those which are erupting – or are likely to erupt fairly soon. There are around 1,500 active volcanoes in the world.
  - **Dormant volcanoes** are those that have not erupted in a long time but are expected to erupt again in the future.
  - **Extinct volcanoes** are those which are never expected to erupt again.
  - Earthquakes usually occur on the edges of large sections of the Earth's crust called tectonic plates. These plates slowly move over a long period of time. Sometimes the edges, which are called fault lines, can get stuck, but the plates keep moving. Pressure slowly starts to build up where the edges are stuck and, once the pressure gets strong enough, the plates will suddenly move causing an earthquake.

Layers Of The Earth



Key Questions

Can you name the 7 continents?
Where are the mountainous areas in the world?
Which is the highest mountain in the world?
Can you name name different famous mountains and volcanoes?
Can you identify the features of a mountain?
What are the positive and negative effects of tourism on Mt Fuji, Everest and Vesuvius?
What are the dangers of mountains?
How do earthquakes happen?