

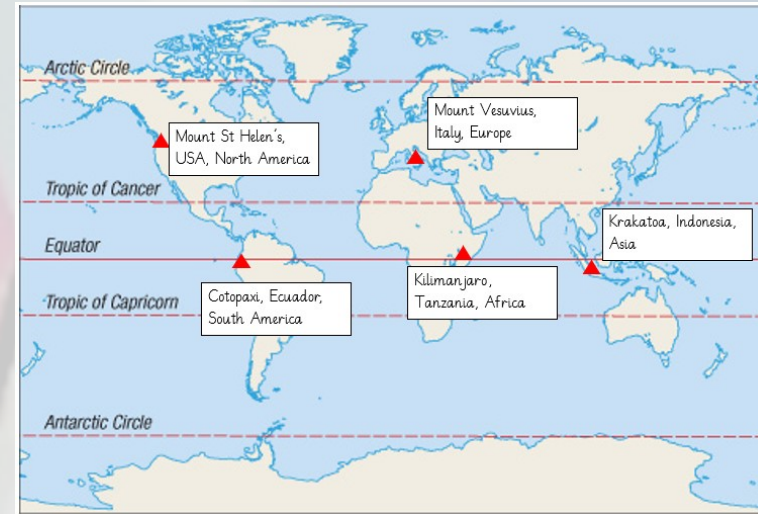
Year 6– Autumn Term

Catastrophe!

Knowledge Organiser



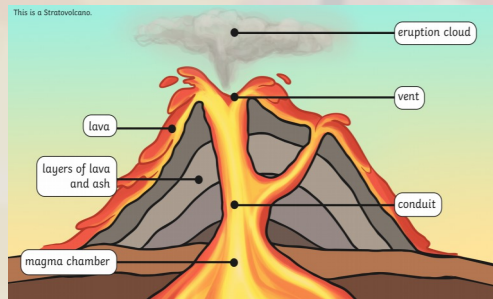
Geography Knowledge



What causes earthquakes and volcanoes and where are they located?

An earthquake is the shaking and vibration of the Earth's crust due to the movement of the Earth's plates (plate tectonics). Earthquakes can happen along any part of the plate boundary and occur when tension is released from the Earth's crust. Plates do not always move smoothly. Sometimes, they get stuck. When this pressure eventually releases, an earthquake tends to occur.

Volcanoes are formed when magma rises through cracks or weaknesses in the earth's crust. Pressure builds up within the Earth. When this pressure is released, magma explodes to the surface, causing a volcanic eruption. The lava from the eruption cools to form a new crust. Over time, after several eruptions, the rock builds up and a volcano forms.



Earthquakes and volcanoes can be found all around the world in different climate zones and biomes. They are located near the edges of plate boundaries.

Mount Vesuvius

Mount Vesuvius is located in the continent of Europe in the country of Italy. Vesuvius is still regarded as an active volcano. It is famous for its eruption in 79AD which destroyed the city of Pompeii. Although there were tell-tale signs, 'earth tremors' were common and didn't cause the residents any concern. By the time many residents were aware of impending danger and began to flee northwards, a dense black cloud of ash blotted out the light. The eruption began on the morning of 24th August and lasted for more than 24 hours. A rain of ash and pumice descended on the town for several hours. It is impossible to tell what proportion of the inhabitants died, but it is believed that the devastating eruption killed more than 16,000 people. The effect of the eruption was totally traumatic. Typically after even the most massive earthquakes, cities would be rebuilt but neither Pompeii or Herculaneum nearby were reoccupied. The site of Pompeii was attacked by looters and Romans created tunnels to find any riches that had been preserved.

Vocabulary

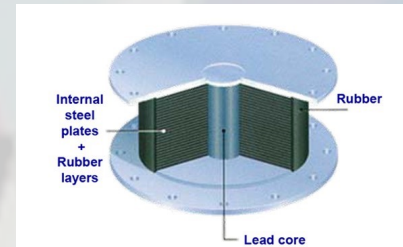
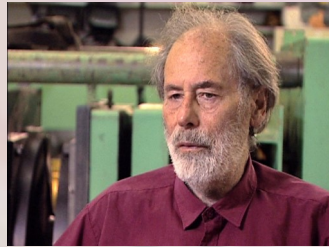
Climate zones	Divisions of the Earth's climates into general climate zones according to average temperatures and rainfall.
Biomes	An area of the planet that can be classified according to the plants and animals that live in it.
Mountains	A large landform that rises above the surrounding land in a limited area, usually in the form of a peak.
Volcanoes	A mountain or hill having a crater or vent through which lava, rock fragments, hot vapour, and gas are or have been erupted from the earth's crust.
Crust	The outermost solid shell of a rocky planet.
Magma	Molten or semi-molten material found beneath the Earth's surface—igneous rocks are made from this.
Lava	Molten, fluid rock that is ejected from a volcano and solidifies as it cools.
Extinct	A volcano that has not erupted in the last 10,000 years and will not erupt in the future.
Eruption	The ejection of rock and gas from a volcano.
Dormant	A volcano that has not erupted in the last 10,000 years, but it is possible it may erupt in the future.
Crater	A cup-shaped depression in the surface of the Earth, caused by volcanic activity.
Active	A volcano that has had an eruption in the last 10,000 years, and it is possible it may erupt in the future.
Earthquakes	Movements, fractures and vibrations in the Earth's crust as tectonic plates move.
Tectonic plates	Pieces of the Earth's crust.
Plate boundary	Where 2 tectonic plates meet.
Richter scale	A scale of numbers used to tell the size of earthquakes.
Seismic waves	Waves of energy that travel through the Earth's layers and are a result of earthquakes and volcanoes.
Settlements	A place where people live.
Land-use	The function of the land.
Equator	The equator is a line which is not real drawn around a sphere or planet, such as the Earth. It is one of the lines known as a line of latitude, or circle of latitude.
Northern/Southern Hemisphere	A half of the Earth
Tropics of Cancer and Capricorn	The tropics are the region of the Earth surrounding the Equator. The Tropic of Cancer is in the Northern Hemisphere and the Tropic of Capricorn in the Southern Hemisphere.

DT Knowledge

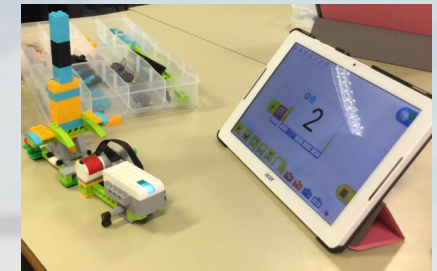
Vocabulary

Wires	A thin thread or rod of metal
Motors	A device which converts electrical energy into mechanical energy and can be used to drive a product.
Sensors	Device which detects changes in its surroundings, such as light and dark, temperature or movement.
ipad	A tablet computer used to control the electrical components using an algorithm.

William Henry Robinson



William (Bill) Henry Robinson was a New Zealand scientist and seismic engineer who invented the lead rubber bearing seismic isolation device (LRB). This device helps to absorb an earthquake's energy. LRBs are used under many structures around the world.



Emergency vehicles

Following natural disasters, such as earthquakes, specialist vehicles are used to support with clearing and re-building structures.



Designing

Computer aided design (CAD) is used by many engineers to create designs. Engineers use a range of technology including CAD software to create prototypes. A prototype is 'first draft' of the device you are creating.

Computer programming can be used to control the movement of objects.

Making

The Lego Wedo software is used to create algorithms (a set of instructions) to control the electrical components.

Gears and pulleys are both wheels. They are used to transfer rotatory motion from one place to another.

Motors change electrical energy into mechanical energy and can be used to drive a product.

Sensors detect changes in their surroundings, such as light and dark, temperature or movement.

Modification

During the making process, programmers have to 'debug' their algorithms. 'Debugging' is when you identify and remove errors.

Evaluating

Engineers complete the design process by evaluating their designs against the design criteria. They will reflect on how well their products meet the needs of their user.

Art and Design Knowledge

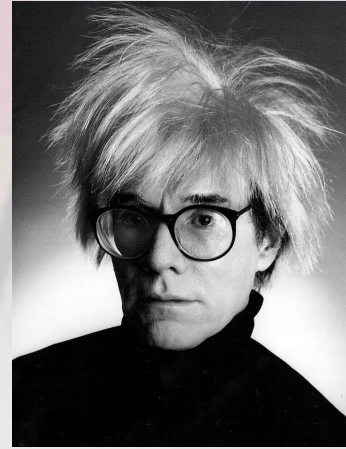
JMW Turner

JMW Turner was a famous Artist specialising in Romanticism. Romanticism is artwork with a greater focus on expression of emotion and imagination. A famous painting is 'Eruption of Vesuvius'



Andy Warhol

Andy Warhol is a very different style of painter to JMW Turner. Andy Warhol specialised in a type of artwork known as pop art. He also created a volcano painting called 'Vesuvius'.



Vocabulary

Complementary	Complementary colours are pairs of colours that contrast with each other more than any other colour.
Contrasting	Two colours from different segments of the colour wheel are contrasting colours.
Layering	Painting a layer, letting it dry. Then painting another layer over it. Paint shows through the colours beneath it until you place down several layers.
Atmosphere	The tone or mood of the piece.

Depth	Making objects appear closer or farther away and making a two-dimensional image seem three-dimensional.
Romanticism	Romantic art focused on emotions, feelings, and moods of all kinds. The subject matter varied including landscapes, religion, revolution, and peaceful beauty. The brushwork for romantic art became looser and less precise.
Comparison	Comparing two pieces identifying similarities and differences.
Emotion	A feeling that derives from a piece of artwork.

Art and design techniques

- Mixing and matching colours and using tones and tints help create an atmosphere in watercolour paintings.
- Layering is using more than one layer of paints in order to create a rich depth and atmosphere in paintings.
- Complementary and contrasting colours can be used to create emotion in oil pastel art. Oil pastels produce a paint-like effect, achieving depth in colour.
- Sketch books are used by artists for drawing or painting as a part of their creative process experimenting with art and design technique.