

Geography: Year 4 - Mother natures fury

Autumn 1: How does Mother Nature show its fury?
How do volcanoes differ in their level of danger?
What impact do earthquakes have on the environment?

Earthquake

Earthquakes are natural tremors or shakes under the ground.

The crust and the mantle are broken into pieces called tectonic plates. The movement of these plates away and towards each other can result in a variety of different events.

The majority of earthquakes occur near tectonic plate boundaries.

The strength, or magnitude of an earthquake is measured using the Richter scale of a score between 0 and 10.

Earthquakes can result in tsunamis and the flooding can result in further loss of life. Aftershocks after an earthquake are also a danger to life.

Earthquakes can be found across the world, and at times can have devastating effects on the surrounding environment.

Tsunami Case study: 2011 Japan

On March 2011, a savage tsunami shock the lives of the people living in Northeastern Japan.



Key vocabulary

Tremor	A shake
Crust	The outermost layer of a planet
Tsunami	A long high sea wave caused by an earthquake
Aftershock	A smaller earthquake following a larger earthquake
Lava flow	The movement of lava (melted rock above the earth's surface)
Tectonic	Relating to the structure of the earth's crust
Magma	Melted rock (still below the earth's surface)
Ring of Fire	Found in the pacific, this area has 90% of the world's earthquakes and 75% of the volcanoes
Active volcano	Volcanoes that can erupt anytime and do so regularly
Dormant Volcano	A volcano that has not erupted recently
Extinct Volcano	A volcano that isn't expected to ever erupt again
Composite Volcano	A large, cone shaped volcano
Shield Volcano	A volcano with gentle slopes
Dome Volcano	A volcano with rock formed around the vent

Volcano

Volcanoes are formed when magma from the Earth's upper mantle rises to the surface. At the surface, it erupts forming lava flows and ash.

During an eruption, magma is pushed upwards through vents and craters. When this magma reaches the Earth's surface it is known as lava.

Lava gives off a large amount of gas often resulting in an 'ash cloud' seen billowing out of the top of an erupting volcano.

There are three main types of volcano - composite, shield and dome.

Composite volcanoes erupt explosively, shield volcanoes are gentle slopes, whilst cone volcanoes have rock formed around the vent.

There are three levels of activeness: dormant, extinct and active. Volcanoes can be found across the world, and at times can have devastating effects on the surrounding environment.

Volcano case study: Mount Vesuvius

In 79 BCE, Mount Vesuvius violently erupted firing out smoke, lava and Ash. The eruption covered the nearby town of Pompeii.



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How does extreme weather effect peoples lives?
What impact does extreme weather have on the environment?

Tornadoes and hurricanes

Tornadoes are a rapidly rotating column of air that is in contact with both the surface of the Earth and a cumulus cloud. They are formed when warm, humid air collides with cold, dry air.

Tornadoes are often referred to as a twister, whirlwind or cyclone.

The location of tornadoes is often found in the Great Plains of the central United States, which has been nick named 'tornado alley'.

A hurricane is a storm with a violent wind which forms over tropical or sub tropical waters. Hurricanes travel across the world and are often given names of people.

When warm moist air over water rises, it is replaced by cooler air. The cooler air will then warm and start to rise. This cycle forms the hurricane.

Tsunami Case study: The 2015 Mississippi Tornado

In December 2015, a long track tornado made its way through Mississippi and Tennessee causing significant damage in several areas.



Key vocabulary

Costal	Land which meets the sea
Inland	Situated in the interior of a country rather than on the coast
Drought	A prolonged period of little or no rainfall, leading to a shortage of water
Air pressure	The force and weight of the air above us, measured in millibars
Anemometer	A weather instrument used to measure wind speed
Beaufort scale	A scale which uses observations of the effects of the wind to measure wind speed
Cirrus cloud	The highest clouds in the atmosphere
Dehydration	When our bodies don't have enough water
Heatwave	A long period of unusually high temperatures
Precipitation	Any type of moisture reaching the earth's surface
Storm	A type of weather bringing strong winds and heavy rain
Thermometer	A weather instrument used to measure the temperature
Wild fire	A large, destructive fire that spreads quickly

Extreme Weather

Extreme weather is when weather is significantly different from the usual weather pattern. This may take place over one day or a period of time.

From flash floods and heat waves in the UK, through to wild fires and severe droughts in Australia, extreme weather can have a devastating impact anywhere in the world.

Extreme weather can have a destructive impact on habitats and eco systems.

A meteorologist is someone who studies the weather using various forms of equipment.

Extreme weather case study: Comparing weather in the UK to Australia

