

**Year 3/4**

**Geography / History Knowledge Organiser- European and America – Angry Earth**

<b>Important Vocabulary</b>	
volcano	A mountain or hill, typically conical, having a crater or vent through which lava, rock fragments, hot vapour, and gas are or have been erupted from the earth's crust. Volcanoes can be described as active, dormant or extinct.
magma	Hot fluid or semi-fluid material below or within the earth's crust from which lava and other igneous rock is formed on cooling.
lava	Hot molten or semi-fluid rock erupted from a volcano or fissure, or solid rock resulting from cooling of this.
crater	A large hollow forming the mouth of a volcano.
earth's crust	The outermost layer of rock of which a planet consists, especially the part of the earth above the mantle.
mantle	The region of the earth's interior between the crust and the core, believed to consist of hot, dense silicate rocks.
fault lines	A line on a rock surface or the ground that traces a geological fault.
eruption	An act or instance of erupting.
earthquake	A sudden violent shaking of the ground, typically causing great destruction, as a result of movements within the earth's crust or volcanic action.
earth's plates	Each of the several rigid pieces of the earth's lithosphere which together make up the earth's surface.
plate tectonics	A theory explaining the structure of the earth's crust and many associated phenomena as resulting from the interaction of rigid plates which move slowly over the underlying mantle.
epicentre	The point on the earth's surface vertically above the focus of an earthquake.
vibration	An instance of vibrating.
seismic waves	Waves of energy in the earth produced by an earthquake or other means.
tsunami	A long, high sea wave caused by an earthquake or other disturbance.

<b>Locations of Famous Volcanoes / Earthquake Zones</b>	
North and South America	Mount St. Helens, Washington, USA. Last erupted 1980. Mauna Loa in Hawaii, USA. Last erupted 1984.
Europe	Mount Vesuvius, near Naples, Italy. Last erupted 1944; biggest eruption 79AD. Mt Etna, Island of Sicily. Last erupted 2014 Eyjafjallajökull, Iceland – travel disruptions 2010.

<b>Key Knowledge</b>	
How are volcanoes formed?	Magma rises through cracks or weaknesses in the Earth's crust. Pressure builds up inside the Earth. When this pressure is released, e.g. as a result of plate movement, magma explodes to the surface causing a volcanic eruption. The lava from the eruption cools to form new crust. Over time, after several eruptions, the rock builds up and a volcano forms.
What causes an earthquake?	An earthquake is the shaking and vibration of the Earth's crust due to movement of the Earth's plates (plate tectonics). Earthquakes can happen along any type of plate boundary. Earthquakes occur when tension is released from inside the crust. Plates do not always move smoothly alongside each other and sometimes get stuck. When this happens pressure builds up. When this pressure is eventually released, an earthquake tends to occur.
Further facts	<ul style="list-style-type: none"> <li>• The word volcano originally comes from the name of the Roman god of fire, Vulcan.</li> <li>• The object with the most volcanic activity in our solar system is Io, one of Jupiter's moons. Covered in volcanoes, its surface is constantly changing due to the large amount of volcanic activity.</li> <li>• Volcanic eruptions can send ash high into the air, over 30km (17 miles) above the Earth's surface.</li> <li>• Pumice is a unique volcanic rock (igneous) that can float in water.</li> <li>• Scientists use the different speeds of seismic waves to locate the epicentre (the point on the surface directly above where the earthquake originated) of earthquakes.</li> <li>• The most powerful earthquake ever recorded on Earth was in Valdivia, Chile. Occurring in 1960, it had a magnitude of 9.5.</li> <li>• There are 1,500 active volcanoes in the world.</li> </ul>

<b>Historical events</b>	
AD 79	Aug. 24, Italy: eruption of Mt. Vesuvius buried cities of Pompeii and Herculaneum, killing thousands.
1556	Jan. 23, Shaanxi (Shensi) province, China: most deadly earthquake in history; 830,000 killed.
1755	Nov. 1, Portugal: earthquake, fires, and Atlantic tsunami levelled Lisbon and was felt as far away as southern France and North Africa; 70,000 killed.
1783	Feb. 4, Calabria, Italy: series of 6 earthquakes over two-month period caused massive destruction, killing 50,000. One of first scientifically investigated earthquakes.
1811	Dec. 16, Mississippi Valley: earthquake reversed the course of the Mississippi River. Fatalities unknown due to sparse population in area. Aftershocks and tremors continued into 1812. It has been estimated that three of the series of earthquakes had surface-wave magnitudes of 8.6, 8.4, and 8.8 on the Richter scale. It is the largest series of earthquakes known to have occurred in North America.

## The Earth's Crust

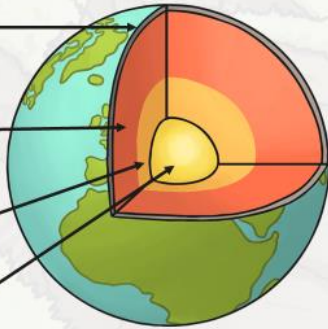
The Earth has four layers:

**The crust:** This is the outermost layer. The land we stand on is not just one solid piece. It is made of many pieces called plates. These plates fit together like puzzle pieces.

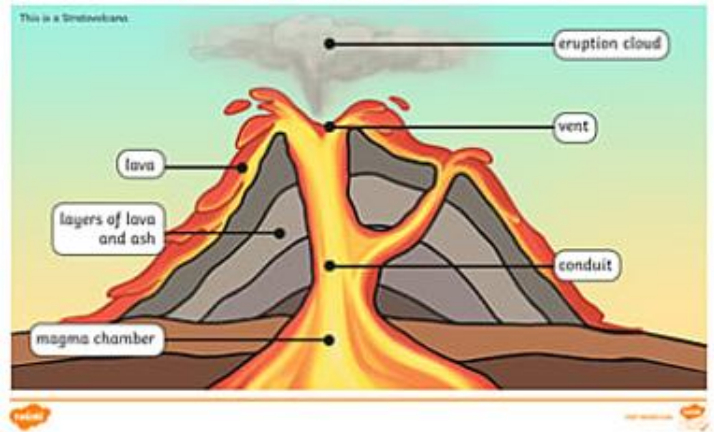
**The mantle:** This is the widest part. It is extremely hot and consists of semi-molten magma.

**The outer core:** This area is made of iron and nickel. It is very hot!

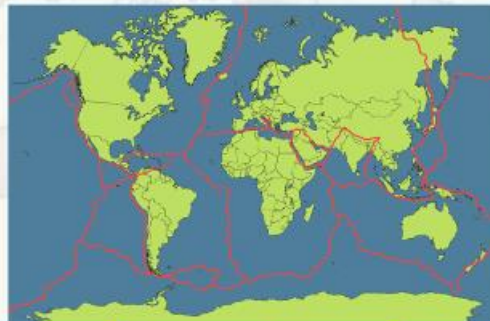
**The inner core:** This is the warmest layer. Temperatures can reach 5,500°C.



## A Cross-Section of a Volcano



## The Earth's Plates



The Earth's plates are always moving. They move so slowly that we usually can't feel it.

The edges of plates are called faults. Faults can rub together, push toward each other, or pull away from each other.

Have a look at the Earth's plates. What do you notice about where New Zealand is?

