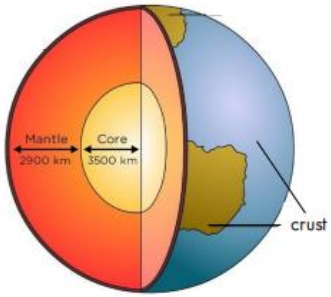
Year 6 Knowledge Organiser: Earthquakes and Volcanoes

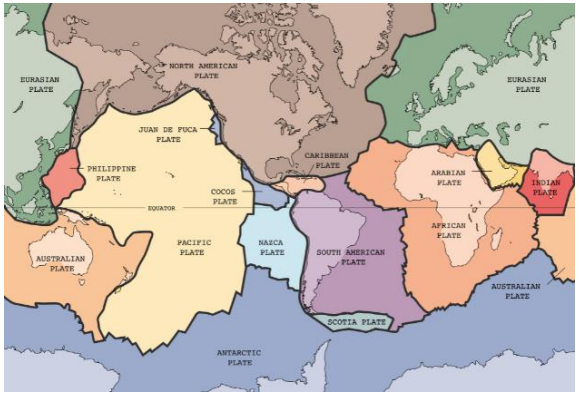
Inside Earth

Earth is made up of three sections. The crust consists of solid rock. Below this is the mantle, so hot that the rock has melted and flows like liquid. Finally, the core which is a hotter ball of iron and



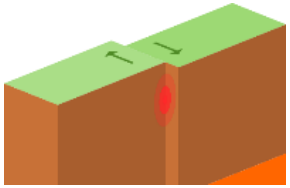
Tectonic Plates

The part of the land that is moving in the Earth's crust is called the lithosphere. The lithosphere is made up of the Earth's crust and a part of the upper mantle. It moves in 12 large chunks of land called tectonic plates. Some of these plates are huge and cover entire continents. They are around 62 miles thick and the movement of these help with the creation of mountains, volcanoes and earthquakes. They move between 1cm-10cm per year.



Earthquakes

What causes an earthquake?



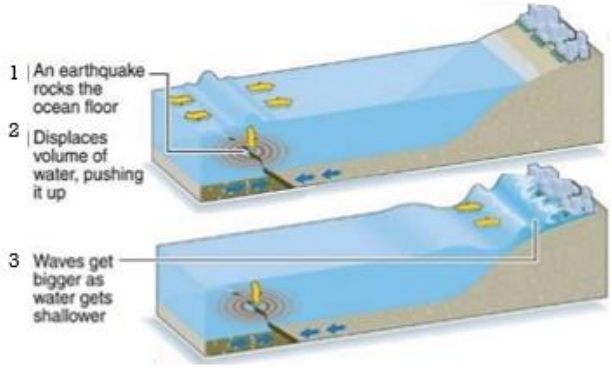
An earthquake is the shaking and vibration of the Earth's crust due to movement of the Earth's tectonic plates. Earthquakes can happen along any type of plate boundary. Earthquakes occur when tension is released from inside the crust. Plates do not always move smoothly alongside each other and sometimes get stuck. When this happens pressure builds up. When the plates become unstuck, this pressure is eventually released and this violent jolt causes an earthquake.

Magnitude

Shockwaves spread out from the epicentre (the strongest point of the earthquake). Magnitude, measured on a Richter scale, measures how strong an earthquake is. 1 is a small tremor and 9 is catastrophic.

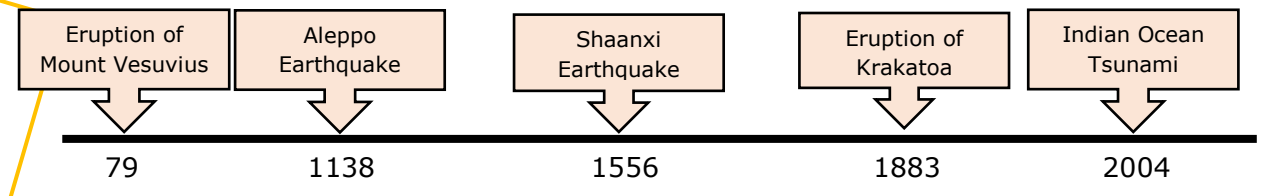
What causes a tsunami?

When an earthquake occurs in the sea, the water is suddenly moved outwards, creating a huge volume of water which travels quickly towards land.



Did you know? 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.

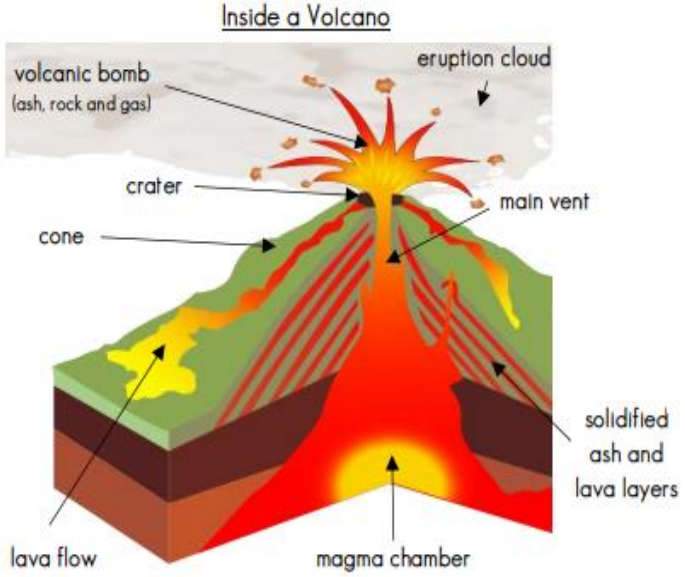
Did you know? The most powerful earthquake ever recorded on Earth was in Valdivia, Chile. Occurring in 1960, it had a magnitude of 9.5.



Can you find out about these natural disasters on the timeline?

How are volcanoes formed?

1. Magma rises through cracks or weaknesses in the Earth's crust.
2. Pressure builds up inside the Earth.
3. When this pressure is released, e.g. as a result of plate movement, magma explodes to the surface causing a volcanic eruption.
4. The lava from the eruption cools to form new crust.
5. Over time, after several eruptions, the rock builds up and a volcano forms.



Did you know? Mount Vesuvius destroyed the city of Pompeii, a city south of Rome, in A.D. 79 in about 25 hours!

The Ring of Fire is a major area around the Pacific Ocean where many earthquakes and volcanic eruptions occur. It is a large 40,000km horseshoe shape with 452 different volcanoes along it!

Here to Help!

Charities and organisations help before, during and after a natural disaster. This includes:

- Warnings and evacuation
- Search and rescue teams
- damage assessment
- continued assistance
- restoration and reconstruction

Examples

The Red Cross

United Nations Children's Fund (UNICEF)

Key Vocabulary	
active volcano	a volcano that is erupting or likely to erupt
aftershock	a smaller earthquake that happens after, and because of, a larger earthquake.
converge	two tectonic plates pushing together
diverge	two tectonic plates moving apart
dormant volcano	Seen as a 'sleeping volcano', it is a volcano that has not erupted for a while but technically could in the future.
epicentre	the central point of origin of the earthquake.
evacuation	leaving somewhere immediately due to danger
extinct volcano	a volcano that has not erupted for a long time and is unlikely to erupt at all in the future.
fault line	a crack in the earth's surface where the risk of earthquakes can be higher.
foreshock	a smaller earthquake that comes before a main earthquake.
igneous (or volcanic) rock	The cooled, and therefore solid, rock that came out of the volcano as lava.
magnitude	how strong an earthquake is
Mercalli scale	scale used to measure effects of earthquakes. It ranges from 'not felt', meaning no quake was felt by anyone, to 'extreme' where well-built buildings are destroyed.
phenomenon	a naturally occurring and unusual event
Richter scale	scale from 1-9 showing the magnitude of an earthquake
rubble	broken stone, brick, concrete caused by destruction
seismograph	an instrument used to measure the force and length of an earthquake occurs for
tremor	a sudden shake of the Earth