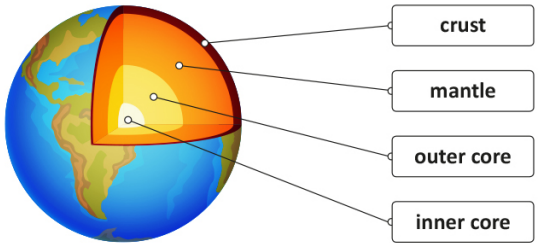
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Tremors

Earth

The Earth is made of different layers. The inner core is made mostly of solid iron, and the outer core is made of liquid iron and nickel. The mantle is made of solid rock and liquid rock called magma. The crust is a thin layer of solid rock that is broken into pieces called tectonic plates. These pieces move very slowly across the mantle.



Earthquakes

An earthquake happens when two tectonic plates move along a fault line. The earth shakes violently, especially at the centre of an earthquake, which is called the epicentre. Strong earthquakes can cause a lot of damage. Buildings and roads can be destroyed and people can be killed. Scientists use a machine called a seismometer and a numbered scale called the Richter scale to measure the strength of earthquakes. Many countries, including New Zealand, Ecuador and Nepal, have all been affected by strong earthquakes in recent years.

Volcanoes

When a volcano erupts, liquid magma collects in an underground magma chamber. The magma pushes through a crack called a vent and bursts out onto the Earth's surface. Lava, hot ash and mudslides from volcanic eruptions can cause severe damage.



Rocks

The Earth's crust is made up of many kinds of rock that have formed over millions of years. There are three main kinds of rock.

Igneous rocks are made from cooled lava. They usually contain visible crystals.

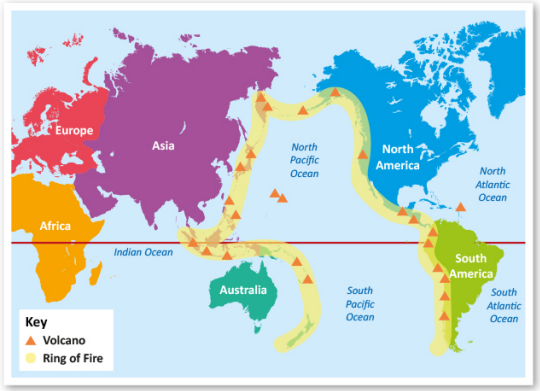
Sedimentary rocks are made from mud, sand and particles that have settled in water. They have been squashed over a long time to form rock.

Metamorphic rocks are formed when existing rocks are heated by the magma under the Earth's crust or squashed by the movement of the Earth's tectonic plates. They are usually very hard.

Igneous rocks	Sedimentary rocks	Metamorphic rocks
 granite	 sandstone	 marble
 basalt	 limestone	 slate

Ring of Fire

The Ring of Fire runs around the edge of the Pacific Ocean and is made up of fault lines in the Earth's crust. Most of the world's earthquakes and volcanic eruptions happen along the Ring of Fire.



Tsunamis

Volcanic eruptions or earthquakes under the sea can cause large waves called tsunamis. Tsunamis become larger and more powerful as they reach the shore and can cause a huge amount of damage to buildings, belongings and people. The 2004 tsunami in the Indian Ocean killed approximately 250,000 people in 13 countries and almost two million people were left homeless.

Natural disasters

Large earthquakes, volcanic eruptions and tsunamis are known as natural disasters because they are created by nature, affect many people and cause widespread damage. Other natural disasters include avalanches, droughts, floods, hurricanes, storms and wildfires.

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Eruption of Vesuvius timeline

Mount Vesuvius in Italy erupted in AD 79, covering the Roman town of Pompeii with volcanic ash. The town was rediscovered in the 16th century but excavations didn't begin until 1748 and archaeologists have been excavating ever since.

24th August 79 AD

8am	Small puffs of ash are seen from the volcano.
1pm	Mount Vesuvius erupts.
3pm	Hard pieces of cooled lava rain down.
5–6pm	Large pieces of pumice stone rain down.

25th August 79 AD

4am	The eruption column of ash and gas from the volcano reaches 30km into the sky.
5am	Violent earthquakes shake the whole area.
7am	The eruption column collapses, sending rock, gas, ash and heat into Pompeii. Anyone still in the town dies. The eruption continues for days.

September 79 AD

The whole area is now buried in rock and ash. The crater of Vesuvius has collapsed and the volcano is 200m shorter than before the eruption.

104 AD

Pliny the Younger writes two letters describing the eruption to a historian called Tacitus.

1748

The excavation of Pompeii begins.

1860

Guiseppe Fiorelli makes the famous plaster cast bodies of Pompeii by filling spaces left in the volcanic ash with plaster.

Present day

Archaeologists are still excavating the site.

Pompeii



View of Mount Vesuvius from Pompeii



Excavated streets and houses



Plaster cast body

Glossary

epicentre	The exact location on the Earth's surface that is directly above an earthquake.
eruption column	A cloud of super-heated ash and gas produced during a volcanic eruption.
fault line	A break in the Earth's crust.
lava	Hot, molten rock that comes out of a volcano or the solid rock formed when it cools.
magma	Hot molten rock found in the Earth's mantle.
pumice stone	A very lightweight igneous rock produced by a volcano.
Richter scale	A mathematical scale (1–10) used by scientists to describe the size of an earthquake. 1 describes the weakest earthquake and 10 describes the strongest.
seismometer	A device used to measure and record the strength and duration of an earthquake.
tectonic plate	A large, moving piece of rock that makes up the Earth's crust.
vent	An opening in the Earth's crust through which lava escapes.
volcanic ash	Tiny pieces of jagged rock and volcanic glass.
volcanic eruption	The sudden and violent explosion of lava, gas, ash and rock out of a volcano.

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