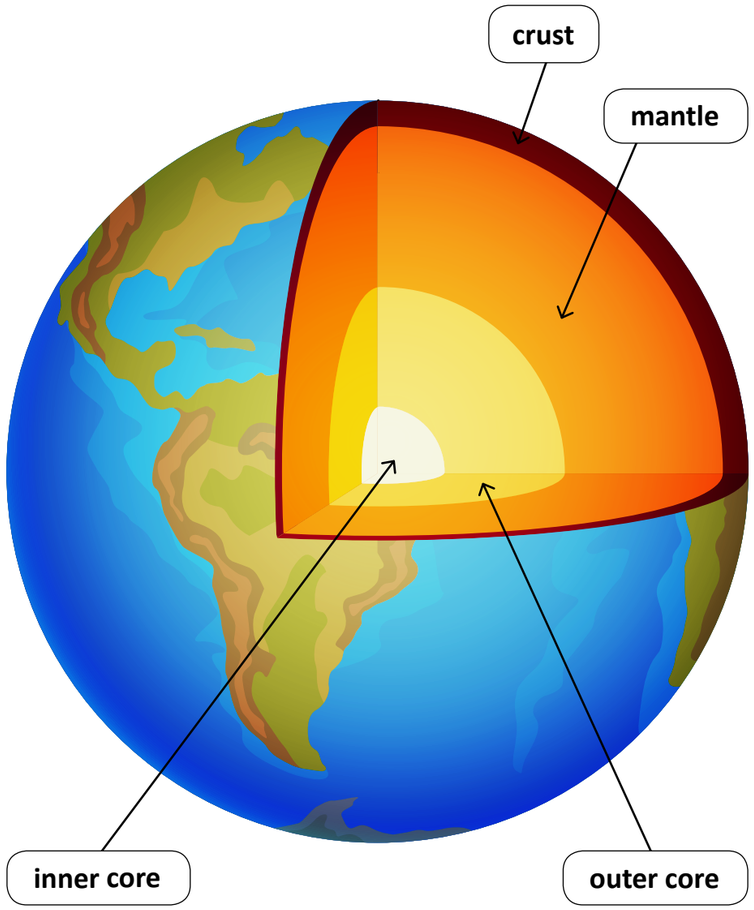
Rocks, Relics and Rumbles

Structure of Earth

Earth is made up of four layers. These are the crust, mantle, outer core and inner core. The crust is a thin layer of rock on the surface that is broken into large pieces called tectonic plates. The mantle is made up of molten and semi-molten rock called magma. The outer core is a liquid layer of metal. The inner core is solid metal, and the hottest part of the Earth.



Types of rock

There are three main types of rock in the Earth's crust. These are sedimentary, igneous and metamorphic.

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

Igneous rocks are made from cooled magma or lava.

Metamorphic rocks are formed when existing rocks are changed by heat and pressure.

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

Uses of rocks

The appearance and properties of rocks affect how they are used.

Chalk, a sedimentary rock, is soft and can be easily eroded. This makes chalk suitable for writing and drawing on blackboards.



Granite, an igneous rock, is very hard and impermeable. Granite is used for making kitchen work surfaces.



Marble is a metamorphic rock. It is easy to carve and is not easily eroded, making it suitable for sculptures.



Fossils

Fossils are the remains, or traces, of once-living things preserved as rock. Fossils are only found in sedimentary rock and the conditions must be just right for them to develop.



Mary Anning

Mary Anning (1799–1847) was an English fossil collector. She lived in Lyme Regis in Dorset, in an area now known as the Jurassic Coast. Mary had little formal education but was taught fossil hunting by her father. She made many important fossil discoveries during her lifetime, including an *Ichthyosaur* fossil in 1811 and a fossilised *Plesiosaur* in 1823.



fossilised Plesiosaur skeleton

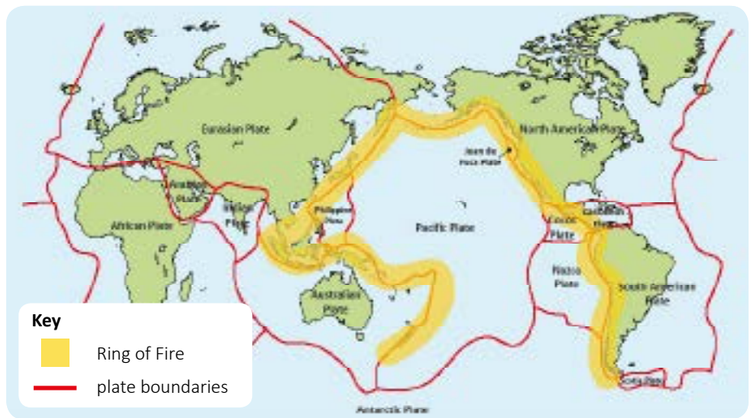
Soil

Soil is the material that covers the Earth's crust. It is made from a mixture of organic matter, air and rock particles from the underlying rock. Soil has many important functions, including anchorage for plant and tree roots and supporting many food chains. There are three main types of soil. These are sandy, silty and clay.

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Plate tectonics

The tectonic plates that make up the Earth's crust float on top of the mantle and are constantly moving. The places where tectonic plates meet are called plate boundaries. Tectonic plates can push together, pull apart or slide against each other. This movement at the plate boundaries can cause volcanic eruptions, earthquakes and tsunamis.



Earth's tectonic plates

Volcanoes

Volcanoes are mountains or hills with vents at the top through which lava, gases and ash erupt. There are four different types of volcano. These are shield, stratovolcano, cinder cone and lava dome. Volcanoes are classed as active, dormant or extinct. Active volcanoes are likely to erupt again. Dormant volcanoes might erupt again in the future. Extinct volcanoes will not erupt again.



Earthquakes

An earthquake is the sudden, violent shaking of the ground. As the Earth's tectonic plates try to move past each other at plate boundaries they can get stuck. The pressure builds up so that when the plates eventually slip, a huge amount of energy is released causing an earthquake. Earthquakes can cause a lot of damage, especially to buildings and roads.



earthquake damage

Tsunamis

A tsunami is a series of waves caused by a volcanic eruption or earthquake under the sea. As the waves near the shore, they become larger and can travel a long way inland, causing a huge amount of damage to buildings, belongings and people.



tsunami damage

Glossary

erode	Be gradually worn away.
impermeable	Not allowing water to pass through. Also described as waterproof.
lava	Hot, molten rock that comes out of a volcano.
liquid	A material that is runny, can be poured easily and takes the shape of its container.
magma	Hot molten rock found in the Earth's mantle.
molten	Metal or rock that is in a liquid state because of great heat.
organic matter	Dead and decaying plants and animals.
Ring of Fire	Area around the Pacific Ocean where many earthquakes and volcanic eruptions occur.
solid	A material that doesn't flow and can be held.
tectonic plate	A large, slow-moving piece of rock that makes up the Earth's crust.
vent	An opening in the Earth's crust through which lava escapes.
volcanic eruption	The sudden and violent explosion of lava, gas, ash and rock out of a volcano.

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