Year 3/4 – Rocks

Properties and uses of rocks

Rocks are made up of grains that are packed together.

Different types of rocks have different properties.

Hardness and softness
Some rocks are harder than others. For example, granite is a very hard rock. This makes it a good material for building as it doesn't wear away easily.

Marble is another hard rock. It has an attractive texture and colour and it can be cut and polished. Because of this, it is used to make floor tiles and wall tiles. Some statues are made from marble too.

Chalk is a soft rock and wears away easily. This makes it ideal for making chalk sticks to write on blackboards.

Permeable and impermeable
Some rocks, such as sandstone or chalk, let water soak through them. They are called permeable rocks.

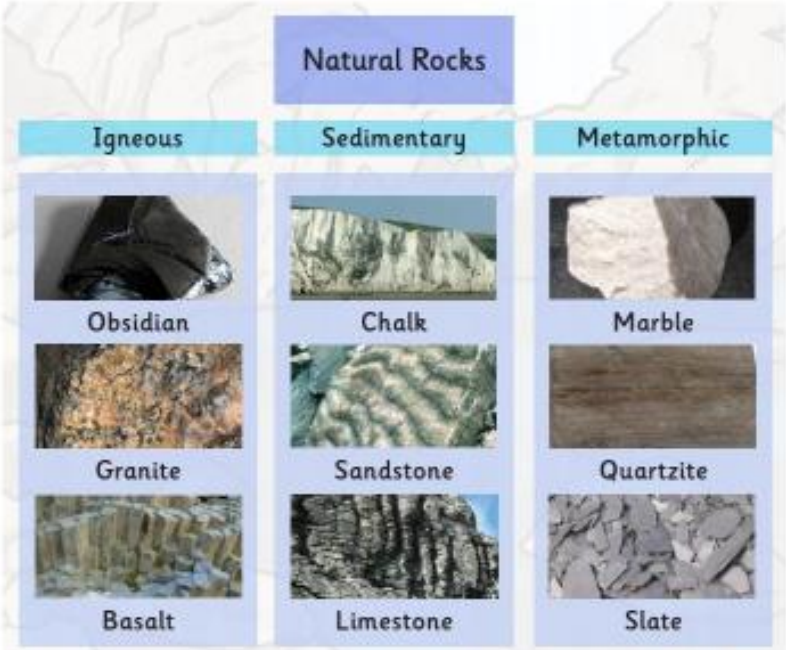
Other rocks, such as slate, do not let water soak through them. They are called impermeable rocks. Slate also splits easily into thin sheets. This makes it ideal for making roof tiles.

There are 3 types of rocks

Igneous rocks are formed from molten rock

Sedimentary rock form under the sea

Metamorphic rocks are formed when other rocks are affected by great temperatures and pressures



Key Vocab

Igneous rocks	Rocks formed from molten rock
Sedimentary rocks	Rocks formed under the sea
Metamorphic rocks	Rocks formed when other rocks are affected by great temperatures and pressures
Permeable	Having pores or openings that let liquids or gases pass through
Impermeable	Not allowing something (such as a liquid) to pass through
Fossil	The preserved remains or traces of a dead organism
Deposit	To lay down
Palaeontologist	A scientist who studies plants and animals that lived millions of years ago
Extinct	Gone forever.
Particle	A tiny quantity or fragment


Polished marble pillars in Buckingham Palace


Slate tiles being put on a house roof

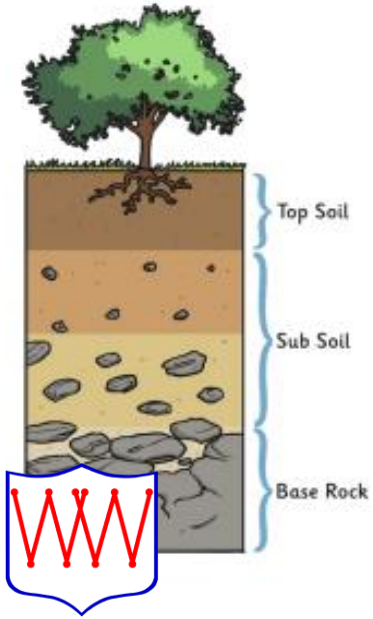

Granite planters at Manchester City Football Club

Year 3/4 – Rocks

What is spoil made from?

Soil is a mixture of tiny particles of rock, dead plants and animals, air and water. Different soils have different properties depending on their composition.

Sandy soil is pale coloured and has large particles. These create lots of small air gaps. Water drains through them easily so it usually feels dry.
Clay soil is usually sticky and has small particles. They contain very few air gaps and water does not drain through it easily.
Chalky soil is a light brown soil. Water drains through it quickly.
Peat does not contain any rock particles. It's made from very old decayed plants and is dark, crumbly and rich in nutrients.



Layers of soil
Half of soil is air and water. In soil you can find sand, small stones, bits of leaves and roots. There are also millions of micro-organisms in the soil which help break down the matter and make the soil healthy and full of life.

What is a fossil?

Fossils are the preserved remains or traces of a dead organism. They provide evidence for how living things and the environment have changed over time.

Fossils have been found in rocks of all ages, stretching back billions of years. However, most of the species found in the fossil record have died out or become **extinct.**

Fossils don't just show how living things have changed; they can also help us understand how the Earth has changed.

Over millions of years the Earth's surface shifts and changes. For example, rocks that once formed the seafloor might be forced up to form a mountain range. This means that you can sometimes find the fossils of sea creatures at the peak of a mountain!


Trilobite fossil


Ammonite found on a fossil hunt


Fossils found on the Dorset coast


Fossilised ferns


Palaeontologists at work

What is a palaeontologist?

Have you ever dug in soil looking for interesting rocks or old objects? Perhaps you have even found an old shark tooth or arrowhead! This is similar to the job of a **palaeontologist**!
A palaeontologist is someone who studies the history of ancient life. In order to do that, they look for fossils, which are the remains or imprints of living things from long ago.

Fossils can tell palaeontologists not only about the organism, but also the environment it lived in and what the Earth was like at that time. Fossils are most often thought of as dinosaur bones, but fossils can include any living thing, including plants.