

Knowledge Organiser - Year 3

Science - Rocks and Soils

Vocabulary

Rocks: Rocks are made up of grains that are packed together.

Mineral: Minerals are solid chemical substances that occur naturally, for example diamond. Each grain that makes up the rock is made from a mineral.

Pebble: Little bits of rock broken off and worn smooth.

Magma: Liquid rock inside a volcano.

Lava: Liquid rock that flows out of a volcano.

Molten rock: A rock that has been reduced to liquid through heating.

Permeable: Allowing water to pass through it.

Durable: Something that is hardwearing.

Density: The mass of an object, how compact the object is. High density rocks will sink, low density rocks will float.

Fossils: The remains or impression of a prehistoric plant or animal embedded in rock.

Soil: Soil is a mixture of tiny particles of rocks, organic matter from animals and plants, as well as air and water.



Fossils

Fossils are the remains or The impression left by a prehistoric plant or animal in a rock.



1) An animal, creature or plant dies and ends up at the bottom of the sea. It gets covered by a layer of sediment.

2) Over time, more layers of sediment form on top and the only part to remain are the bones.

3) Over a long period of time, the sea recedes (goes back) leaving the rock.

4) Erosion and weathering of the rock means the fossil can now be seen!

Key Scientist

William Smith (1769 - 1839)



William was known as the 'Father of English Geology'. Geology is the name for the study of rocks. He collected fossils. He realised that he could tell the age of a rock by looking at the fossils inside it.

Classifying Rocks

Man made	Natural		
	sedimentary	igneous	metamorphic
Man-made rocks are often used for buildings and structures. <u>Examples:</u> Concrete and bricks	Usually are grainy in texture and may contain fossils e.g. sandstone and limestone	Usually have linking grains giving the rock a crystal-like appearance e.g. granite	Often has a crystal-like appearance e.g. marble
	Formed under the sea. Rocks are broken into small pieces by erosion. They settle as mud, sand, minerals and remains of living things. Pressure turns this sediment into rocks.	Formed when molten rock or magma (liquids found far underground) turn into a solid rock. This happens when lava spills out of a volcano and cools.	When an original rock (sedimentary or igneous) has been altered by heat.

Soil

Soil contains water, air, minerals (from broken down rock) and organic matter (living and dead plants and animals).

Things you might find in soil: sand, small stones, bits of leaf, insect wings, roots and ants and other creatures.

Half of soil is air and water. The water is in the soil and the air is in the gaps between the soil particles.

Clay soil: Very sticky when wet.

This soil is a heavy soil and water does not drain through it quickly.
Sandy soil: Light and dry. This has lots of air gaps so water drains through quickly.

