Knowledge Organiser - Year 3 - Science: Rocks

Rocks are a solid mineral material forming part of the surface of the Earth. They are found on the surface or underneath the soil.

Key Vocabulary

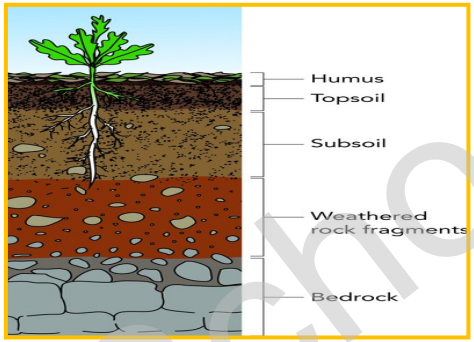
Absorbent	Able to soak up liquid easily.
Crystals	Crystals form in rocks when heat and pressure are applied. They are small parts of the rock with a very organised structure giving them a distinct pattern.
Density	How tightly packed the tiny particles in the rock are. A dense rock is a heavy rock!
Dissolve	When something solid mixes with a liquid and becomes part of the liquid.
Erosion	Where ice, wind or water, wears away the land.
Fossils	The remains or impression of a prehistoric plant or animal embedded in rock.
Fossilisation	The process of a plant or animal becoming a fossil and turning to stone.
Geology	The scientific study of rocks and the planet Earth.
Grains	Any small, hard particles in the rocks.
Granite	A very hard natural igneous rock containing mainly quartz.
Igneous	Rock that has been formed from magma or lava.
Lava	Molten rock that comes out of the ground, from a volcano for example.
Magma	Molten rock that remains underground.
Metamorphic	Rock that started out as igneous or sedimentary rock but changed due to extreme heat or pressure.
Organic soil matter	Otherwise known as humus. It is made of dead parts of plants and animals. Humus takes in water and has plenty of nutrients.
Permeable	A material that allows liquids or gases to pass through it.
Sediment	Natural solid material that is moved and dropped off in a new place by water or wind, e.g. Sand.
Sedimentary	Rock that has been formed by layers of sediment being pressed down hard and sticking together. You can see the layers of sediment in the rock.

Working Scientifically

Pupils should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should start to recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. They should also recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. Pupils should use relevant scientific language to discuss their ideas and communicate their findings.

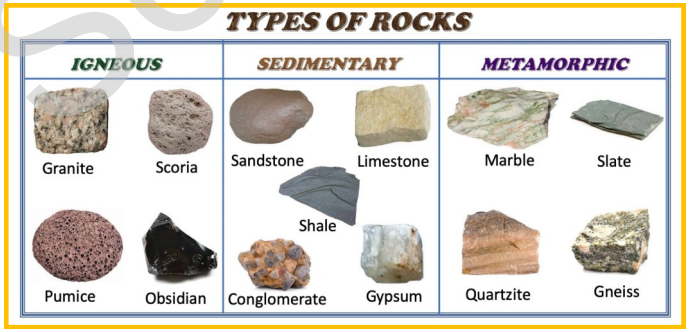
Key Question: Why are rocks different?

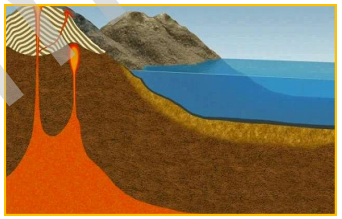
Soil is a loose material that lies on top of the land. It is a mixture of many different things including rock, minerals, water and air. Soil also has living things and dead things in it. We call the living and dead things "organic matter". Soil is important for life on Earth.

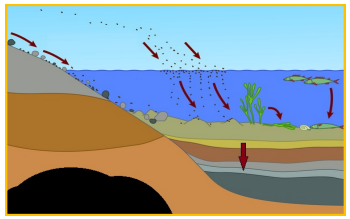


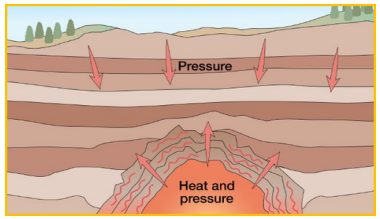
Bedrock is made up of igneous, sedimentary, or metamorphic rock. Bedrock is the hard, solid rock beneath surface materials such as soil and gravel. Bedrock also underlies sand and other sediments on the ocean floor. We use bedrock to build foundations into, so that our houses and buildings don't fall over in the wind and rain.

There are three main types of rocks and although they are formed in different ways, their type can change over time. Igneous rock is formed underground as magma (liquid rock) It comes to the surface as lava and cools quickly. Some igneous rocks stay under ground and cool slowly over a very long time and this makes them look very different to the ones on the surface.









Igneous rock is formed underground as liquid rock and then cooled to a solid.

Sedimentary rock is formed by layers of material building up over time.

Metamorphic rock is formed from igneous or sedimentary rock changing due to heat and pressure.

Sedimentary rocks are made when sand, mud and pebbles get laid down in layers. Over time, these layers are squashed under more and more layers. Eventually, the layers turned to rock due to weight of the materials on top. Sedimentary rocks can be formed in deserts, lakes, rivers and seas. When a plant or animal dies in a watery environment and is buried in mud and silt. Soft tissues quickly decompose leaving the hard bones or shells behind. Over time, sediment builds over the top and hardens into rock. This is how fossils are formed and why the further down you dig, the further back in history you are going! Sometimes fossils come to the surface as rocks are eroded (worn away) by the weather, or by water or ice.