

# Year 3 – Rocks

ALP Trust Science 2020

## Language for Learning

Through the activities in this topic, pupils should **understand and use key scientific words precisely** - spelling these words correctly. This includes - words with precise scientific meanings (e.g. weight and mass), words with different meanings in scientific and everyday contexts (e.g. drag) and words relating to scientific enquiry (e.g. variable).

## Key Scientific Words

Key Word	Definition (Meaning)
<b>Rock</b>	A mineral substance found in the Earth's crust
<b>Mineral</b>	A naturally occurring substance that makes up rocks
<b>Grain</b>	A tiny, rounded piece of rock
<b>Crystal</b>	Pieces of a mineral with sharp edges
<b>Appearance</b>	The way something looks
<b>Property</b>	'What something is like/What it does'
<b>Interlocking</b>	When crystals fit together with no gaps between them
<b>Porosity/Porous</b>	Porous rocks can soak up water
<b>Absorb</b>	To soak up
<b>Texture</b>	The scientific word used to describe the shapes and sizes of the crystals or grains in a rock
<b>Fossils</b>	The remains of a dead animal that have become trapped within rock
<b>Erosion</b>	The wearing away of rocks or soil
<b>Sedimentary rock</b>	Rock formed from layers of sediment
<b>Sediment</b>	Small pieces of rock that have settled at the bottom of a liquid
<b>Metamorphic rock</b>	Rock that has been formed by changing igneous or sedimentary rocks
<b>Metamorphic</b>	A word meaning 'changed'
<b>Igneous rock</b>	A rock formed when magma or lava cooled down
<b>Soil</b>	A mixture of pieces of rock (including Clay and Sand), material from living things, air and water
<b>Sandy Soil</b>	A soil that contains larger particles than clay soils

## Key Concepts

**Rock** is a substance that is found in the Earth's crust.

There are three types of rock. These are **Sedimentary**, **Igneous** and **Metamorphic** rock.

Rocks are made of **grains**. Each grain is made of a chemical called a **mineral**.

We can **compare** and **group** together different kinds of rocks based on their **appearance** and **simple physical properties**.

**Appearance:** Grains in rocks can be different shapes and sizes. **Interlocking** grains (crystals) fit together without any gaps between them. If the grains are **rounded**, there can be gaps between the grains.



**Rounded Grains**



**Interlocking Grains**

**Porosity:** If the grains are rounded, the gaps between the grains may mean that the rock is **porous**. Porous rocks can **absorb** water. Some rocks absorb more water than others.

**Hardness:** Some rocks are **harder** than others. You can file your fingernails, because the nail file is harder than your nails. The nail file scratches your nails, but you cannot scratch the file. In the same way a harder rock can scratch a softer rock. **A rock will scratch any rocks that are softer than it is.**

Type of Rock	Sedimentary	Igneous	Metamorphic
<b>Examples</b>	Limestone and Sandstone	Basalt and Granite	Marble and Slate
<b>Grains or Crystals?</b>	Separate Grains	Crystals	Crystals (Often in bands)
<b>Hard or Soft?</b>	Soft	Hard	Hard
<b>Is it porous?</b>	Often	Not Usually	Not Usually

**Fossils** are formed when things that have lived are trapped within rock. Small parts of rock are formed when larger rocks are broken down. For example, by **erosion**. These small parts of rocks can reach rivers, lakes and seas - where they build up as **sediment**. If any animals or plants get trapped in the sediment, they may form **fossils**.

**Soil** forms part of the top layer of the land surface of the Earth. Soils are made up from a mixture of pieces of **rock** (including Clay and Sand), **material from living things, air and water**. The mixture can be different between soils. For example, a **Sandy Soil** contains larger particles than a clay soil - a sandy soil allows water to pass through it more easily.