

Knowledge Organiser

| Year Group | Subject | Topic |
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| 3 | Science | Rocks, Soils and Fossils |

The Big Picture

Rocks are made of one or more minerals. There are three main types of rock, based on the way the rock was formed: **sedimentary, metamorphic and igneous**.

Soil is formed of fine rock particles mixed with air, water and particles from dead plant and animal matter. There are **three main types of soil** which are grouped depending on the amount of sand and clay in them.

A fossil is the preserved remains of a dead organism. The process by which a fossil is formed is called **fossilisation**.

Enquiry Question

- Are rocks natural or man-made? How are rocks formed? What are the three main types of rocks?
- Are rocks useful?
- Where does soil come from? Why is soil important?
- What are fossils? How do animals become fossilised?

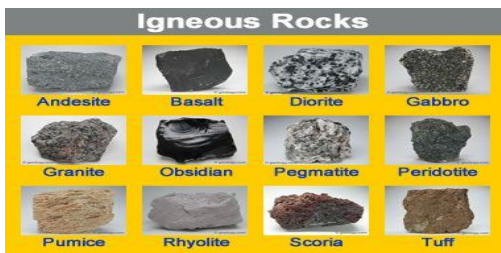
Key Vocabulary

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| Clay soil | soil that has a high proportion of clay. |
| Fossils | the remains or traces of plants and animals that lived long ago. |
| Igneous | a rock formed from magma either inside the Earth or on the surface. |
| Impermeable | cannot easily let water in. |
| Loam soil | a soil which has an even mixture of sand, clay and silt. |
| Magma | liquid rock that is very hot. |
| Mineral | of a precise mix of chemical 'elements' which are organised in a very specific way. |
| Metamorphic | a rock formed when existing rock is changed through heat and pressure. |
| Non-porous | something that doesn't have any gaps in it that water can get in to. |
| Organic material | dead or decaying matter found at the top of soil. This lies just on top of the topsoil. |
| Permeable | can easily let water in |
| Porous | something that has gaps in it that water can get in to. |
| Rock | a solid formed of the particles of one or more minerals. |
| Sedimentary rock | rock formed when layers of mineral particles are squashed together |
| Silt | fine rock particles that are not as fine as clay, but not as coarse as sand. |

Metamorphic Rocks - Metamorphic rocks are formed by great heat and pressure. They are generally found inside the Earth's crust where there is enough heat and pressure to form the rocks. Metamorphic rocks are often made from other types of rock. For example, shale, a sedimentary rock, can be changed into a rock such as slate, marble, anthracite, soapstone, and schist.



Igneous Rocks - Igneous rocks are formed by volcanoes. When a volcano erupts, it throws out hot molten rock called magma or lava. When the magma cools down and hardens, the magma or lava is called igneous rock. Examples of igneous rocks include basalt and granite.



Sedimentary Rocks - Sedimentary rocks are formed by years and years of sediment being packed together and becoming hard. These pieces will settle at the bottom of a river, lake or sea and over a really long time (perhaps millions of years), they will form into solid rock. Some examples of sedimentary rocks are shale, limestone and sandstone.



Fossils - Fossils are the remains or traces of plants and animals that lived long ago. The word fossil comes from the Latin word 'fossilis', which means, 'dug up'.

