# Knowledge Organiser – Science – Rocks and Fossils

Careers connected to rocks: geologist, archaeologist

The Acorn Partnership
Marston Montgomery Primary School
Long Lane C of E Primary School

## Sticky Learning

- I can distinguish between an object and the material it is made from.
- I can identify and name a variety of everyday materials, including wood, metal, plastic, water and rock.
- I can compare and group together a variety of everyday materials on the basis of their simple physical properties e.g. hard
- I can identify and compare the suitability of a variety of everyday materials
- I can find out how the shape of solid objects made from some materials can be changed by squashing, bending, twisting and stretching

### What is soil made from?

AIR – Oxygen, carbon dioxide, nitrogen
ORGANIC MATTER – Living and dead plants and animals.
WATER – Air and water fill the gaps between particles of soil.
MINERALS – Broken down rock.


## Rocks formed on Earth

| Igneous Rock | Metamorphic Rock | Sedimentary Rock |
|---|---|---|
|  |  |  |
| Far underground the temperature is so hot, rock melts into a liquid (molten rock). When the liquid is underground, it is called magma and it can cool to form igneous rock. | Metamorphic rocks are formed under the surface of the earth from the change (metamorphosis) that occurs under the intense heat and pressure (squeezing). | These rocks form under the sea. Rocks are broken into small pieces by wind and water (erosion). They settle as mud, sand, minerals and even remains of living things. Over time layers build up and the pressure turns this sediment into rock. |

### How fossils are formed.


## Core Learning

### Lesson Sequence

1. Explore the formation and properties of igneous rocks

2. Explore the formation and properties of sedimentary and metamorphic rocks

3. Weathering and the suitability of rocks for different purposes

4. Explore how water contributes to the weathering of rocks

5. Understand how fossils are formed

6. Explore different types of soil

# Science Vocabulary

| Word | Meaning |
|---|---|
| Extrusive igneous rock | Rock that has been formed from molten lava and either cooled quickly or slowly |
| Igneous rocks | Rocks created from solidified lava |
| Intrusive igneous rock | Rock that has been formed under the Earth's surface over a long period of time |
| Magma | Hot liquid rock below the surface of the Earth; when a volcano erupts it can be seen and is called lava |
| Crystals | A solid, clear mineral formed when liquid is cooled into a solid |
| Sandstone | A type of sedimentary rock made from layers of sand that has built up over millions of years |
| Marble | A type of metamorphic rock |
| Metamorphic rock | Rocks that have changed from igneous of sedimentary through heat and pressure |
| Limestone | A type of sedimentary rock |
| Sedimentary rock | Rocks that are made from layers of sediment that has been subjected to heat and pressure |
| Chemical weathering | The wearing away of rocks by chemicals, such as acid |
| Weathering | The wearing away of rocks which are broken down into smaller pieces |
| Physical weathering | The wearing away of rocks by sunlight, water or wind |
| Acid rain | Rain which has been made too acidic by air pollution |
| Biological weathering | The wearing away of rocks by plants of animals |

| Word | Meaning |
|---|---|
| Texture | How something feels |
| Receding | To move backwards |
| Erosion | The wearing away of rocks by wind or water |
| Appearance | How something looks |
| Submerged | Put under water or under another type of liquid |
| Sediment | A mixture of sand and mud |
| Amber | A hard, translucent, usually brownish-yellow fossil resin, used for making jewellery |
| Embedded | Set firmly or imprinted within surrounding material |
| Fossil | The imprint of a prehistoric plant or animal embedded in a rock |
| Extinct | A species, family, or other larger group that no longer has any living members |
| Fragments | Small pieces |
| Decompose | The process where dead animals and plants break down into smaller parts |
| Clay soil | A slightly orange soil which holds its shape when squeezed; water does not drain easily through clay soil |
| Sandy soil | A slightly yellow soil which is dry, fine and does not hold water well |
| Chalky soil | A rock soil which is light-coloured, dry and does not hold water well |

# Knowledge Organiser: **Rocks**

## Before and After Test

### Describe how a fossil is formed.

1. _____

2. _____

3. _____

4. _____

5. _____

### What four things is soil made from?

### Identify and label the different rock.

### Identify the different types of rock.

| _____ Rock | _____ Rock | _____ Rock |
|---|---|---|
|  |  |  |
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