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| Science Focus: | Rocks | Year Group: 3 | Autumn Term |
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Key Knowledge:

Overview

- There are three types of naturally occurring rock – **metamorphic**, **sedimentary** and **igneous**.
- Some rocks can be man-made – examples of these include brick, concrete and quartz.
- Fossils are the remain of prehistoric life
- Soil is made from pieces of rock, **minerals**, decaying plants and water.

Types of Rock

Sedimentary

- Little pieces of rock that have been **eroded** lay at the bottom of a rivers or lakes. This is called sediment.
- Over a long, long time there becomes many layers of sediment at the bottom of a river. As this sediment compacts down it forms **sedimentary** rocks.
- **Sedimentary** rocks, are **permeable**, crumbly and easily worn down.
- Examples of **sedimentary** rock are chalk, sandstone and limestone.



Igneous

- When **molten magma** cools, **igneous** rock is formed.
- The **magma molten** cools and either forms rocks under the Earth's surface, or flows out of erupting **volcanoes** as **lava**.
- **Igneous** rocks are durable and non-porous.
- Examples of **igneous** rocks include obsidian, Granite and Basalt.



Metamorphic

- When **igneous** and sedimentary rocks are put under extreme heat and pressure, the rock transforms into a **metamorphic** rock.
- **Metamorphic** rocks are strong and durable.
- Examples of **metamorphic** rocks include marble, quartz and slate.



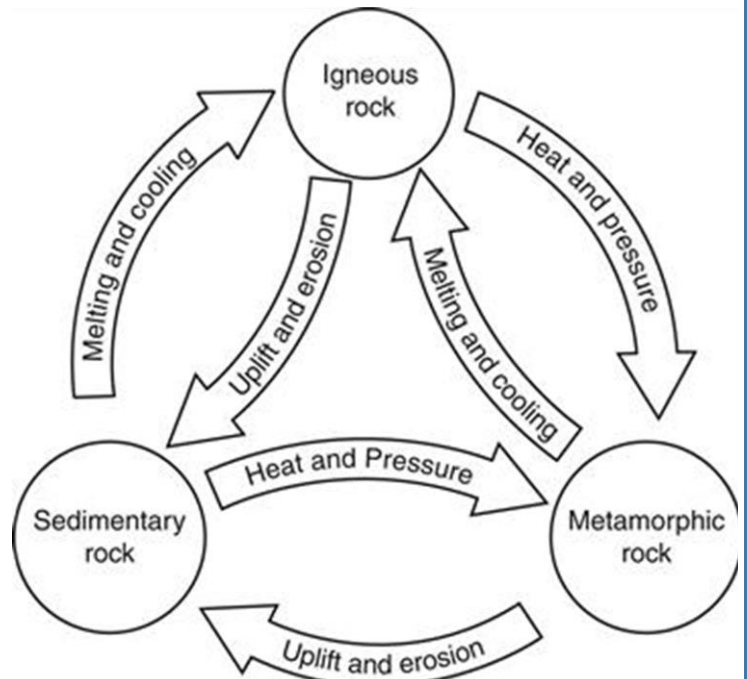
Possible Experiments:

- Explore the different rocks in the local environment and their features.
- Investigate what happens when rocks are rubbed together and collide with each other.
- Investigate what happens to rocks when they are in water.
- Sort different types of rocks based on their properties – rough or smooth, **permeable** or **impermeable**, strength or appearance.

Key Vocabulary:

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| Erosion | When water, wind or ice wears at land. |
| Baseroack | The solid rock in the ground which supports all the soil above it. |
| Igneous | Rocks that are formed by volcanic action or intense heat. |
| Magma | Molten rock that is formed in very hot conditions |
| Metamorphic | Rocks that have had their original structure changed by pressure and heat. |
| Mineral | Something that is formed naturally in rocks and in the earth. |
| Molten | Molten rock, metal or glass has been heated to a very high temperature |
| Permeable | Allows liquids to pass through it. |
| Impermeable | Does not allow liquids to pass through it. |

Diagrams and Symbols:

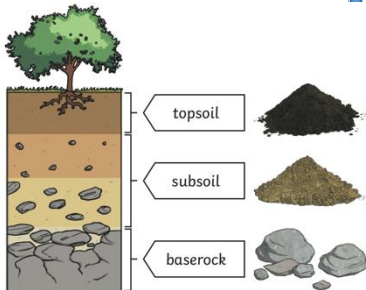


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Key Knowledge:

Soil

- When rocks are broken down into smaller, tiny pieces soil is formed.
- Soil is made up of different layers, at the top is leaf litter and old decaying plants. Below this is different layers of soil, the top layer is called the top soil and is made up of very fine pieces of rock. These pieces of rock gradually get larger and larger in the layers below this, the subsoil, until the **base rock** is reached.
- Underground caves are formed when water passes through and **permeates** through the **baserock** and **erodes** some of the rock away.



Fossils

- Fossils are usually formed when a living thing (plant or animal) dies and it is then covered up by sediment over thousands of years. As time then progresses and sea level changes, the rock gets **eroded** and weathered, and the fossil is then exposed.
- In some cases, fossils are made when the parts of an animal that are more rigid, such as their teeth or bones, or thick branches or stems in plants are preserved.
- Other fossils are made when imprints from footprints or handprints, from a dinosaur for example, are shown on **sedimentary** rock.
- Fossils can tell us all about the Earth and prehistoric life that existed hundreds of thousands and millions of years ago.
- The process of fossils being made is called **fossilisation**.



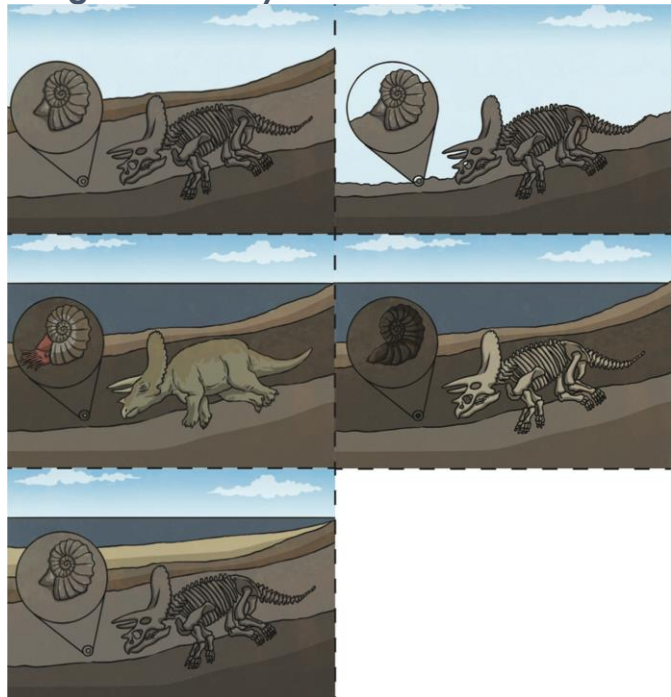
Key Vocabulary:

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| Palaeontology | The study of fossils as a guide to the history of life on Earth. |
| Sedimentary | Rock that has been formed by layers of sediment being pressed down hard and sticking together. |
| Lava | Molten rock that comes out of the ground is called lava . |
| Fossilisation | The process by which fossils are made. |
| Sediment | Solid material that settles at the bottom of a liquid, especially earth and pieces of rock that have been carried along and then left somewhere by water/wind. |
| Volcano | A mountain from which hot melted rock, gas, steam and ash from inside the Earth sometimes burst. |
| Rock | A solid mass made up of minerals. Rock forms most of the Earth's outer layer, including cliffs and mountains. |

Possible Experiments:

- Explain the different living things whose fossils have been found.
- Explore and compare the different kinds of soils, including those in the local environment.

Diagrams and Symbols:



The process of fossilisation.

