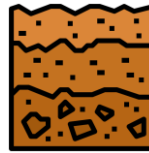



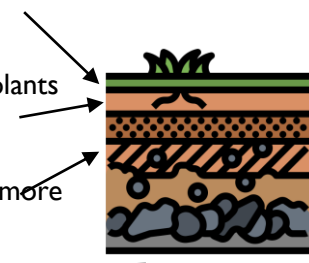
Rocks, Soils and Fossils

KNOWLEDGE ORGANISER




| ESSENTIAL ROCKS VOCABULARY | |
|----------------------------|---|
| rock | The solid mineral forming part of the surface of the earth. |
| erosion | The process where rock is worn away by water, wind or ice. |
| boulder | A large rock,, typically worn smooth by erosion. |
| sedimentary | Rock that has formed from sediment. |
| clay | A stiff, sticky earth that can be moulded when wet. |
| flint | A hard grey rock. |
| slate | A grey metamorphic rock easily split into smooth, flat plates. |
| metamorphic | Rock that has undergone transformation by heat or pressure. |
| permeable | Allowing liquid or gas to pass through it. |
| impermeable | Not allowing liquid or gas to pass through it. |
| fossilisation | The process by which fossils are made. |
| sediment | The deposits of small stones and dirt that is dragged along by the current |
| igneous | Igneous rocks are when hot, molten rock solidifies. |
| fossil | The remains or impressions of a prehistoric plant or animal embedded in rock. |
| magma | Extremely hot liquid and semi-liquid rock below the Earth's crust. |

| Three Types of Natural Rocks | |
|---|---|
| Sedimentary  | Sediment (small, broken parts of rocks) is carried by rivers and streams. It is deposited into a lake or a sea where it builds up in layers. The sediment is squashed by the weight above it until it forms new rock. Sedimentary rock is layered, and fossils of dead animals are often found in the layers. |
| Igneous  | The inside of the earth is very hot (hot enough to melt rocks into a molten rock called magma). Igneous rock is formed when magma breaks through the earth's crust and cools. |
| Metamorphic | Metamorphic rock is a combination of sedimentary and igneous rock. It is forms when sedimentary and igneous rocks are subjected to intense pressure and heat due to seismic activity in the earth's crust. |

| Layers of Soil | |
|--|---|
| The top layer is called humus. It is made of dead leaves and animals. |  |
| The next layer down is top soil. It is where plants grow their roots. | |
| Below that, there is subsoil. This usually has more rock and stone in it. | |
| The bottom layer is called bedrock. It is made of large, solid rock beneath everything else. | |

| MAKING LINKS TO PREVIOUS LEARNING GOLDEN VOCABULARY | |
|---|--|
| Rivers | Sediment is found in the bottom of rivers. |
| Volcanoes | Igneous rocks are formed from magma from the earth's crust. |
| Dinosaurs | Palaeontologists study fossils to learn more about dinosaurs. |
| Volcanoes | Magma becomes lava when it reaches the earth's surface. |

| The Fossilisation Process | |
|---|--|
| <ol style="list-style-type: none"> 1) A living thing, such as a dinosaur dies and falls to the bottom of an ocean or lake. 2) The flesh rots away, leaving behind the hardest parts of the body, such as bones, shell and teeth. 3) Over time, water drags sediment over the remains. It fills the empty spaces in remains. More layers of sediment settle, which puts pressures on the layers below. The layers eventually turn into sedimentary rock. 4) Sometimes a mould fossil will form, where all the original parts of the living thing will be dissolved and just an imprint will remain. Sometimes cast fossils will form, where sediment is transported into the mould and fills it over time to create a replica of the original organism. 5) Eventually, the material outside the mould will solidify to become rock. 6) Over time, erosion and weathering will cause the fossils to become exposed. |  |

| Soil | |
|--|--|
| Soil is the top layer of the earth. It is made up of a mixture of things: | |
| <ul style="list-style-type: none"> • Water • Minerals from broken down rock • Organic matter, such as dead plants and animals | |

| Ways of Describing Rocks | |
|---|--|
| <ul style="list-style-type: none"> • Hard and soft. This describes whether than can moulded by hand or will require specialist tools to cut. • Permeable and impermeable. This describes weather water can pass through or not. • Durable. This describes how resistant they are to erosion and weathering. • High and low-density. This describes how tightly packed the molecules are. High-density rocks sink and low-density rocks float. | |