Enriching lives every day; enabling our school community to learn, achieve and flourish through living 'life in all its fullness'

Sustainability

Subject: Science

Year group: 3

Term: Autumn

Unit name: Rocks

National curriculum:

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- Describe in simple terms how fossils are formed when things that have lived are trapped within rock
- Recognise that soils are made from rocks and organic matter

Key vocabulary

Rock	absorb water
Stone	soil
Pebble	fossil
Boulder	marble
Grain	chalk
Crystals	granite
Layers	sandstone
Hard	slate
Soft	soil
Texture	peat
	sandy/chalk/clay soil

Prior Knowledge - Distinguish between an object and the material from which it is made. (Y1 - Everyday materials). Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials). Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials). Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials). Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)

Scientific enquiry

Classifying	Based on the children's own criteria, classify rocks. (At the beginning of the topic, this will most likely focus on appearance, leading to physical properties at the end of the unit.) Look at different soils and discuss how they are similar/different.
Observing over time	Observe how soil separates into different layers in water
Pattern seeking	Not relevant
Comparative/fair testing	Test the hardness of different rocks. Test what happens when rocks are put in water. Test how quickly water runs through different types of soil.
Researching	Research how fossils are formed.

Spiritual Development *Isaiah 43:19*

"See, I am doing a new thing! Now it springs up; do you not perceive it? I am making a way in the wilderness and streams in the wasteland."

Assessment for learning

Recapping prior knowledge- beginning of unit- what do children already know?

Beginning of each lesson- focus on recall of previous learning (quick quizzes)

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Key Learning- what will the children know by the end of the unit?

Rock is a naturally occurring material. There are different types of rock e.g. sandstone, limestone, slate etc. which have different properties. Rocks can be hard or soft. They have different sizes of grain or crystal. They may absorb water. Rocks can be different shapes and sizes (stones, pebbles, boulders). Soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). The type of rock, size of rock pieces and the amount of organic matter affect the property of the soil. Some rocks contain fossils. Fossils were formed millions of years ago. When plants and animals died, they fell to the seabed. They became covered and squashed by other material. Over time the dissolving animal and plant matter is replaced by minerals from the water.

To be able to identify the different types of rocks.  	There are three types of rocks that are formed naturally. ***Igneous:*** - • When molten magma cools, igneous rocks are formed. • This either cools and forms rocks under the earth's surface, or flows out of erupting volcanoes as lava and may mix with other minerals. • Examples include granite and basalt. • This type of rock is strong, hardwearing and non-porous.	***Sedimentary:-*** • Sometimes, little pieces of rocks that have been weathered can be found at the bottom of lakes, seas and rivers This is called sediment. • Over millions of years, layers of this sediment builds up forming sedimentary rocks. • Examples include limestone and chalk. • Sedimentary rocks are porous and can easily be worn down .	***Metamorphic:-*** • When some igneous and sedimentary rocks are heated and squeezed (pressured), they form metamorphic rocks. • Examples include slate and marble. • Metamorphic rocks are strong ***Bricks and concrete are not rocks because they are man-made.***
To describe how fossils are formed.	Fossils are the remains of prehistoric life. They are usually formed when a living thing (plant or animal) dies and the body is covered up or buried by sediment over tens of thousands of years. Some fossils are formed when the tough bones and teeth in animals, and the woody part of plants are preserved.	Other fossils are made from imprints in surrounding sedimentary rock such as footprints or imprints from shells. Fossils tell us about the Earth and about life that existed hundreds of thousands and millions of years ago. 	
To understand how soil is formed.	Soil is made from pieces of rock, minerals, decaying plants and water. When rock is broken down into small grains, soil is formed. There are layers of soil: above the soil is leaf litter and recently decaying plants. as the soil becomes deeper, the rock grains become larger until bedrock is reached.