Knowledge Organiser Science Year 3 Spring

Materials: Rocks and soils

St Elizabeth's Catholic Primary School
"Love one another as I have loved you"

Prior knowledge

Year 1

- ❏ Name objects and identify the materials they are made from.
- ❏ Recognise that objects are made from materials that suit their purpose.
- ❏ Recall that a property is how a material can be described.

Year 2

- ❏ Name objects with the same use that are made from different materials.
- ❏ Name materials that are used to make objects with different uses.
- ❏ Recognise that stretching, twisting, bending and squashing can cause some solid objects to change shape.
- ❏ Name properties that make materials suitable for their use.

Knowledge and skills covered in this topic

- ❏ Children will group rocks using their appearance.
- ❏ Children will group rocks using their physical properties.
- ❏ Children will describe the process of fossil formation.
- ❏ Children will identify fossils and group rocks accordingly.
- ❏ Children will compare soils and how they were formed.
- ❏ Children will describe a soil sample using sedimentation.

British Values

- ❏ Mutual respect

Scientific skills developed in this topic

- ❏ To observe the appearance of rocks closely, using a magnifying glass.
- ❏ To use the results for the physical properties of rocks to make predictions, suggest improvements and explain observations over time.
- ❏ To present research on fossil formation.
- ❏ To use the fossil record to answer questions about the past.
- ❏ To record the drainage rate for different soils in a bar chart.
- ❏ To draw and label a diagram.

Key words

Absorbency: How well a material can soak up water or liquids.
Acid rain: Rain that has harmful chemicals in it which can change or damage rocks.
Boulder: A large rock.
Chalk: A soft, white sedimentary rock mainly made from tiny sea creature remains.
Clay: A stiff, sticky, fine-grained soil that can be moulded when wet.
Crystal: Rock that has formed into a 3D shape (e.g. cube) that makes it shiny.
Fossil: The prehistoric imprint or remains of living things that have turned to stone.
Grain: A very small piece of rock.
Granite: A hard igneous rock with visible crystals.
Hardness: How easy it is to scratch or wear away a rock.
Igneous: Rock formed when molten rock (lava or magma) cools.
Impermeable: A material that does not allow water to pass through it.
Lava: Molten (liquid) rock that is above ground.
Magma: Molten rock that is below ground.
Marble: A shiny metamorphic rock made from limestone that has been changed.
Metamorphic: Rock that has formed when other rocks have been heated or squashed.
Mineral: A natural substance. The tiny bits that make up rocks.
Organic matter: Things that used to be living (e.g. plants and animals).
Palaeontologist: A scientist who studies fossils to learn about prehistoric living things.
Pebble: A small, rounded, smooth rock.
Permeable: A material that lets water pass into it.
Rock: A material made from one or a combination of minerals, rocks and organic matter.
Sandstone: A sedimentary rock made from lots of tiny grains of sand stuck together.
Sediment: Tiny bits of rock, soil and plants that settle to the bottom of water.
Sedimentary: Rock made from layers of sediment squashed together.
Slate: A flat, grey sedimentary rock made from squashed or heated clay or volcanic ash.
Soil: The top layer of the Earth's surface in which plants grow and is made up of a mixture of sediment, organic matter, water and air.