Subject Theme Overview — Year 3 — Charlton Kings Junior School

Subject	Science	Theme	Rocks and Soils	Term	Autumn 1

What should I already know?

- A variety of everyday materials, including wood, plastic, glass, metal, water, and rock.
- Ways to describe the simple physical properties of a variety of everyday materials.
- That everyday materials can be grouped together based of their simple physical properties.

What should I know by the end of the unit?

- Rocks can be identified, compared and classified using their appearance and simple physical properties.
- Rocks are formed in different ways, and can be classified as **metamorphic**, **sedimentary** and **igneous**.
- Recognise that rocks are suitable for different purposes based on their properties (permeability, hardness, durability and solubility).
- F**ossils** are found in **sedimentary** rock, and are formed when sediment fills the inside of a dead organism.
- **Top soil** consists of small bits of rock, organic matter and living things.
- There are different types of soil.

Silver Threads:
Process – Rocks are formed because of different processes. Erosion and weathering are processes that cause rocks to crumble.
Changes – Rocks can change when they are pressured, heated, melted.
Structure – Rocks have different structures, which can include grains/particles, crystals and fossils
Energy – Rocks are formed or can change when high levels of energy are applied

Working Scientifically

Scientific skills I will use:

- Make careful observations *(of rocks in the locality, the **structure** of different rocks, the composition of different soil types).*
- Classify rocks *(according to their **structure**)*
- Report on findings using a simple written explanation *(what are the properties of different rocks?)*
- Use results to draw simple conclusions *(how could the properties of different rocks be used/useful?)*

Key People/Ideas

Mary Anning

Enquiries & Investigations

- How are rocks used? Observe the use of rocks in the local area, including those used in buildings and gravestones. How have these rocks changed over time?
- How are rocks similar and different? Use magnifying lenses to study, classify and identify rocks according to whether they contain grains, crystals or fossils
- What are the properties of rocks? Investigate what happens to different rocks when they are rubbed together, submerged in water, etc. How could these properties be useful?
- Are all soils the same? Investigate different types of soil and how they are composed. How might they be formed?
- What is a fossil? To identify fossilised remains.

Key Vocabulary

metamorphic rocks	Rocks that were once one form of rock but have changed to another under the influence of heat or pressure. Examples are marble and slate.
sedimentary rocks	Rocks that are made when sand, mud and pebbles settle in layers. Over time, these layers are squashed under more and more layers. Eventually, the layers are turned to rock. Examples are sandstone, chalk and limestone.
igneous rocks	Rocks that start below the Earth's crust and get pumped out by volcanoes. Examples are granite, basalt and pumice.
fossil	Fossils are the remains or traces of plants and animals that lived long ago. Fossils give scientists clues about the past.
preserve	To protect from decay.
permeability	When rocks have pores or openings that let liquids pass through
solubility	This is the ability to dissolve into another substance. Water can dissolve minerals in old rock.
loam	Loam is a type of soil. Loam contains clay, sand, and decaying organic substances.
top soil	The rich upper layer of soil in which plants have most of their roots.
humus	Organic matter such as decomposing leaves that can be found at the top of the soil layers and takes in water.