Y3 Science – Rocks

Inspiration
Creativity (problem solving)

Partnership with parents
Community – trip to Teesmouth

Key Questions
- What are the different types of rocks?
- How can the different types of rocks be grouped?
- Why are different rocks used for different purposes?
- Who was Mary Anning?
- What is a fossil and how is it formed?
- What is in soil and how is it formed?
- Which soil type is the most permeable?

Working Scientifically
- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams and keys.
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

Also covered in:
Y2 – Materials
Y3 – Volcanoes (Geography)
Y6 - Evolution

At the end of this unit, children will be able to:
- Use appearance and simple physical properties to group rocks giving explanations
- Describe the formation of fossils
- Know that soils are made from rocks and organic matter and have different properties
- Explain who Mary Anning is and why we learn about her.
- Name types of soil and investigate their permeability
- Ask and answer questions using scientific enquiry and comparative and fair tests
- Record and present data from careful systematic observations
- Report findings in a range of ways
- Draw simple conclusions, make predictions, suggest improvements and raise further questions about rocks and soils
- Answer questions or support findings with scientific evidence

Knowledge

- Fossils are formed over many years when an organism dies and is covered in sediment
- Over millions of years the sediment is compressed and forms new layers of sedimentary rock and the shape of the organism creates a rock
- Identify and classify rocks according to whether they have crystals or grains and whether they have fossils in them.
- Identify individual properties: appearance, texture, grain size and chemical composition
- Sedimentary rocks often contain small holes called pores which can contain water or other fluids. If the holes are connected, then the rock is permeable and fluids can flow through the rock. If the holes are not connected, then the rock is impermeable and fluids can't flow through the rock.
- Some types of rock have interlocking grains that fit tightly together. Granite is a rock with interlocking grains. Other types of rock have rounded grains. Sandstone is a rock with rounded grains.
- A rock that is porous has many small holes, so liquid or air can pass through.
- Igneous rocks are formed from molten rock that has cooled and solidified. The inside of the Earth is very hot - hot enough to melt rocks. Molten (liquid) rock is called magma. When the magma cools enough, it solidifies and igneous rock forms.
- Sedimentary rocks are formed from the broken remains of other rocks that become joined together.
- Sedimentary rocks contain rounded grains in layers. The oldest layers are at the bottom and the youngest layers are at the top. Sedimentary rocks may contain fossils of animals and plants trapped in the sediments as the rock was formed.
- Metamorphic rocks are formed from other rocks that are changed because of heat or pressure. They are not made from molten rock – rocks that do melt form igneous rocks instead.
- Metamorphic rocks rarely contain fossils. Any that were present in the original sedimentary rock will not normally survive the heat and pressure.
- The basic components of soil are minerals, organic matter, water and air.

Topic Specific Vocabulary
Extinct, palaeontologist, sediments, compressed, organism, grains, crystals, fossils, properties, hardness, float, porous, sedimentary, sample, soil, metamorphic, igneous, chalk, diamond, sandstone, flint, granite, marble, limestone

NC Subject content
- 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

Subject Specific/Academic Vocabulary This vocabulary should be explicitly taught in context. Other tier 2 words should also be explored as they are encountered.			
Year 3	**Year 4**	**Year 5**	**Year 6**
Benefit, impact, issues, occur, process, sequence, source, variables	Appropriate, consequences, identified, procedure, range, relevant, significant, specific, theory, transfer	Factors, affect, analyse, contribute, demonstrate, outcome, react, volume,	Component, exclude, function, imply, initial, justify, sufficient.
We are scientists PowerPoint presentation – different types of rocks. Making chocolate rocks.			