

National Curriculum Science - Knowledge

Key Learning

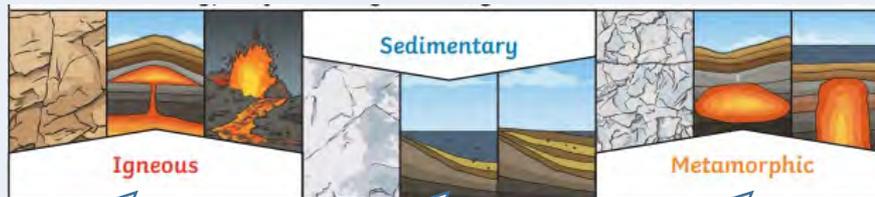
Vocabulary

- 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

Compare different kinds of rocks based on their appearance and properties including natural and human-made

Natural Rocks			Human-Made Rocks
Igneous	Sedimentary	Metamorphic	
Obsidian 	Chalk 	Marble 	Brick 
Granite 	Sandstone 	Quartzite 	Concrete 
Basalt 	Limestone 	Slate 	Coade Stone 

To know the three types of naturally occurring rocks: sedimentary, metamorphic and igneous and how they are formed.



Igneous  
Begins as molten magma inside the Earth, cools as it moves towards the surface.

Sedimentary  
Rock is formed when sediment is deposited from ice, air, wind or water and build up layers

Metamorphic  
Rocks that have been changed by heat or pressure and usually do not contain fossils

- Sedimentary Rocks**- Rocks that are formed when layers of sediment settle and are pushed together.
- Metamorphic Rocks** – Rocks that are changed by heat or pressure, these could start as sedimentary or igneous rocks
- Igneous** – Rocks that start as molten magma inside the Earth and cool as they reach the surface
- Fossil** – prehistoric remains of a plant or animal found in rocks and soils.
- Fossilisation** – The process by which fossils are made
- Permeable**- Allows water to pass through
- Impermeable**-Doesn't allow water to pass through
- Magma**-Hot liquid rock that remains underground
- Lava** – Hot liquid rock that comes above ground
- Sediment** – small bits of natural material
- Erosion** – Where wind or water wears away material.
- Geology** – The study of rocks

National Curriculum Science – 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 and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- 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, keys, bar charts, and tables
- 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.

Key Learning continued...

To describe the process of fossilisation

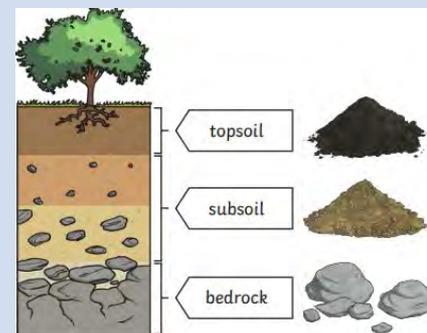
Fossilisation	
An animal dies. It gets covered with <b>sediments</b> which eventually become rock.	More layers of rock cover it. Only hard parts of the creature remain, e.g. bones, shells and teeth.
	

Over thousands of years, <b>sediment</b> might enter the mould to make a <b>cast fossil</b> . Bones may change to mineral but will stay the same shape.	Changes in sea level take place over a long period.	As <b>erosion</b> and weathering take place, eventually the fossil becomes exposed.
		

To learn about Mary Anning’s dinosaur fossil discovery and its importance.



To know that soil is made from small rock particles mixed with dead and decaying plants and animals and the different soil types depend on the rock it is formed from.



Scientific investigations

Permeability of different soil types

- Make careful and systematic observations
- Record findings
- Report on findings with simple explanations

## Sequence of learning – Rocks

- 1 **What are the differences between rocks?** Compare and sort a selection of rocks based on their appearance and properties. How many different ways can you find to sort them?
- 2 **What are the three types of natural rock?** Investigate the difference between sedimentary, igneous, and metamorphic rocks using chocolate to make models of the three different types and how they are formed.
- 3 **How are fossils formed?** Understand the process of fossilisation, make your own fossil using clay imprints and Plaster of Paris to create cast fossils
- 4 **Why were Mary Anning's fossil discoveries so important?** Explore the key discoveries made by Mary Anning and how these help us develop our understanding about what happened in the past.
- 5 **What is soil and how is it formed?** Explore the soil in the school grounds, what can you find? Learn the process of making soil and the different types depend on the rocks it is made from.
- 6 **How permeable is soil?** Investigate how permeable different types of soil are, focussing on observations and recording.