

## Y3 Knowledge Organiser Science - Topic: Rocks and Fossils (Spring term)

### Objectives/outcomes:

- I can name the three different types of rocks
- I can give examples of natural and man-made rocks
- I can handle and examine rocks to identify their properties
- I can group rocks by their properties and identify simple similarities and differences
- I can make careful observations
- I can explain in simple scientific language how soil is formed
- I can explain the main processes of fossilisation
- I can identify the importance of Mary Anning's work to the field of palaeontology

### Working Scientifically objectives:

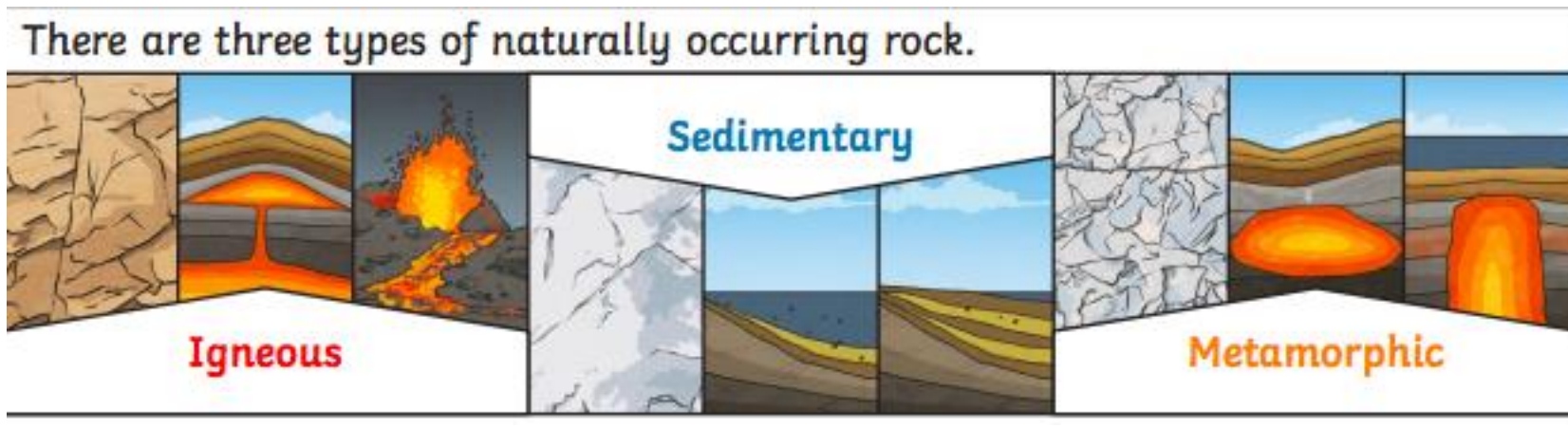
- Asking relevant questions
- Setting up enquiries and choosing equipment
- Setting up fair tests (with help)
- Carefully observing and measuring
- Recognising when to use other sources of information to find answers
- Choosing how to record information - tables, tally charts, Venn and Carroll diagrams and bar charts
- Looking for patterns - identifying and classifying
- Explaining results - drawing conclusions and using results


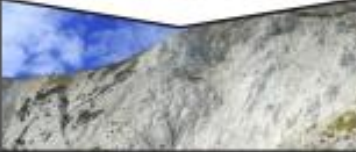










### Key vocabulary






- **Igneous rock** - rock that has been formed by magma or lava
- **Sedimentary rock** - Rock that has been formed by layers of sediment being pressed down hard and sticking together. You can see the layers of sediment in the rock.
- **Metamorphic rock** - Rock that started out as igneous or sedimentary rock but changed due to being exposed to extreme heat or pressure
- **Magma** - molten rock that remains underground
- **Lava** - molten rock that comes out of the ground
- **Sediment** - Natural solid material that is moved and dropped off in a new place by water or wind eg sand
- **Permeable** - Allows liquids to pass through it
- **Impermeable** - does not allow liquids to pass through it
- **Fossilisation** - The process by which fossils are made
- **Palaeontology** - the study of fossils

		<ul style="list-style-type: none"> <li>• <b>Erosion</b> - When water, wind or ice wears away land</li> </ul>
<u>Investigations:</u> <ul style="list-style-type: none"> <li>• Sorting rocks into own criteria eg rough and smooth, shiny and dull</li> <li>• Researching Mary Anning</li> <li>• Investigating which rocks are permeable or not</li> <li>• Investigating features of natural and man-made rocks and noting these</li> <li>• Investigating features of soils</li> </ul>	<u>Resources</u> <ul style="list-style-type: none"> <li>• Powerpoints</li> <li>• Variety of rocks</li> <li>• Videos</li> </ul>	<u>Curriculum Links:</u> <ul style="list-style-type: none"> <li>• <b>Maths</b> - recording and reading data from graphs and tables, measuring, estimating, predicting</li> <li>• <b>Art</b> - Using clay to create a fossil</li> <li>• <b>English</b> - Using a variety of sources to conduct research</li> <li>• <b>Computing</b> - using Google to conduct research</li> </ul>

Key examples



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

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.
				



## Soil

Soil is the uppermost layer of the Earth. It is a mixture of different things:

- minerals (the minerals in soil come from finely broken-down rock);
- air;
- water;
- organic matter (including living and dead plants and animals).

