

	Year 3	Topic: Rocks
National Curriculum links: <ul style="list-style-type: none"> • 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. 		

Prior learning	Future learning
<ul style="list-style-type: none"> • Distinguish between an object and the material from which it is made. (Y1 - Everyday materials) • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials) • Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials) • Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials) • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials) 	<ul style="list-style-type: none"> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (Y6 - Evolution and inheritance) • The composition of the Earth. (KS3) • The structure of the Earth. (KS3) • The rock cycle and the formation of igneous, sedimentary and metamorphic rocks. (KS3)

WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE	
Show understanding of a concept using scientific vocabulary correctly	
Key learning	Possible evidence
<p>Rock is a naturally occurring material. There are different types of rock e.g. sandstone, limestone, slate etc. which have different properties. Rocks can be hard or soft. They have different sizes of grain or crystal. They may absorb water. Rocks can be different shapes and sizes (stones, pebbles, boulders). Soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). The type of rock, size of rock pieces and the amount of organic matter affect the property of the soil.</p> <p>Some rocks contain fossils. Fossils were formed millions of years ago. When plants and animals died, they fell to the seabed. They became covered and squashed by other material. Over time the dissolving animal and plant matter is replaced by minerals from the water.</p>	<ul style="list-style-type: none"> • Can name some types of rock and give physical features of each • Can explain how a fossil is formed Can explain that soils are made from rocks and also contain living/dead matter
Key vocabulary	
rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, soil, types of soil (e.g. peaty, sandy, chalk, clay)	

Common misconceptions

Some children may think:

- rocks are all hard in nature
- rock-like, man-made substances such as concrete or brick are rocks
- materials which have been polished or shaped for use, such as a granite worktop, are not rocks as they are no longer 'natural'
- certain found artefacts, like old bits of pottery or coins, are fossils
- a fossil is an actual piece of the extinct animal or plant
- soil and compost are the same thing.

Apply knowledge in familiar related contexts, including a range of enquiries

Activities

- Observe rocks closely.
- Classify rocks in a range of ways, based on their appearance.
- Devise a test to investigate the hardness of a range of rocks.
- Devise a test to investigate how much water different rocks absorb.
- Observe how rocks change over time e.g. gravestones or old building.
- Research using secondary sources how fossils are formed.
- Observe soils closely.
- Classify soils in a range of ways based on their appearance.
- Devise a test to investigate the water retention of soils.
- Observe how soil can be separated through sedimentation.
- Research the work of Mary Anning.

Possible evidence

- Can classify rocks in a range of different ways, using appropriate vocabulary
- Can devise tests to explore the properties of rocks and use data to rank the rocks
- Can link rocks changing over time with their properties e.g. soft rocks get worn away more easily
- Can present in different ways their understanding of how fossils are formed e.g. in role play, comic strip, chronological report, stop-go animation etc.
- Can identify plant/animal matter and rocks in samples of soil
- Can devise a test to explore the water retention of soils

Lesson 1

LO: to compare different types of rocks.

Key Assessment Questions

Can children name the 3 different types of rocks?
Can children explain the difference between natural and human made rocks?
Can children use the appearance of rocks to group and compare them?

Lesson 2

LO: to group rocks based on their properties.

LO to make systematic and careful

Key Assessment Questions

Can children think name the different types of rocks?
Can children use properties of rocks to group them?
Can children handle and examine rocks carefully?
Can children use systematic observations to identify properties of rocks?

observations.	
Lesson 3 <u>LO: to explain how fossils are formed</u>	Key Assessment Questions Can children explain the difference between a bone and a fossil? Can children order the steps of how a fossil is formed?
Lesson 4 <u>LO: to learn about Mary Anning and how she contributed to palaeontology</u>	Key Assessment Questions Can children explain what a paleontologist does? Can children understand why Mary Anning's fossil findings were important? Can children describe how paleontology has changed our understanding of prehistoric animals?
Lesson 5 <u>LO: to explain how soil is formed</u> Lesson 5: <u>LO: to investigate water retention of soil</u>	Key Assessment Questions Can children explain that soil is composed of different things? Can children describe the 4 processes of soil formation? Can children identify how to make careful observations? Can children observe how much water has filtered through different types of soil? Can children ensure a fair test?
Lesson 6 <u>LO: to test permeability of rocks</u> TAPS science lesson rocks water test https://pstt.org.uk/application/files/1014/7015/6580/Y3eg_Rocks_water_test_WS_Review.pdf	Key Assessment Questions Can children explain what permeability is? Can children test permeability? Can children record results and draw simple conclusions?

If completing topic over a term, objectives can be covered over more than one lesson ensuring scientific enquiry skills (working scientifically) are being developed