

## Year 3 Science Curriculum

Working scientifically links   Rubric/PCMD opp.   Key Vocabulary

### Rocks

**What's the big picture?** To know that the earth's crust is made of rock and that rock is a naturally occurring material. We can find rocks over every part of the earth's surface - **children to generate own questions for investigation.**

#### **Prior learning:**

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)

National Curriculum Principles	Objectives	Knowledge and key Vocabulary	Reading opportunities	Technology
To compare and group together different kinds of rocks on the basis of their experiences and simple physical properties	To compare and group together different kinds of rocks on the basis of their experiences and simple physical properties	Children to compare, group and <b>classify</b> different types of rocks eg <b>granite, marble, chalk, slate, sandstone, pumice and brick</b> . Children to use words such as <b>smooth, rough, texture, speckled, grainy, crystals, crumble, shiny, dull, light, heavy, geologists, permeable, impermeable, density</b> . <b>Children to complete a comparative test, by testing physical properties of rocks - eg: scratch for hardness, drop water on for permeability, sandpaper for durability, density - do they float or sink? Children to create observational drawings of rocks - chocolate chip cookie activity</b> Children to research real life uses of different rocks, linked to their physical properties - could this link with your project?	Ug by Raymond Briggs  Stone age boy by Satoshi Kitamura  Rhoda's rock hunt by Molly Beth  Pebble In My Pocket by Meredith Hooper	

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<p>To describe in simple terms how fossils are formed when things that have lived are trapped within a rock</p>	<p>To describe in simple terms how fossils are formed when things that have lived are trapped within a rock</p>	<p>Children to describe how fossils are made - whole body fossils - eg animal in tar, insects in amber, animal in ice. Trace fossils - footprint or poo Mould and cast fossil - process  Children to study the work of Mary Anning</p>	<p>Pebble: A Story about Belonging - Susan Milord</p>	
<p><b>Fossilisation</b></p> <p>An animal dies. It gets covered with <b>sediments</b> which eventually become rock.</p> <p>More layers of rock cover it. Only hard parts of the creature remain, e.g. bones, shells and teeth.</p> <p>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.</p> <p>Changes in sea level take place over a long period.</p> <p>As <b>erosion</b> and <b>weathering</b> take place, eventually the <b>fossil</b> becomes exposed.</p>				
<p>To recognise that soils are made from rocks and organic matter</p>	<p>To recognise that soils are made from rocks and organic matter</p>	<p>Explain the Rock cycle to the children - <b>children to create a double page spread</b> Introduce the words <b>igneous, metamorphic, sedimentary</b>. Model different rock types using starburst. Children to know that soil is made from weathered rock, <b>collect and observe soil samples to see what they contain - organic matter.</b></p>		

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		Make a soil cocktail, so that layers of soil separate out. Observe and analyse soil using magnifying glasses.		
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<b>igneous rock</b>	Rock that has been formed from <b>magma</b> or <b>lava</b> .
<b>sedimentary rock</b>	Rock that has been formed by layers of <b>sediment</b> being pressed down hard and sticking together. You can see the layers of <b>sediment</b> in the rock.
<b>metamorphic rock</b>	Rock that started out as <b>igneous</b> or <b>sedimentary rock</b> but changed due to being exposed to extreme heat or pressure.

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### Famous scientists

William Smith - fossil strata

Mary Anning - fossil hunter

Inge Lehmann - Earth's mantle

### 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.

### Enquiry ideas

<u>Comparative tests</u>	<u>Identify and classify</u>	<u>Observations over time</u>	<u>Pattern seeking</u>	<u>Research</u>
Which soil absorbs the most water?	Use the identification key to find out the names of different rocks.	How do rocks and bricks change over time? E.g. Stone statues, gravestones, buildings	Is there a pattern in where we find volcanoes on Earth?	Who was Mary Anning and what did she discover?
Which rock is the hardest?	Sort rocks into groups according to their physical characteristics			