



Subject	Term	Unit
Science - Year 3	Summer 1	Rocks

Intent

At Hurst Hill, we nurture young scientists by fostering curiosity and developing strong scientific knowledge and enquiry skills. Children learn to investigate, observe and evaluate confidently, understanding how science shapes the past, present and future while building firm foundations for lifelong scientific learning.

Prior knowledge	National Curriculum
<ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching 	<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

What?	To build on their knowledge of materials. To compare and contrast different rocks and soils and talk about their properties. To understand how a fossil is formed.
Why?	This unit builds on the children's observational skills. It will help them with other areas of the curriculum such as Geography.
How?	Through observation of different rocks and soils. Through discussion and collection of information.

Vocabulary

Absorb	Soak up or take in.
Bedrock	The solid rock in the ground which supports all the soil above it.
Decaying	Gradually being destroyed by a natural process.

Grain	A tiny, hard piece of a whole, such as sand or salt.
Igneous	Rocks that are formed by volcanic action or intense heat.
Imprint	A mark or outline made by the pressure of one object on another.
Leaf litter	Decaying leaves.
Magma	Molten rock that is formed in very hot conditions inside the earth.
Metamorphic	Rocks that have had their original structure changed by pressure and heat.
Mineral	Something that is formed naturally in rocks and in the earth.
Molten	Something that has been heated to a very high temperature and has become a hot, thick liquid.
Natural	Things that exist in nature and are not made by people.
Nutrients	Substances that help animals and plants to grow.
Palaeontology	The study of fossils as a guide to the history of life on Earth.
Permeable	A substance that some liquids and gases can pass through or soak into.
Porous	Something with many small holes in it that allows some liquids and gases to pass through.
Preserve	To protect from decay .
Pressure	The force produced by pressing hard on something.
Properties	The qualities or features that belong to something and make it recognisable.
Rock	A solid mass made up of minerals . Rock forms much of the Earth's outer layer, including cliffs and mountains.
Sediment	Solid material that settles at the bottom of a liquid, especially earth and pieces of rock that have been carried along and then left somewhere by water, ice or wind.
Soil	The substance on the surface of the Earth in which plants grow.
Weathered	Affected by the weather.

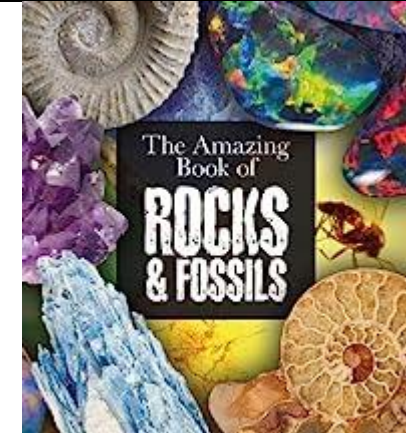
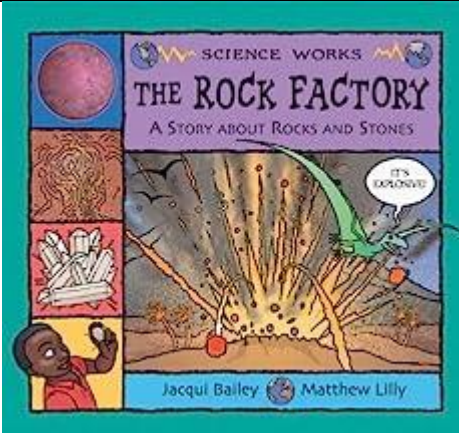
Objective	Learning		
<p>Can I group rocks according to their similarities and differences?</p>	<p style="text-align: center;">Comparative testing - Identifying and classifying</p> <p>There are three types of rocks that are formed naturally: Igneous rocks, such as granite and basalt, form when molten magma cools. The process takes place either under the Earth's surface or as lava flows out of an erupting volcano and mixes with other minerals on the surface. It is strong, hard-wearing and porous. Sedimentary rocks, such as limestone and chalk, form over millions of years. Little pieces of igneous rock are weathered away and sometimes find their way to the bottom of lakes, seas and rivers to create sediment. The sediment builds up in layers to eventually form the rock. It is porous and can be easily worn away. Metamorphic rocks, such as slate and marble, are formed when igneous and sedimentary rocks are put under intense heat and pressure. This makes them incredibly strong.</p> <p>Have different rocks on the tables with large sheets of sugar paper. Ask the children to look carefully at them and to write down the properties. Move around and look at the different types of rocks. You could use the above information to classify them but it is not necessary. They could look at the smoothness, the size of the particles, crystals etc.</p>		
<p><i>What changes occur when two rocks are rubbed together?</i></p>	<p style="text-align: center;">Observing Over Time</p> <p>Rub two small samples of rock together and identify similarities and differences between each pair of samples: igneous/igneous; igneous/sedimentary; sedimentary/sedimentary; sedimentary/metamorphic; metamorphic/metamorphic; metamorphic/igneous. Would you expect man-made materials that are easily confused with rocks (e.g.: bricks/concrete) to react in similar ways? Complete a chart to show which rock marks the other rock.</p> <table border="1" data-bbox="629 1193 1597 1246"> <tr> <td data-bbox="629 1193 1055 1246">Rocks</td> <td data-bbox="1055 1193 1597 1246">Which rock made the mark?</td> </tr> </table> <p>Use this understanding of erosion for when we look at fossils. How do we get to see some of them?</p>	Rocks	Which rock made the mark?
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<p>Can I explain how fossils are formed? 2 lessons</p>	<p style="text-align: center;">Pattern Seeking</p> <p>Fossils are the remains of prehistoric life that tell us about the Earth and about life that existed hundreds of thousands, and even millions, of years ago. They are usually formed when a living thing (plant or animal) dies and the body is covered up or buried by sediment over thousands of years. Some fossils are formed when the tough bones</p>		

	<p>and teeth in animals and the woody parts of plants are preserved, whilst others are made from imprints in sedimentary rock, such as footprints or imprints from shells. Use videos to show how fossils are made. https://www.youtube.com/watch?v=87E8bQrX4Wg The children can have a go at making their own fossil. https://www.youtube.com/watch?v=iD1Hnn9eFfw Use sponge, sand and salt solution to create the fossil. Write instructions on how fossils are made.</p>
Can I explain how soils are formed?	<p style="text-align: center;">Research</p> <p>Soils are made from pieces of rock, minerals, decaying plants and water. When rock is broken down into small grains, soil is formed. There are different layers of soil: above the soil is leaf litter and recently decaying plants, and as the soil becomes deeper, the rock grains become larger until bedrock is reached. Go outside and look at the soil that we have outside. Dig up a spoonful and use the magnifiers to describe the types of materials which can be found in the soil sample.</p>
Can I explain why soils are different?	<p style="text-align: center;">Ideas Over Time</p> <p>The colour of soil is dependent upon the amount of drainage it has and the different types of minerals and decaying plants (also known as organic matter) that can be found within them. Typically, soil that has a lot of organic matter or a lot of water in it is darker than other soils. The amount of minerals can also affect the colour: red soils tend to have a lot of iron within them, whilst one of the reasons the Black Country was given its name because of its black soil, which was caused by the thick layers of coal below the surface. Have different pots of soil and ask the children to predict what they think might be in each one- e.g. organic matter, clay, sand. Record what each one is made of.</p>

Websites

<https://www.stem.org.uk/resources/community/collection/1236//year-3-rocks>
https://www.outstandingscience.co.uk/index.php?action=view_page&page=view_unit&unit=3c
<https://www.bbc.co.uk/bitesize/topics/z9bbkqt/articles/zsgkdmn>

Recommended Reads



Golden Thread

Rocks/ materials and their properties