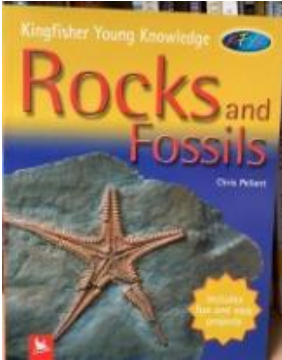
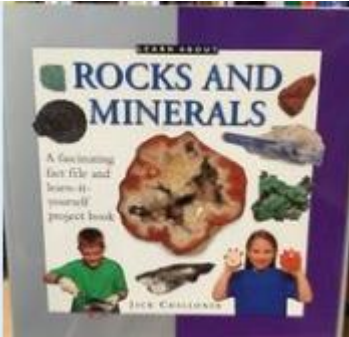


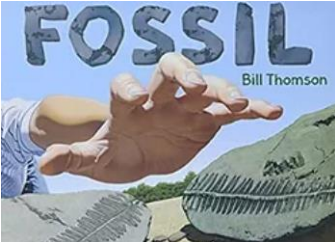


BILSTON CHURCH OF ENGLAND PRIMARY



MEDIUM TERM PLANNING

Subject	Topic/Key Question	Year Group	Term	Time Allocation
Science	Rocks	3	Autumn 1	20 hours
 <p>Library</p>	 <p>Library</p>	 <p>Reading scheme</p>	 <p>Library</p>	 <p>Library service</p>
<p>End of lower Key stage 2 Outcomes</p>	<p>Asking relevant questions and using different types of scientific enquiries to answer them. ☒</p> <p>Setting up simple practical enquiries, comparative and fair tests.</p> <p>Making systematic and careful observations and, where appropriate, taking</p>			

	<p>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.</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Using straightforward scientific evidence to answer questions or to support their findings.</p>
End of Unit Outcomes	<p>I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>I can describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>I can recognise that soils are made from rocks and organic matter.</p>
Vocabulary	<p>Appearance, physical properties, hard, soft, shiny, dull, rough, smooth, absorbent, not absorbent, fossils, sedimentary rock, soils, rock, organic matter, uses, grains, crystal</p>

Lesson Sequence	Time Allocation	Key Question/WALT	Teaching Activities	Resources
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			Computing opportunities	
Lesson 1 What different types of rocks are there?	2 hours	<p>WALT: investigate materials.</p> <p>WILF: I can describe different properties of rocks. I can group rocks according to their properties.</p>	<p>Working Scientifically: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Do you know the names of any rocks? Do you know what they might be used for? Give the children an opportunity to explore some rocks – Granite, Chalk, Sandstone, Limestone and Marble. Share observation – what shape are they? What size are they? What do they feel like? Take a closer look at the rocks using magnifying glasses and microscopes. Look at similarities and differences. Begin to introduce language – hard, soft, rough, smooth and the names of the rocks. Children to compare the rocks.</p>	<p>Collins Connect - Snap Science</p> <p>A selection of rocks</p> <p>Magnifying glasses/microscopes</p> <p>Resource sheets 1-4</p> <p>Properties list</p>
Lesson 2 Which rock is which?	2 hours	<p>WALT: work Scientifically.</p> <p>WILF: I can identify and name some different kinds of rocks. I can sort rocks by carefully observing their properties and using a key.</p>	<p>Working Scientifically: Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Recap – What did we do last lesson? Can you describe the rocks? Make a list on the board.</p> <p>By the end of the discussion, children should have the following sets of information:</p> <ul style="list-style-type: none"> • Pumice: rough, light, soft, full of holes • Granite: smooth, heavy, hard, visible crystals • Marble: smooth, heavy, hard, all white • Chalk: rough, light, soft, all white 	<p>Collins Connect – Snap Science</p> <p>Resource sheets 1 - 3</p>

			<p>Think of yes/no questions about the rocks that would help sort them.</p> <p>Example</p> <pre> graph LR Q1[Is it hard?] -- Yes --> A1[granite, marble] Q1 -- No --> A2[pumice, chalk] A1 --> Q2[Is it white?] A2 --> Q3[Does it have holes?] Q2 -- Yes --> A3[marble] Q2 -- No --> A4[granite] Q3 -- Yes --> A5[pumice] Q3 -- No --> A6[chalk] </pre> <p>Children to create their own questions and use the template on worksheets to help sort the rocks.</p>	
<p>Lesson 3</p> <p>How are rocks used around our school?</p>	<p>2 hours</p>	<p>WALT: investigate materials.</p> <p>WILF: I can identify different types of rocks found around the school. I can describe how they are being used. I can explain why their properties make them useful for this purpose.</p>	<p>Working Scientifically: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Recap - What rocks do you know of already? What are their properties? Which do you think is the hardest? Which the softest? How might they be used?</p> <p>Discuss – How are rocks used around our school? How do we know it is rock? What type of rock is it?</p> <p>Images from slideshow 1 – What types of rocks can you see? What rock is best to use and why?</p> <p>Children to record the different types of rocks used around school on Resource sheet 2.</p> <p>Use Resource sheet 1 for support.</p>	<p>Collins Connect – Snap Science</p> <p>Collins Connect – Snap Science Slideshow 1</p> <p>Collins Connect – Snap Science Interactive 1</p> <p>Resource sheets 1 and 2</p> <p>Rocks previously looked at</p> <p>IPads for research to record findings.</p>

<p>Lesson 4</p> <p>Are all rocks as hard as one another?</p>	<p>2 hours</p>	<p>WALT: investigate materials.</p> <p>WILF: I can test rocks to investigate their hardness. I can order them from hardest to softest. I can suggest when a hard rock might be more useful than a soft one.</p>	<p>Working Scientifically: Using straightforward scientific evidence to answer questions, or to support their findings.</p> <p>What did we find out last lesson? Look at rocks previously handled. TTYP - Are all rocks as hard as each other? Discuss – How can we safely find out how hard a rock is?</p> <p>Explain that we are going to investigate how hard each rock is by doing a ‘scratch test.’</p> <p><u>Scratch test</u></p> <p>Scratch each rock using a pin, your fingernail and a coin and record what happens after each one – Resource sheet 1</p> <p>You need to use your results to identify which rock will be best to make a statue. Order the rocks from the softest to the hardest and then decide which rock you will use for your statue. Will you use one rock or more than one for different parts? Explain why you have chosen that rock/s using the evidence from your experiment.</p>	<p>Collins Connect – Snap Science</p> <p>Resource sheet 1</p> <p>Rocks previously used</p> <p>A drawing pin</p> <p>A coin</p>
<p>Lesson 5</p> <p>Are all rocks waterproof?</p>	<p>2 hours</p>	<p>WALT: investigate materials.</p>	<p>Working Scientifically: Setting up simple practical enquiries, comparative and fair tests.</p>	<p>Collins Connect – Snap Science</p>

		<p>WILF: I can test rocks to see if they absorb water. I can record my results in a table. I can order rocks depending on how quickly they absorb water.</p>	<p>Recap – What did we do last lesson? Which rock from the collection was the hardest?</p> <p>Explain that when rocks are used, especially outdoors then it is important that the rock used is waterproof or able to withstand all the different types of weather.</p> <p>TTYP – How can we test how waterproof each rock is? Feedback ideas.</p> <p>Predict – Which rock do you think will absorb water the quickest and why?</p> <p>Today you are going to test each rock using water. Demonstrate using one rock – use a pipette to drop water on to a rock and see if it absorbs water or not. (1 minute, 2minutes and 5 minutes)</p> <p>Differentiated sheets – Ye/No or timed worksheet</p> <p>Variables – Children need to consider how many drops of water they put on each rock (needs to be the same). Will the same person be timing?</p>	<p>Resource sheets 1 and 2</p> <p>A range of rocks previously used</p> <p>Pipettes</p> <p>Water</p> <p>Timers</p>
<p>Lesson 6 How do rocks change over time?</p>	<p>2 hours</p>	<p>WALT: investigate materials.</p> <p>WILF: I can describe how the appearance of</p>	<p>Working Scientifically: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>What did we find out last lesson?</p>	<p>Collins Connect – Snap Science</p> <p>Collins Connect – Snap Science Slideshow 1</p>

		<p>rocks changes over time. I can use a table to organise my results. I can suggest causes for the changes I have observed.</p>	<p>We need to look at how rocks change over time. Introduce words – weathering and erosion – Does anyone know what these words mean? Explain words.</p> <p>Look at images in slideshow 1 – discuss</p> <ul style="list-style-type: none"> • What do you notice? • What do you think caused this? – Think back to previous lesson <p>Children to visit a site around school where they can investigate lots of different things made from different rocks.</p> <p>Look for what type of rock it is? What has happened to the rocks over time? Has anything started to grow over the rock? Has the colour started to change?</p> <p>Complete resource sheet on findings in investigation.</p>	<p>Resource sheets 1 and 2</p> <p>Video 1 and Video 2</p>
<p>Lesson 7</p> <p>How is soil made?</p>	<p>2 hours</p>	<p>WALT: investigate materials.</p> <p>WILF: I can describe what happens to rocks to change them into soils. I can observe soils closely.</p>	<p>Working Scientifically: Using straightforward scientific evidence to answer questions, or to support their findings.</p> <p>Collins Connect – Slideshow 1 – There is a rock under everything – look at images and discuss</p> <p>What is below us, when we are in the classroom? When we are standing on the school field? When we are up a mountain? When we are in a rowing boat on a lake?</p>	<p>Collins Connect – Snap Science</p> <p>Resource sheets 1, 2 and 3</p>

		<p>I can group soils according to their properties.</p>	<p>Rock Detective Rosie says that there is rock under everything - Is she correct? Discuss.</p> <p>If there are rocks below us, what happens to rocks to change them from rock into soil – because we know that most plants need soil to grow? Show the video of rocks breaking down as a result of wave or river erosion, frost and heat (Video 1).</p> <p>What do you think happens to the rocks? Which types of rocks do you think will break down more easily? What happens to those particles over time? Might there be anything else in soil – or just broken down rocks?</p> <p>Give children a variety of different soils – explain that there is sandy soil, heavy clay soil, chalky soil, loam rich soil (including organic material), peaty soil, local soil.</p> <p>Discuss differences.</p> <p>Look at soils through microscopes and magnifying glasses.</p> <p>Record findings using resources sheets.</p>	<p>Collins Connect Video 1</p> <p>Different types of soil</p> <p>Microscopes and magnifying glasses.</p>
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<p>Lesson 8</p> <p>Why do some soils hold water?</p>	<p>2 hours</p>	<p>WALT: investigate materials.</p> <p>WILF: I can record my results. I can draw a conclusion from my results. I can use my test results to suggest which soil would be best to add to Farmer Bloom's field and why.</p>	<p>Working Scientifically: Using straightforward scientific evidence to answer questions, or to support their findings.</p> <p>Recap last lesson.</p> <p>Farmer Bloom Slide – Lesson 7 – Problem – farm keeps flooding – What can he do?</p> <p>Lots of ideas to solve his problem, including digging ditches, grow plants that like wet soil, add more organic material or sand and gravel to the field.</p> <p>TTYP - What do you think is the best idea?</p> <p>Explain that during this lesson their challenge is to act as Rock Detectives to investigate the relationship between the type of soil and how quickly water flows through it. Remind them of earlier work on the properties of different soils. Help them to plan what to measure and what equipment to use. The challenges are presented on the Challenge slides to be displayed on the board, or printed out and placed in the centre of the table.</p> <p>Challenge 1: Children test three different soil samples and record their results in a table Tell the children that they are going to test three different types of soil, using the method you showed them earlier. Provide children with a table in which to record their results (Resource sheet 1). They need to observe what happens very carefully, comparing the time it takes for the soils to drain and record their results in the table. They use their results to answer questions and</p>	<p>Collins Connect – Snap Science</p> <p>Resource sheets 1 and 2</p> <p>Farmer Bloom slide – Collins Connect lesson 7</p> <p>Soil samples, water, beakers, funnels, jugs and timers/stopwatches.</p>
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			<p>draw conclusions: Do your results show that all the soils let water through at the same rate? Which soil lets water through the quickest? Which soil lets water through the slowest? Why might this be?</p> <p>Challenge 2: Children test three different soil samples and record their results in a table and draw conclusions Tell the children that they are going to test three different types of soil, using the method you showed them earlier. Provide children with a table in which to record their results (Resource sheet 2). They need to observe what happens very carefully, comparing the time it takes for the soils to drain and record their results in a table.</p>	
<p>Lesson 9</p> <p>What is a fossil anyway?</p>	2 hours	<p>WALT: investigate materials.</p> <p>WILF: I can describe what fossils are. I can identify different types of fossils. I can gather evidence to help answer a question.</p>	<p>Working Scientifically: Identifying differences, similarities or changes related to simple scientific ideas and processes.]</p> <p>Watch Video 1 – discusses the different types of fossils.</p> <p>What is a fossil? What different fossils did we hear about?</p> <p>ENQUIRE: Tell the children that they are going to act as Rock Detectives, exploring the different types of fossils in the fossil collector’s collection in order to find out as much as they can about them. They will be asked to recommend which types of fossils our collector needs to find more of, so that he can make his collection even better. The challenges are presented on the Challenge slides to be displayed on</p>	<p>Collins Connect – Snap Science</p> <p>Collins Connect Video 1</p> <p>Resource sheets 1, 2 and 3</p> <p>Resource sheet 4 – game</p>

			<p>the board, or printed out and placed in the centre of the table. Challenge 1: Children observe and identify a number of fossils.</p> <p>Ask the children to look at and explore the fossil collection. They use the Fossil identifier (Resource sheet 1) to help them identify which types of fossils the collection includes. Give them Resource sheet 2, which contains a table for them to complete to show how many of each type of fossil they have identified.</p> <p>Which fossil type(s) does the fossil collector have most of? Have least of?</p> <p>Challenge 2: Children observe and identify a number of fossils, exploring their origins and deciding on how to improve the collection Ask the children to look at and explore the fossil collection. They use the fossil identifier (Resource sheet 1) to help them identify which types of fossils the collection includes. Give them Resource sheet 3, which contains a table for them to complete to show how many of each type of fossil they have identified.</p> <p>Which fossil type(s) does the fossil collector have most of? Have least of? Which types of fossil do you think he needs more of to improve his collection?</p> <p>Challenge 3: Children research a fossil, presenting their results in a method of their choice Tell the children to choose a fossil from the fossil collector’s collection. They need to use their research skills to find out as much as they can about this type of fossil</p>	<p>Replica fossils</p> <p>Magnifying glasses/microscopes</p> <p>IPads/laptops for research</p> <p>Twinkl – fossils resource pack and slides</p>
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<p>Lesson 10</p> <p>How are fossils formed?</p>	<p>2 hours</p>	<p>WALT: investigate materials.</p> <p>WILF: I can explain how fossils are formed. I can sequence the stages of the process. I can use a storyboard to communicate my ideas.</p>	<p>Working Scientifically: Identify differences, similarities, or changes related to simple scientific ideas and processes.</p> <p>Recap last lesson.</p> <p>Hide fossils in a feely ag and ask children to reach in and describe what they can feel.</p> <p>TTYP – What clues can help you identify the fossil?</p> <p>Use the fossil identifier from Collins Connect Snap Science lesson 9 – Resource 1 to help check their findings.</p> <p>Watch animation of fossils being formed.</p> <p>Children need to illustrate how a fossil is formed using the storyboard worksheet – Resource 2</p> <p>Children to identify one fossil and draw the stages of its life.</p> <p>Think about - Would the original animal or plant have lived on land or in the sea? What would have happened to it when it died? How might the fossil have been eventually discovered?</p>	<p>Collins Connect – Snap Science</p> <p>Resource sheets 1 and 2</p> <p>Collins Connect – Animation of how fossils are formed.</p> <p>Twinkl – fossils resource pack and slides</p> <p>Replica Fossils</p>
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