


Subject: Science	Rocks 	
Class: Elephants	Teacher: Sukhi Lall	Term: Autumn 1
Key Vocabulary: Rocks, soils, organic matter, buildings, gravestones, grains, crystals, appearance Physical, properties, hard/soft, shiny/dull, rough/smooth absorbent/not absorbent fossils igneous, sedimentary, metamorphic, rocks, group, properties, permeable, impermeable, hard, soft, durable, buoyancy, split. Fossil, sedimentary, fossilisation, animals, bones, chemical fossils, change, body fossils, trace fossils, layers, pressure, coprolite, trackways, footprints Mary Anning, fossils, ichthyosaur, trace fossils, coprolite, dinosaurs, Jurassic, Lyme Regis, seaside, beach, poverty, scientists, William Buckland. Soil, formation, formed, rock, organic matter, animals, top soil, sub soil, bedrock, additions, losses, translocations, transformations.	Alternative Learning Environments School environment Local area/environment Forest School	Resources: <ul style="list-style-type: none"> • A selection of igneous, sedimentary and metamorphic rocks • You may wish to source video clips to show the formation of igneous, sedimentary and metamorphic rocks. A selection of igneous, sedimentary and metamorphic rocks • A selection of books on rocks • Computers/Laptops/Tablets • Sandpaper • Pipette • A large container or plastic box Scissors • Glue sticks • If available, example of real fossils or models of fossils Clear plastic bottles (round bottomed two litre bottles are best) • Thin pieces of fabric • Cardboard pieces • Shredded paper • Fruit and vegetable scraps (cut into small pieces) • Compost • Small stones • 5 to 6 tiger worms per group • Scissors • Plastic gloves • Plant saucers • Elastic bands Samples of the different types of soil (pre-measured to ensure the children use the same amount of soil) • Beakers • Funnels • Coffee filter paper • Measuring cylinders • Water • Visualiser equipment or a webcam (if available)

<p>Unit Aim: children will discover the different types of rocks and how they are formed. Children will compare and group rocks based on appearance and simple properties. They will learn how fossils are formed and learn about the contribution of Mary Anning to the field of palaeontology. Children will understand how soil is formed and then investigate the permeability of different types of soil.</p>
<p>Prior Learning: It will be helpful if children are learning this unit alongside a geography unit which includes volcano formation. Children will have learnt the three different types of rocks in lesson 1.</p>
<p>Future Learning: Have knowledge of variety of rocks and their properties, group rocks into chosen criteria</p>
<p>Unit Expectations: All: Children will be able to name the three different types of rocks. • They will handle and examine rocks to identify their properties, with support. • They will be able to state the four different types of matter that soil is composed of. • Children will learn to make careful observations. • They will be able to take part in and contribute towards an oral presentation of their observations Some: ...most children will be able to: • Children will be able to give examples of natural and human-made rocks. • They will be able to group rocks by their properties and identify simple similarities and differences. • Children will be able to explain the difference between a bone and a fossil. • They will be able to explain, using simple scientific language, how soil is formed. • They will make and record observations accurately A Few: Children will make systematic observations. • They will be able to explain the main processes of fossilisation. • They will be able to identify the importance of Mary Anning's work to the field of palaeontology. • Children will use simple scientific language accurately in oral and written work.</p>
<p>Links with other subjects: ICT: History: sequence dates for historical research</p>

Pupil Asset Milestones to be achieved:
Subject: Number Place Value
K7
Scientific Enquiry
Asks one or two questions e.g. most questions begin with Why?
Carries out a more complex finding task e.g. Find an object that makes a loud noise.

Can find some information from a book with help?
Practical Investigation
Make suggestion about what to do.
Shows an awareness of treating things in the same way.
Considers whether it is a fair test.
Makes a general statement.
Observes one feature.
Says if something changed when asked about it.
Makes sets using a very general category.
Repeats action, to see if result is repeated.
Communicating
Gathers things together or cuts up similar things from a catalogue.
Uses the objects to record with.
Describes simply what they did.
Interpreting Evidence
Considers if their general statement was correct.
Compares results.
Explains differences.
K8
Scientific Enquiry
Discusses what they are going to do including how and why.
Asks an increased range of questions e.g. Not all questions begin with Why?
Finds out some information from other children or books.
Begins to have awareness of the fact that scientific methods change over time.
Practical Investigation
Make suggestion about what to change.
Recognises hazards and consider safety.
Starts to show an awareness of amounts to use.

Gives reasons why a test was fair.
Gives reasons why a test was not fair.
Refers to something they have already encountered.
Observes more than one feature.
Observes a change.
Sorts a general set according to size.
Communicating
Talks about what they observe.
Displays their collections.
Draws an object and sticks it onto a chart drawn by the teacher.
Interpreting Evidence
Uses own experience when considering evidence.
Describes simply what happened.
Considers, with help, if their reference to something already encountered was correct.
Animals including humans
Knows that it is good to eat a range of foods that help growth, repair and give them energy
W / K9
Scientific Enquiry
Respond to teachers' questions.
Practical Investigation
Begin to suggest how to collect evidence to answer questions.
Use simple equipment provided, with help and in a safe manner.
Makes a guess.
Communicating
Take turns in discussion.
Contribute to thought showers
Show an understanding of comparative language e.g. Same, better, more.
Draw/talk about work in everyday terms possibly with support.

Contribute to class or group recording.
Interpreting Evidence
Describe things in everyday terms e.g.The ice is a bit see-through and it leaks in my hand.
Say if their guess was correct.
Make comments like it was easy. I like my meal worm I do.
Stage 1
Scientific Enquiry
Asks questions raised by their own exploration of the world around them.
Draws on their everyday experiences to help answer questions.
Begins to use simple features to compare objects, materials and living things.
Asks people questions to find answers.
Practical Investigation
Responds to prompts by making some suggestions about how to find an answer or make observations.
Uses their senses and simple equipment to make observations.
Communicating
Begins to record data in simple templates provided for them.
Responds to prompts to talk about what they have found out.
Interpreting Evidence
Says what has changed when observing objects, living things or events.
Scientific Enquiry
Asks simple questions recognising that they can be answered in different ways.
Uses simple secondary sources to find answers.
Practical Investigation
Observes changes over time.
Uses simple measurements and equipment to gather data and carry out simple tests.
Communicating
With help, records and communicates findings in a range of ways and begins to use simple scientific language.
Talks about what they have found out and how they found it out.

Uses simple features to compare objects, materials and living things and with help, decides how to sort and group them.
Interpreting Evidence
Says whether what happened was what they expected.
With guidance, begins to notice patterns and relationships.

Week	Session 1	Session 2
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<p>1 06/09/21</p>	<p>Lesson Objective I can name the three different types of rocks. I can explain the difference between natural and human-made rocks. I can use the appearance of rocks to group and compare them.</p> <p>Activities What are rocks? Are rocks alive? How do you know? Why are there rocks everywhere? How do rocks form? pot the Rocks: Human-made Rocks: Introduce children to human-made rocks like concrete and bricks. Natural or Human-made? Place children in small ability groups.</p> <p>ZB SW TH JK KG RO AD</p> <p>Groups will have a small selection of rocks with name labels and will group these before deciding whether the rock is natural or humanmade. Next group rocks further by the type of natural rock they are Children complete the Rocks Word search to reinforce key vocabulary.</p> <p>Drawit: Children to make close drawings of the rocks and label them</p>	<p>Lesson Objective I can group rocks according to chosen criteria</p> <p>Activities Natural or Human-made: (If using a set of rocks then go through these with the children. If using the Natural or Human-made Rocks Picture Sheet then use the slide on the Lesson Presentation.) Children mark and correct their own answers on the Natural or Human-made Rocks Activity Sheet</p> <p>Fact or Fiction? Check children’s knowledge of the different types of rocks by reading out a statement. Children discuss with their talk partner and then vote for if it is fact or fiction. Check children have understood the three different types of rocks and the difference between human-made and natural rocks.</p> <p>ZB SW TH JK KG RO AD</p>
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<p>2 13/09/21</p>	<p>Lesson Objective can name the different types of rocks. I can identify features of different rocks. I can group rocks by specific criteria. I can handle and examine rocks carefully. I can use systematic observations to identify the properties of rocks</p> <p>Activities Types of Rocks: What are the three types of rocks? Why causes them to be different? Children need to demonstrate they understand the difference occurs in the formation of the rocks. Show the types of rocks on the Lesson Presentation and use this to address any misconceptions or errors</p> <p>Describing Rocks: In talk partners, children discuss the adjectives they would use to describe rocks. Children feedback to class and ideas to be written on the IWB. Select one of the properties such as ‘hard’ – Are all rocks hard? What about clay? Discuss how different rocks have different properties</p> <p>ZB SW TH JK KG RO AD</p>	<p>Lesson Objective I can group rocks based on their properties? I can make systematic and careful observations</p> <p>Activities ZB SW TH JK KG RO AD Children group rocks based on all four properties Children group rocks based on two properties of their choice and then answer questions.</p>
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<p>3 20/09/21</p>	<p>Lesson Objective</p> <p>I can explain the difference between a bone and a fossil. I can order the steps of how a fossil is formed.</p> <p>Activities</p> <p>Are Dinosaurs Real? Bones or Fossils? / Body Fossils / Trace Fossils: Read the information on the IWB explaining the difference between bones and fossils. Fossilisation Process: Go through the fossilisation process step by step on the IWB. What do you think we only find fossils in sedimentary rock? Why not igneous or metamorphic rock</p> <p>ZB SW TH JK KG RO AD</p> <p>Children order pictures and write a corresponding sentence. Children order the pictures in sequence and match the correct sentence with each picture describing the fossilisation process.</p>	<p>Lesson Objective</p> <p>I can explain how fossils are formed.</p> <p>Activities</p> <p>Children create a poster using the differentiated Fossil Poster Activity Sheet explaining what happens to fossils in different types of rocks and draw a picture to illustrate.</p> <p>ZB SW TH JK KG RO AD</p> <p>Modelit: Children make a model using clay, mock rock or any other suitable material. The model should include both the rock and the fossils</p>
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<p>4 27/09/21</p>	<p>Lesson Objective</p> <p>I can explain Mary Anning’s contribution to palaeontology. I can explain what a palaeontologist does. I can understand why Mary Anning’s fossil findings were important. I can describe how palaeontology has changed our understanding of prehistoric animals.</p> <p>Activities</p> <p>Palaeontology and Palaeontologists: Children learn how to pronounce the words palaeontology and palaeontologist. What could a palaeontologist be? What would a palaeontologist do? Use your previous learning in this unit to help you work it out. Children discuss with talk partner and feedback.</p> <p>History of Ideas About Fossils: Read information relating to ideas about fossils in ancient times. Georges Cuvier – The Breakthrough: Explain how Cuvier proved extinction as fact and the link between Cuvier and Mary Anning</p> <p>ZB SW TH JK KG RO AD</p> <p>Types of Fossils: Children recap and feedback on the main types of fossils. Mary Anning: Show children the video of Mary Anning’s life and her fossil find. Children focus on the types of fossils she found e.g. body fossils. Children discuss the questions on the Lesson Presentation as a whole class</p> <p>.</p>	<p>Lesson Objective</p> <p>Activities</p> <p>Palaeontology: Children read and answer questions about modern day palaeontology using the differentiated Palaeontology Reading Comprehension</p> <p>ZB SW TH JK KG RO AD</p> <p>Children write a diary entry of a day in the life of Mary Anning using the differentiated Mary Anning Diary Entry Activity Sheets and the Mary Anning Palaeontologist Word Mat for support, if required. Modelit: Children create a model of one of the fossils that Mary Anning found. Filmit: Children create a film recreating Mary Anning’s famous ichthyosaur fossil find. Visitorit Arrange a visit from a palaeontologist to explain current ideas in the field of palaeontology</p>
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<p>5 04/10/21</p>	<p>Lesson Objective I can explain how soil is formed. I can explain that soil is composed of different things. I can describe the 4 processes of soil formation.</p> <p>Activities Soil: Show the questions What is soil? What is soil made from? Take children to the playing fields/school allotment or any area where there is visible soil. Children observe and feedback about what could be in soil. Point out what's around e.g. trees as well as discussing what might be living in the soil. What Is Soil Made Of? Address errors and misconceptions arising from the lesson introduction by highlighting the relevant information on the Lesson Presentation. Layers of Soil: Show and explain the diagram of the different layers of soil present in the ground. Soil Formation: Explain the soil formation process. Compost: Read information on the Lesson Presentation explaining what compost is and why people choose to compost.</p> <p>ZB SW TH JK KG RO AD</p>	<p>Lesson Objective</p> <p>Activities Creating Compost: Read through the instructions for creating a mini compost bin. Check children's understanding of key concepts – for example – why are using a base of small stones? Check children understand the health and safety guidelines both for them and the worms. Each group should have a copy of the Creating a Mini Compost Bin Instruction Sheet to refer to while creating their mini compost bin.</p> <p>ZB SW TH JK KG RO AD</p> <p>Children take a sample of soil (from a back garden or a pot plant for example) and research what type of soil it is and which rock it is formed from. Modelit: Children create a model of the different layers of soil. Filmit: Children create a short information film using appropriate diagrams and pictures to explain how soil is formed.</p>
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<p>6 11/10/21</p>	<p>Lesson Objective</p> <p>I can identify how to make careful observations. I can observe how much water has filtered through different types of soil. I can use the same equipment and length of time for each observation. I can record my observations accurately in a table. I can contribute to creating a group presentation. I can use simple scientific language accurately in my presentation.</p> <p>Activities</p> <p>Rocks Quiz: Children recap their knowledge and understanding of different types of rocks and their properties. Types of Soils: What part do rocks play in forming soil? How many types of soil do you think there are? Matching Rocks and Soils: In pairs, children to match soils with the rock(s) that they are formed from using the Rocks and Soils Matching Cards. Reveal answers on the Lesson Presentation.</p> <p>Comparing Soils: Watch the following video as an introduction to comparing different types of soil. Soil Permeability: Read the information on the importance of soil permeability. Making Careful Observations: Go through a checklist of how to make careful observations. Testing Permeability: Show children the different types of soil they will be testing before children make predictions regarding the permeability of different types of soil. Using a visualiser or webcam (if available), model how to test permeability and how to make careful observations for one soil sample. Each mixed ability group collects the necessary equipment and soil samples for their practical investigation. Children to record their observations on the Activity Sheet Soil Permeability. Are children observing and carefully? Can they record their findings in a table</p> <p>ZB AD TH JK KG SW RO</p>	<p>Lesson Objective</p> <p>I can identify how to make careful observations. I can observe how much water has filtered through different types of soil. I can use the same equipment and length of time for each observation. I can record my observations accurately in a table. I can contribute to creating a group presentation. I can use simple scientific language accurately in my presentation.</p> <p>Activities</p> <p>ZB SW TH JK KG RO AD</p> <p>Research the uses of different types of soil using the Soil Research Activity Sheet. Investigateit Conduct a simple investigation by planting a seed in different types of soil to see if and how the seeds grow. Record the information on the Investigating Soils Activity Sheet</p>
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7 18/10/2	Lesson Objective Unit Assessment
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