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| <b>Theme</b>               | <b>Animals, including humans</b>  |   | <b>Rocks</b>  | <b>Light</b>  | <b>Plants</b>  | <b>Forces</b>  |
| <b>Content</b>             | <p>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat .</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>   |   | <p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>   | <p>Recognise that they need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>Find patterns in the way that the size of shadows change.</p>                            | <p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.</p> <p>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> | <p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.</p> <p>Describe magnets as having 2 poles.</p> <p>Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.</p> |
| <b>Prior Knowledge</b>     | <ul style="list-style-type: none"> <li>• Notice that animals, including humans, have offspring which grow into adults</li> <li>• Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>• Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul>   |   |   |   | <ul style="list-style-type: none"> <li>• Observe and describe how seeds and bulbs grow into mature plants</li> <li>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul>  |  |
| <b>Sequence of Lessons</b> |  <p><b>Lesson 1: (Skeletons Step 1)</b><br/><b>LQ: Can I identify and name bones in the body?</b><br/>S: To ask relevant questions and use different types of scientific enquiries to answer them.<br/>K: The human skeleton is made up of lots of different bones. An adult human typically has 206 bones that make up the skeleton. The skull, spine (backbone), ribcage, pelvis and femur are</p> |  <p><b>Lesson 7: (Movement Step 2)</b><br/><b>LQ: Can I explain the function of muscles?</b><br/>S: Communicate their findings in ways that are appropriate for different audiences (non-statutory).<br/>K: Muscles are attached to bones. Muscles can only pull on bones and cannot push. Muscles work in pairs by contracting and relaxing.</p> |  <p><b>Lesson 1: (Rocks Step 1-2)</b><br/><b>LQ: Can I identify different rock types?</b><br/>S: Making systematic and careful observations<br/>K: Rocks are natural materials. Granite, pumice, sandstone, chalk, marble and gneiss are all types of rock. Rocks have different properties. Rocks can be grouped in different ways. Some rocks have grains.</p> |  <p><b>Lesson 1: (Light Step 1)</b><br/><b>LQ: Can I recognise that light is needed to see?</b><br/>S: Identifying differences, similarities or changes related to simple scientific ideas and processes.<br/>K: Humans and other animals need light to see. Natural light sources are objects in nature that give out light, such as the Sun. Artificial light sources are made</p> |  <p><b>Lesson 1: (Plants Step 1-2)</b><br/><b>LQ: Can I identify and describe the functions of different parts of flowering plants</b><br/>S: Using straightforward scientific evidence to answer questions or to support their findings.<br/>K: Plants are made up of different parts, which have different functions.</p>   |  <p><b>Lesson 1: (Forces Step 1)</b><br/><b>LQ: Can I explain what a force is?</b><br/>S: Identifying differences, similarities or changes related to simple scientific ideas and processes.<br/>K: Forces are pushes or pulls. A contact force is a push or a pull that affects objects which are touching.</p>  |

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|  | <p>bones within the skeleton.</p>   | <p>Bones, muscles and joints work together to allow movement.</p>   | <p>Some rocks have crystals.<br/>Some rocks have layers.<br/>Some rocks are light and some are heavy.</p>  | <p>by humans.</p>  | <p>The roots absorb water from the soil and hold the plant in place.<br/>The stem carries water to different parts of the plant.<br/>The leaves absorb sunlight to make food for the plant.<br/>The flowers help the plant to reproduce and create new life.<br/>A dissection is the method of separating something into its parts.<br/>The roots absorb water from the soil and hold the plant in place.<br/>The stem carries water to different parts of the plant.<br/>The leaves absorb sunlight to make food for the plant.<br/>The flowers help the plant to reproduce and create new life.</p> |  |
|  | <p> <b>Lesson 2: (Skeletons Step 2)</b><br/><b>LQ: Can I explain the function of the skeleton?</b><br/>S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.<br/>K: Bones have specific functions.<br/>The skull protects the brain.<br/>The femur helps humans to stand and move.<br/>The pelvis helps to support the spine.<br/>The spine helps humans to twist and stay upright.<br/>The ribcage protects the heart and lungs.</p> | <p> <b>Lesson 8:</b><br/><b>LQ: Can I name the 5 food groups? (Nutrition Step 1)</b><br/>S: Using straightforward scientific evidence to answer questions or to support their findings.<br/>K: Fruit and vegetables provide the body with essential vitamins.<br/>Carbohydrates provide the body with energy.<br/>Proteins help with muscle growth and repair.<br/>Dairy products contain calcium, which is good for teeth and bones.<br/>Fats can be grouped into healthy and unhealthy fats</p> | <p> <b>Lesson 2: (Rocks Step 3)</b><br/><b>LQ: Can I compare and group together different kinds of rocks?</b><br/>S: Making systematic and careful observations<br/>K: Some rocks are hard.<br/>Some rocks react with acid.<br/>Some rocks are brittle.<br/>Some rocks float and some sink</p>  | <p> <b>Lesson 2: (Light Step 2)</b><br/><b>LQ: Can I recognise that light can be dangerous?</b><br/>S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.<br/>K: The Sun is a light source.<br/>Without the Sun, living things would not be able to live and grow on planet Earth.<br/>Light from the Sun can be dangerous.<br/>There are ways to protect your eyes from the Sun.</p> | <p> <b>Lesson 2: (Plants Step 3-4)</b><br/><b>LQ: Can I investigate the requirements of plants for life and growth?</b><br/>S: Setting up simple practical enquiries, comparative and fair tests.<br/>K: Plants need light, water, air, space and nutrients from soil to grow.<br/>Different conditions affect growth.<br/>Only one variable should change in a fair test.<br/>All other variables must stay the same.<br/>Observations and measurements must be recorded over time.</p>                           | <p> <b>Lesson 2: (Forces Step 2)</b><br/><b>LQ: Can I explain how friction works?</b><br/>S: Using straightforward scientific evidence to answer questions or to support their findings.<br/>K: Friction is a contact force that is caused by one object being pushed across the surface of another.<br/>Friction can stop or slow down a moving object.<br/>Smooth surfaces, such as ice, wood, and plastic, have lower levels of friction.<br/>Rough surfaces, such as concrete, sand and carpet, have higher levels of friction.</p> |
|  | <p> <b>Lesson 3: (Skeletons Step 3)</b><br/><b>LQ: Can I identify and name bones in a range of animals</b><br/>S: Talk about criteria for grouping, sorting and classifying (non-statutory)<br/>K: Mammals, birds, fish, amphibians and reptiles have a skeleton.<br/>Animal skeletons are made up of lots of different bones.</p>   | <p> <b>Lesson 9: (Nutrition Step 2)</b><br/><b>LQ: Can I understand the 5 food groups?</b><br/>S: – Using straightforward scientific evidence to answer questions or to support their findings.<br/>K: Humans need the correct types and amount of food.<br/>Humans get their nutrition from what they eat.<br/>Food can be sorted into five food groups – fruit and</p>  | <p> <b>Lesson 3: (Rocks Step 4)</b><br/><b>LQ: Can I compare and group together different kinds of rocks?</b><br/>S: – Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.<br/>K: Rocks are used as building materials.<br/>Rocks have different textures and appearances.<br/>Rocks change over time.</p> | <p> <b>Lesson 3: (Light Step 3)</b><br/><b>LQ: Can I explain how light travels?</b><br/>S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.<br/>K: Humans need light to see.<br/>Darkness is the absence of light.<br/>Light travels from a light source to an object.<br/>The light is then reflected from the object into our eyes.</p>   | <p> <b>Lesson 3: (Plants Step 5)</b><br/><b>LQ: Can I investigate water transportation within plants?</b><br/>S: Setting up simple practical enquiries, comparative and fair tests.<br/>K: The roots absorb water from the soil.<br/>The stem carries water to different parts of a plant.</p>   | <p> <b>Lesson 3: (Forces Step 3-4)</b><br/><b>LQ: Can I investigate the effect of friction?</b><br/>S: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.<br/>K: Rough surfaces usually create <b>more friction</b><br/>Smooth surfaces usually create <b>less friction</b></p>   |

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|   | vegetables, carbohydrates, proteins, dairy products and alternatives and fats and sugars.   |  | Reflection is the return of light from a material or surface.  | There are small tubes inside the stem that transport the water to different parts of a plant, such as to the leaves and flowers.  | Friction can be helpful or unhelpful<br>Only <b>one variable</b> should change in a fair test.<br>All other variables must stay the same.   |
| <p><b>Lesson 4:</b><br/><b>LQ: Can I identify animals with and without a spine?</b> (<i>Skeletons Step 4</i>)<br/>S: Talk about criteria for grouping, sorting and classifying (non-statutory)<br/>K: Some animals have a spine. Some animals do not have a spine.<br/>Some animals have an exoskeleton.<br/>An exoskeleton provides support and protection.</p>  | <p><b>Lesson 10: (Nutrition Step 3)</b><br/><b>LQ: Can I explain the importance of a balanced diet?</b><br/>S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.<br/>K: Humans need to eat a healthy, balanced diet to maintain good health. Humans should eat a wide variety of foods and consume the right amount to maintain a healthy body weight. The Eatwell Guide shows how much of each food group we should eat to achieve a healthy and balanced diet.</p> | <p><b>Lesson 4: (Fossils Step 1-2)</b><br/><b>LQ: Can I describe how fossils are formed?</b> (<i>Fossils step 1-2</i>)<br/>S: Asking relevant questions and using different types of scientific enquiries to answer them.<br/>K: A fossil is the remains or trace of a living thing that lived a long time ago. Both animals and plants can become fossils. Older fossils are found deeper underground. Fossils are usually formed from the shells or bones of living things. Animal footprints and tracks can also form fossils. Fossilisation is the process that explains how a fossil is formed. Fossilisation is a rare process that only occurs under certain conditions. When an animal dies, the soft parts of its body break down, leaving behind the hard parts such as the skeleton. The process of fossilisation takes thousands of years.</p> | <p><b>Lesson 4: (Light Step 4-5)</b><br/><b>LQ: Can I recognise how shadows are formed?</b><br/>S: – Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.<br/>K: Humans need light to see objects. Light travels from a light source to an object. The light is then reflected into our eyes. Shadows are formed when the light from a light source is blocked by an object. Opaque materials do not let light rays pass through. Translucent materials allow some light to pass through but do not form clear, defined shadows. Transparent materials allow light to pass through. Shadows are formed when the light from a light source is blocked by an object.</p> | <p><b>Lesson 4: (Plants Step 6-7)</b><br/><b>LQ: Can I explain the part that flowers play in the life cycle of flowering plants?</b><br/>S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.<br/>K: Germination is the process of a seed breaking its coating and sending out its first leaves and roots. Seeds need water to germinate. As a seed absorbs water, the seed coating swells and breaks. The correct temperature is important for the growth of seedlings. The stamen is the male parts of a plant. The stamen produces pollen. The pistil is the female parts of a plant. The pistil receives the pollen in the fertilisation process.</p> | <p><b>Lesson 4: (Magnets Step 1)</b><br/><b>LQ: Can I explain how magnets interact using their poles?</b><br/>S: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.<br/>K: A magnetic force is a non-contact force. Magnets have two poles – a north and south pole. Magnets can have different shapes, such as a bar magnet or a horseshoe magnet.</p> |
| <p><b>Lesson 5:</b><br/><b>LQ: Can I sort and group animals based on their skeletons?</b> (<i>Skeletons Step 5</i>)<br/>S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.<br/>K: Animals have different skeletons. All mammals, birds, fish, reptiles and amphibians have a spine. Some animals do not have a</p> | <p><b>Lesson 11: (Nutrition Step 4)</b><br/><b>LQ: Can I compare different diets?</b><br/>S: Identifying differences, similarities or changes related to simple scientific ideas and processes.<br/>K: All humans need a balanced diet that includes food from all five food groups. There are a variety of human diets including vegan, vegetarian, pescatarian and omnivorous diets. People who eat a vegan diet get</p>  | <p><b>Lesson 5: (Soil Step 1-2)</b><br/><b>LQ: Can I recognise that soils are made from rocks and organic matter?</b><br/>S: Using straightforward scientific evidence to answer questions or to support their findings.<br/>K: Organic matter is the remains of dead plants and animals. Soils are made from rocks, organic matter and water. There are different types of soil including sandy, chalk, clay and</p>  | <p><b>Lesson 5: (Light Step 6)</b><br/><b>LQ: Can I plan an investigation to find patterns in the way that the size of shadows change?</b><br/>S: – Setting up simple practical enquiries, comparative and fair tests.<br/>K: <b>What to change:</b> the distance of the light source from the object.<br/><b>What to measure:</b> the size (length/height) of the shadow.<br/><b>What to keep the same (control variables):</b></p>   | <p><b>Lesson 5: (Plants Step 8)</b><br/><b>LQ: Can I explain the part that flowers play in the life cycle of flowering plants?</b><br/>S: Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences (non-statutory).<br/>K: Pollination is the transfer of pollen from the male part of a flowering plant to the female</p>   | <p><b>Lesson 5: (Magnets Step 2-3)</b><br/><b>L. Can I identify magnetic and non-magnetic materials?</b><br/>S: Setting up simple practical enquiries, comparative and fair tests.<br/>K: A magnetic force is a non-contact force. Magnets have two poles – a north and south pole. Magnets can have different shapes, such as a bar magnet or a horseshoe magnet. Magnets are objects that can</p>             |

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|                         | <p>spine.<br/>Skeletons provide support and protection and allow movement.</p>   | <p>protein from sources that are not animal products.</p>   | <p>peat soil.<br/>These soils have different properties<br/>Many living things need soil to survive.<br/>Soils can act as a habitat for many small animals.<br/>Soils provide nutrients for plants.<br/>Soils can also prevent flooding, as they absorb water.</p>   | <p>the object used,<br/>the surface on which the shadow is cast,<br/>the angle of the light,<br/>the light source used.</p>   | <p>part of a plant, so that the plant can reproduce.<br/>The pollen and the egg join to make a seed.<br/>The aim of pollination is to create offspring.<br/>The stamen is the male parts of a flowering plant.<br/>The pistil is the female parts of a flowering plant.</p>   | <p>attract some other metals.<br/>Some metals are magnetic.<br/>Some metals are not magnetic.<br/>Magnetic metals include iron and steel.<br/>Non-magnetic metals include aluminium.</p>  |
|                         | <p> <b>Lesson 6:</b><br/><b>LQ: Can I explain the function of joints?</b><br/><i>(Movement Step 1)</i><br/>S: Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations (non-statutory)<br/>K: A joint is where two or more bones connect.<br/>There are different joints in the human body.<br/>The knees and elbows are hinge joints.<br/>• The shoulders and hips are ball-and-socket joints.</p> | <p> <b>Lesson 12: (Nutrition Step 5)</b><br/><b>LQ: Can I compare animal diets?</b><br/>S: Using straightforward scientific evidence to answer questions or to support their findings.<br/>K: Animals need the right type and amount of nutrition. They cannot make their own food. Instead, they get their nutrition from what they eat.<br/>Carnivores are animals that eat other animals.<br/>Herbivores are animals that eat plants.<br/>• Omnivores are animals that eat other animals and plants.</p> | <p> <b>Lesson 6: (Soil Step 3-5)</b><br/><b>LQ: Can I recognise that soils are made from rocks and organic matter?</b><br/>S: Making systematic and careful observations and, where appropriate<br/>K: Types of materials in soil<br/>Rocks: solid particles broken down over time through weathering.<br/>Organic matter: also called humus, it comes from dead plant and animal material.<br/>Soil types vary based on their content.<br/>Rocks break down into smaller particles.<br/>Organic matter is added through decomposition.<br/>Soil forms over a long period of time through natural processes.</p> | <p> <b>Lesson 6: (Light Step 7-8)</b><br/><b>LQ: Can I carry out an investigation to find patterns in the way that shadows change?</b><br/>S: Using results to draw simple conclusions<br/>K: The size and shape of a shadow depend on the position of the light source.<br/>As the light source moves closer to the object, the shadow gets larger.<br/>As the light source moves farther away, the shadow gets smaller.</p> | <p> <b>Lesson 6: (Plants Step 9-10)</b><br/><b>LQ: Can I explain the plant life cycle?</b><br/>S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.<br/>K: Seed dispersal is the movement of seeds away from the parent plant for the life-cycle process to begin again.<br/>The most common methods of seed dispersal are by wind, water, animals and explosion.<br/>The stages in a plant's life are called its life cycle.<br/>Some plants start as a seed, which germinates under the right conditions.<br/>A germinated seed grows roots and shoots, which then grow leaves.<br/>As plants grow, they produce flowers and can reproduce through pollination.<br/>Once a seed is produced it can be dispersed to start the life cycle again.</p> | <p> <b>Lesson 6: (Magnets Step 4)</b><br/><b>LQ: Can I describe how magnets attract and repel?</b><br/>S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.<br/>K: • Magnets are objects that can attract some other metals.<br/>• All magnets have two poles – a north pole and a south pole.<br/>• The opposite poles on two magnets will attract each other.<br/>• The same poles on two magnets will repel each other.</p> |
| <p><b>Challenge</b></p> | <p><b>Lesson 1</b><br/>Give pictures of bones and children put together correctly to make skeleton</p> <p><b>Lesson 2</b><br/>Children explain to function in further detail</p> <p><b>Lesson 3</b><br/>Assemble different animal skeletons and label bones</p> <p><b>Lesson 4</b><br/>Answer reasoning questions -</p>  | <p><b>Lesson 7</b><br/>Explain what would happen if humans had no skeleton, joints and/or muscles.</p> <p><b>Lesson 8</b><br/>Group the food into how healthy it is.</p> <p><b>Lesson 9</b><br/>Use secondary sources to understand effect of different food groups on the body.</p> <p><b>Lesson 10</b></p>  | <p><b>Lesson 1</b><br/>Sort the rocks into more than two categories or to guess the sorting rule of another child.</p> <p><b>Lesson 2</b><br/>Arrange rocks in order of hardness</p> <p><b>Lesson 3</b><br/>Observe how rocks in the local area change over time e.g. gravestones</p>  | <p><b>Lesson 1</b><br/>Identify whether light sources are natural or artificial light sources.</p> <p><b>Lesson 2</b><br/>Investigate which materials would be best to make sunglasses.</p> <p><b>Lesson 3</b><br/>Explain what somebody could do to be seen at night.</p> <p><b>Lesson 4</b></p>   | <p><b>Lesson 1</b><br/>Note the similarities and differences between the parts of different plants.</p> <p><b>Lesson 2</b><br/>Explain why the number of seeds might affect plant growth.</p> <p><b>Lesson 3</b><br/>Using key vocab, explain how water is transported in plants.</p> <p><b>Lesson 4</b></p>  | <p><b>Lesson 1</b><br/>Push and pull the clay and record their observations. Identify whether they have applied a push or a pull force.</p> <p><b>Lesson 2</b><br/>Write an explanation as to 'why' the friction is more or less on different surfaces.</p> <p><b>Lesson 3</b><br/>Use data to draw a simple conclusion</p>   |

# Science Medium Term Plan – Year 3



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|                           | <p>All animals without a spine have an exoskeleton<br/>Some animals without a spine have an exoskeleton.</p> <p><b>Lesson 5</b><br/>Explain how skeletons of given animal group are similar or different to other animal groups.</p> <p><b>Lesson 6</b><br/>Identify whether joints are hinge or ball and socket joints.</p>   | <p>Provide a food journal to analyse.</p> <p><b>Lesson 11</b><br/>Create a meal plan for someone with the given diet type.</p> <p><b>Lesson 12</b><br/>Explain how to animal's diet helps it to survive.</p>  | <p><b>Lesson 4</b><br/>Use knowledge from the skeleton block to label the main bones found in the animal.</p> <p><b>Lesson 5</b><br/>Choose favourite type of soil and write 3 reasons why.</p> <p><b>Lesson 6</b><br/>Design a garden focusing on which soil would stop plants getting too soggy after rain.</p>  | <p>Explain why some objects do not form shadows.</p> <p><b>Lesson 5</b><br/>Explain how the investigation is fair and what might make in unfair</p> <p><b>Lesson 6</b><br/>Repeat the experiment using a different object, to test whether their results and conclusion remain the same.</p>  | <p>Compare the similarities and differences between the reproductive parts of different flowers.</p> <p><b>Lesson 5</b><br/>Explain why each part of the process of pollination is important.</p> <p><b>Lesson 6</b><br/>Explain how seed dispersal would affect the life cycle of a plant.</p>   | <p><b>Lesson 4</b><br/>Write conclusions.</p> <p><b>Lesson 5</b><br/>Repeat investigation with other magnets and draw a conclusion.</p> <p><b>Lesson 6</b><br/>Make predictions before testing the attraction or repulsion of the two magnets.</p>   |
| <b>Suggested Outcomes</b> | <p><b>Lesson 1</b><br/>Label the different bones.</p> <p><b>Lesson 2</b><br/>Continuing from last lesson, children label bones with function e.g. movement, support and protection.</p> <p><b>Lesson 3</b><br/>Match pictures of animals to their skeletons.</p> <p><b>Lesson 4</b><br/>Identify animals with and without a spine</p> <p><b>Lesson 5</b><br/>Create a presentation on 1 animal group answering: How can animals be sorted and grouped based on their skeletons?</p> <p><b>Lesson 6</b><br/>Identify and name joints in the body.</p> | <p><b>Lesson 7</b><br/>Explain how muscles work together using vocab: push, pull, contract, relax.</p> <p><b>Lesson 8</b><br/>Sort and group food packaging based on food type.</p> <p><b>Lesson 9</b><br/>Define each of the five food groups.</p> <p><b>Lesson 10</b><br/>Design a healthy and balanced lunchtime meal.</p> <p><b>Lesson 11</b><br/>Research a given diet type e.g. vegetarian, vegan, pescatarian and omnivorous.</p> <p><b>Lesson 12</b><br/>Research an animal and their diet.</p> | <p><b>Lesson 1</b><br/>Group rocks into two simple categories e.g. soft/hard.</p> <p><b>Lesson 2</b><br/>Test the hardness of the rocks using a nail.<br/>Test to see whether the rocks float or sink.</p> <p><b>Lesson 3</b><br/>Name buildings and structures in local area and record appearance and texture of rocks.</p> <p><b>Lesson 4</b><br/>Sort fossils into plants and animals.<br/>Observe and draw fossils.</p> <p><b>Lesson 5</b><br/>Soil type exploration – draw and label diagrams of different soils.</p> <p><b>Lesson 6</b><br/>Complete a fair test on soil absorption of water.</p> | <p><b>Lesson 1</b><br/>Group and sort items into light sources and not light sources.</p> <p><b>Lesson 2</b><br/>Sort objects: protects from the sun/does not protect from the sun.</p> <p><b>Lesson 3</b><br/>Draw and label diagram showing light reflection.</p> <p><b>Lesson 4</b><br/>Investigate the shape and size of different objects and their shadows.</p> <p><b>Lesson 5</b><br/>Plan a simple investigation by choosing what to test, what to change, what to keep the same, and what to measure or observe.</p> <p><b>Lesson 6</b><br/>Explore whether doubling the distance from the torch halves the size of the shadow</p> | <p><b>Lesson 1</b><br/>Label parts of plants and explain their function.</p> <p><b>Lesson 2</b><br/>Plan and carry out investigation: Do the number of seeds within one plant pot affect the growth of the plants?</p> <p><b>Lesson 3</b><br/>Draw diagrams of how water is transported in plants.</p> <p><b>Lesson 4</b><br/>Label reproductive parts of flowers.</p> <p><b>Lesson 5</b><br/>Create a simple model to show the process of pollination.</p> <p><b>Lesson 6</b><br/>Create a presentation on the life cycle of a plant</p> | <p><b>Lesson 1</b><br/>Complete a range of activities and identify whether a push or pull force has been used.</p> <p><b>Lesson 2</b><br/>Record what is noticed when a marble is rolled on various materials</p> <p><b>Lesson 3</b><br/>Record findings on a table.</p> <p><b>Lesson 4</b><br/>Make predictions and test the strength of magnets using paperclips. Record finding on a table.</p> <p><b>Lesson 5</b><br/>Make a prediction, write why and group materials into magnetic and non-magnetic.</p> <p><b>Lesson 6</b><br/>Define attract, repel, poles</p> |
| <b>Key Vocabulary</b>     | <p>skeleton, skull, ribcage, pelvis, femur, spine, antennae, exoskeleton, joint, hinge joint, ball-and-socket joint, muscle, biceps, triceps, contract, relax carbohydrates, proteins, dairy products, fats, fruit and vegetables, balanced diet, balanced meal, nutrition, Eatwell Guide, vegan diet, vegetarian diet, omnivorous diet, pescatarian diet</p>  | <p>granite, pumice, sandstone, chalk, marble, gneiss, crystals, grains, layers, texture, hardness, weathering, fossil, shell, fossilisation, sediment, sandy soil, clay soil, peat soil, chalky soil, organic matter, nutrients, deforestation, habitat loss</p>  | <p>light sources, natural light sources, artificial light sources, Sun, sunglasses, protect, reflection, shadow</p>  | <p>water transportation, seedling, seed coating, germination, stamen, pistil, pollen, reproductive organs, pollination, pollinators, wind dispersal, animal dispersal, water dispersal, explosion dispersal, seed dispersal</p>   | <p>push, pull, force, contact force, friction, magnet, magnetic, poles, magnetic force, non-metal, iron, aluminium, steel, attract, repel</p>   |  |

| Year 4                 | Cycle 1a<br>[01/09/25 – 06/10/25]  | Cycle 1b<br>[13/10/25 – 24/11/25]   | Cycle 2a<br>[01/12/25 – 19/01/26]  | Cycle 2b<br>[06/01/26 – 16/03/26]  | Cycle 3a<br>[23/03/26 – 18/05/26]  | Cycle 3b<br>[01/06/26 – 06/07/26] |
|------------------------|--|---|--|--|--|-----------------------------------|
| <b>Theme</b>           | <b>Living things and their habitats</b>  | <b>States of Matter</b>   | <b>Sound</b>   | <b>Electricity</b>   | <b>Animals, including humans</b>   |                                   |
| <b>Content</b>         | <p>Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>   | <p>Compare and group materials together, according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) .</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> | <p>Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases</p> | <p>Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors</p> | <p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p>                   |                                   |
| <b>Prior Knowledge</b> | <p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats.</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name.</p> |   |  |  | <p>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> |                                   |

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| Sequence of Lessons | <p><b>Lesson 1: (Grouping classifying living things Step 1-2)</b><br/> <b>LQ: Can I recognise that animals can be grouped in a variety of ways?</b><br/>                 S: Asking relevant questions and using different types of scientific enquiries to answer them.<br/>                 K: Animals with a spine are called vertebrates. All mammals, birds, fish, amphibians and reptiles are vertebrates. Each vertebrate group has different physical features. Animals with a spine are called vertebrates. Animals without a spine are called invertebrates. Insects and spiders are invertebrates. Slugs and snails are soft-bodied invertebrates.</p> | <p><b>Lesson 1: (States of Matter Step 1-2)</b><br/> <b>LQ: Can I compare and group solids, liquids and gases?</b><br/>                 S: Identifying differences, similarities or changes related to simple scientific ideas<br/>                 K: Solids have a fixed shape and volume. A solid material will keep its shape if it is transferred from one container to another. Liquids have no fixed shape and will take on the shape of the container they are transferred into. The volume will remain the same. Gases have no fixed shape and no fixed volume. They will spread out and fill any available space. Some solids, such as sand, salt, flour and rice, can be poured but they are still classified as solid materials. Liquids maintain the same volume when transferred to different containers. Some liquids, like water, flow easily while other liquids, such as treacle, do not flow as easily.</p> | <p><b>Lesson 1: (Sound Step 9-10)</b><br/> <b>LQ: Can I identify how sounds are made, associating some of them with something vibrating?</b><br/>                 S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables<br/>                 K: A vibration is a quick back-and-forth movement. Sounds are made when objects vibrate. The vibrations travel from the object to our ears. Sounds can be heard when these vibrations reach our ears.</p>   | <p><b>Lesson 1: (Electricity Step 1-2)</b><br/> <b>LQ: Can I construct a simple series circuit?</b><br/>                 S: Asking relevant questions and using different types of scientific enquiries to answer them.<br/>                 K: Many appliances use electricity and must be plugged into a socket for the electricity to pass through the circuit. Other appliances may need batteries to power the energy around a circuit. Some appliances use electricity to heat things up (cooker hobs) and cool things down (fridges and freezers). Electricity can be extremely harmful. Liquids and wet hands should be kept away from electrical appliances and circuits.</p> | <p><b>Lesson 1: (The Digestive System Step 1)</b><br/> <b>LQ: Can I compare the teeth of different animals?</b><br/>                 S: Identifying differences, similarities or changes related to simple scientific ideas and processes.<br/>                 K: Carnivores have long, sharp teeth to help them with ripping and tearing through meat. Herbivores have large, flat teeth to grind and chew through grasses and plants. Omnivores have a combination of sharp and flat teeth, allowing them to tear through meat and grind plants.</p>                   | <p><b>Lesson 7: (The Digestive System Step 7)</b><br/> <b>LQ: Can I investigate tooth decay?</b><br/>                 S: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.<br/>                 K: Germs in the mouth feed on sugars and produce acid which can break down the enamel on the teeth. Enamel acts as a protective layer for the sensitive parts of the tooth underneath. We can look after our teeth by brushing them twice a day, reducing our sugar intake and visiting the dentist regularly.</p> |
|                     | <p><b>Lesson 2: (Grouping classifying living things Step 3)</b><br/> <b>LQ: Can I use a classification key to group animals?</b><br/>                 S: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.<br/>                 K: Classification keys can be used to classify animals. Closed questions are used in classification keys</p>  | <p><b>Lesson 2: (States of Matter Step 3)</b><br/> <b>LQ: Can I observe the changes in materials when they are heated or cooled?</b><br/>                 S: Asking relevant questions and using different types of scientific enquiries to answer them.<br/>                 K: Some materials can change state between a solid, a liquid and a gas. Water can be a solid (ice), a liquid (water) or a gas (water vapour). When heat is applied to ice, the ice melts and turns to water. When water is heated it turns into a gas. To change water vapour (gas) back to water (liquid) it needs</p>  | <p><b>Lesson 2: (Sound Step 2)</b><br/> <b>LQ: Can I explain how sound reaches the ear?</b><br/>                 S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.<br/>                 K: Sound vibrations travel through the air. The outer ear funnels the vibrations into the ear canal. The vibrations move down the ear canal. The vibrations are passed to the ear drum. The vibrations from the ear drum are passed along the ear bones and into the cochlea. Signals are then sent to the brain, where they are processed and interpreted as sounds we</p> | <p><b>Lesson 2: (Electricity Step 3)</b><br/> <b>LQ: Can I identify faults in a series circuit?</b><br/>                 S: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions<br/>                 K: A bulb will not light in a circuit if it is not in a complete loop with the cell. A bulb will not light in a circuit if a switch is open.</p>  | <p><b>Lesson 2: (The Digestive System Step 2)</b><br/> <b>LQ: Can I identify the functions of different human teeth?</b><br/>                 S: Asking relevant questions and using different types of scientific enquiries to answer them.<br/>                 K: Humans have four different types of teeth – incisors, canines, premolars and molars. The incisors are used for biting into food. The canine teeth are sharp and pointed to help with ripping and tearing. The premolars are teeth between the canines and molars. They are used for guiding food</p> | <p><b>Lesson 8: (Food Chains Step 1)</b><br/> <b>LQ: Can I explore simple food chains?</b><br/>                 S: Using straightforward scientific evidence to answer questions or to support their findings.<br/>                 K: A food chain shows an order of living things, to show how energy is transferred when one living thing eats another. Food chains begin with a producer. The arrows in a food chain show the energy transfer from one food source to another.</p>  |

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|  |   | to be cooled down as it returns to its liquid state.<br>To change water to ice, it needs to be frozen.  | understand.  |  | towards the molars at the back of the mouth.<br>The molars are the large teeth at the back of the jaw. They are used for grinding and chewing food.  |  |
|  | <p><b>Lesson 3: (Grouping classifying living things Step 4-5)</b><br/><b>LQ: Can I use a classification key to group plants?</b><br/>S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion<br/>K: Non-flowering plants include mosses and ferns. Flowering plants can produce flowers and fruit. Deciduous trees lose their leaves in autumn. Evergreen trees keep their leaves all year round. Classification keys can be used to classify plants. Closed questions are used in classification keys.</p> | <p><b>Lesson 3: (States of Matter Step 4)</b><br/><b>LQ: Observe that some materials change state when heated or cooled?</b><br/>S: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.<br/>K: A thermometer is used to measure temperature. A stopwatch is used to measure intervals of time.</p> | <p><b>Lesson 3: (Sound Step 3)</b><br/><b>LQ: Can I identify how sounds are made?</b><br/>S: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.<br/>K: Sound volume is measured in decibels (dB). A decibel is a measure of the loudness of sounds. A decibel meter can be used to measure the loudness of sounds. If humans are exposed to loud sounds too often, their hearing can be damaged.</p> | <p><b>Lesson 3: (Electricity Step 4)</b><br/><b>LQ: Can I recognise some common conductors and insulators?</b><br/>S: Asking relevant questions and using different types of scientific enquiries to answer them.<br/>K: A conductor is a material which allows energy to flow through it. Metals are good conductors. An insulator does not allow energy to flow through it. Materials which are insulators are rubber, plastic and wood</p>                            | <p><b>Lesson 3: (The Digestive System Step 1)</b><br/><b>LQ: Can I identify the layers of human teeth?</b><br/>S: Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations (non-statutory).<br/>K: Human teeth have layers which include enamel, pulp and roots. Enamel protects the sensitive parts of the tooth underneath. The human mouth is full of different germs which feed on sugar in the mouth and can cause plaque to build up. If plaque is not removed from the teeth, it can cause the enamel layer to rot away, exposing the sensitive layers underneath.</p> | <p><b>Lesson 9: (Food Chains Step 2)</b><br/><b>LQ: Can I interpret simple food chains?</b><br/>S: Using straightforward scientific evidence to answer questions or to support their findings.<br/>K: A food chain consists of producers, consumers, predators and prey. Food chains show an order of living things, to show how energy is transferred when one living thing eats another. Food chains can either be shorter or longer depending on the number of animals that live within a habitat</p> |
|  | <p><b>Lesson 4: (Habitats Step 1)</b><br/><b>LQ: Can I explore how each type of habitat meets the needs of the plants and animals that live there?</b><br/>S: To ask relevant questions and use different types of scientific enquiries to answer them.<br/>K: Habitats usually provide everything an animal or plant needs. There are lots of different types of habitat, including fields, woodland, urban areas and aquatic habitats. Rural and urban habitats can both be biodiverse but are not suitable for every animal.</p>   | <p><b>Lesson 4: (States of Matter Step 5-6)</b><br/><b>LQ: Can I measure the effect of temperature on a material?</b><br/>S: Setting up simple practical enquiries, comparative and fair tests.</p>   | <p><b>Lesson 4: (Sound Step 4)</b><br/><b>LQ: Can I find patterns between the volume of a sound and the strength of the vibrations that produced it.</b><br/>S: Setting up simple practical enquiries, comparative and fair tests.<br/>K: A vibration is a quick back-and-forth movement. Sounds are made when objects vibrate. The louder the sound, the bigger the vibration. The quieter the sound, the smaller the vibration</p>   | <p><b>Lesson 4: (Electricity Step 5)</b><br/><b>LQ: Can I investigate how insulators and conductors effect circuits?</b><br/>S: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions<br/>K: A conductor is a material which allows energy to pass through it. An insulator does not allow energy to pass through it. Some materials can be used to connect a gap in a circuit, others cannot.</p> | <p><b>Lesson 4: (The Digestive System Step 4)</b><br/><b>LQ: Can I investigate tooth decay?</b><br/>S: Setting up simple practical enquiries, comparative and fair tests.<br/>K: Human teeth have layers. Enamel acts as a protective layer for the sensitive parts of the tooth underneath. Germs in the mouth feed on sugars and produce acid which can break down the enamel on the teeth.</p>  | <p><b>Lesson 10: (Food Chains Step 3)</b><br/><b>LQ: Can I construct food chains?</b><br/>S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.<br/>K: Food chains can be different lengths depending on the living things within a habitat. Producers are living things such as plants that make their own food. Consumers eat plants and/or animals.</p>  |

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|  | <p> Research</p> <p><b>Lesson 5: (Habitats Step 2-3)</b><br/> <b>LQ: Can I use classification keys to group a variety of living things?</b><br/>                 S: Gathering, recording, classifying and presenting data in a variety of ways, to help in answering questions.<br/>                 K: Animals can be sorted and classified in many ways. Classification keys can be used to classify animals. Closed questions are used in classification keys. Animals live within different habitats, depending on what they need to survive. Plants can be sorted and classified in many ways. Classification keys can be used to classify plants. Closed questions are used in classification keys. Plants live within different habitats depending on what they need to survive.</p> | <p> Comparative/fair testing</p> <p><b>Lesson 5: (States of Matter Step 7-8)</b><br/> <b>LQ: Can I explain the process of the water cycle?</b><br/>                 S: Identifying differences, similarities or changes related to simple scientific ideas and processes.<br/>                 K: Nearly three-quarters of planet Earth is covered in water. Water is in constant movement through a process called the water cycle. As the water moves it is in different states of matter. Evaporation is one stage of the water cycle. Evaporation is when a liquid changes state to a gas. Condensation is when a gas changes state to a liquid.</p> | <p> Comparative/fair testing</p> <p><b>Lesson 5: (Sound Step 5)</b><br/> <b>LQ: Can I find patterns between the pitch of a sound?</b><br/>                 S: Identifying differences, similarities or changes related to simple scientific ideas and processes.<br/>                 K: Pitch means how high or low a sound is. High-pitched sounds produce faster or more frequent vibrations. Low-pitched sounds produce slower or less frequent vibrations. There are different ways to change the pitch of an instrument.</p> | <p> Pattern-seeking</p> <p><b>Lesson 5: (Energy Step 1)</b><br/> <b>LQ: Can I explain the effects of energy usage?</b><br/>                 S: Asking relevant questions and using different types of scientific enquiries to answer them.<br/>                 K: Electricity is energy that flows in wires. We use electricity to power our homes and schools. Electricity can be made from burning oil, coal and natural gas which is harmful for planet Earth.</p>   | <p> Research</p> <p><b>Lesson 5: (The Digestive System Step 5)</b><br/> <b>LQ: Can I describe the function of the digestive system?</b><br/>                 S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.<br/>                 K: Digestion is the breaking down of larger pieces of food into smaller pieces so the body can use it for energy. The digestion process begins when food is bitten by the teeth. Saliva turns smaller pieces of food into a more liquid substance so it travels smoothly down the oesophagus to the stomach. The stomach churns the food, and adds acid to break it down further before the partially digested food passes to the small intestine. The small intestine absorbs nutrients from the food and passes the remaining food to the large intestine. The large intestine absorbs water from the remaining food, and then passes the remaining waste to the rectum.</p> | <p> Research</p> <p><b>Lesson 11: (Food Chains Step 4)</b><br/> <b>LQ: Can I describe human impact on food chains?</b><br/>                 S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.<br/>                 K: If food chains are affected by human activity, it can cause many issues for living things within a habitat. Humans may have a negative impact on food chains and habitats. This could even lead to the extinction of some living things. Humans can affect food chains through farming, destroying habitats, hunting and overfishing.</p> |
|  | <p> Research</p> <p><b>Lesson 6: (Habitats Step 4)</b><br/> <b>LQ: Can I explain the impact of humans on habitats?</b><br/>                 S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.<br/>                 K: Humans can have both positive and negative effects on the natural environment. Rewilding increases biodiversity by providing a greater range of habitats by returning a damaged habitat to how it used to be. Nature reserves offer a protected space for plants and animals to live and grow.</p>  | <p> Comparative/fair testing</p> <p><b>Lesson 6: (States of Matter Step 9-10)</b><br/> <b>LQ: Can I explain the process of evaporation?</b><br/>                 S: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>   | <p> Comparative/fair testing</p> <p><b>Lesson 6: (Sound Step 6-8)</b><br/> <b>LQ: Can I recognise that sounds get fainter as the distance from the sound source increases?</b><br/>                 S: Setting up simple practical enquiries, comparative and fair tests.</p>  | <p> Pattern-seeking</p> <p><b>Lesson 6: (Energy Step 2)</b><br/> <b>LQ: Can I explain the impact of energy usage?</b><br/>                 S: Using straightforward scientific evidence to answer questions or to support their findings.<br/>                 K: There are different ways to reduce our energy usage. It is important to reduce our energy usage as this means we burn less oil, coal and natural gas. Turning off lights and appliances, unplugging electronic equipment and using natural light as much as possible helps to reduce our energy usage.</p> | <p> Research</p> <p><b>Lesson 6: (The Digestive System Step 6)</b><br/> <b>LQ: Can I describe the function of parts of the digestive system?</b><br/>                 S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.<br/>                 K: The digestive system allows the body to take in nutrients from food as it passes through the body. Each organ within the digestive system has a function to help the body break down food.</p>   |   |




















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|                           | Natural resources can be limited, and over-using them can damage the environment.   |  |  |  |  |  |
| <b>Challenge</b>          | <p><b>Lesson 1</b><br/>Group images in more than one way.</p> <p><b>Lesson 2</b><br/>Complete classification key with own clues.</p> <p><b>Lesson 3</b><br/>Create open and closed question cards.</p> <p><b>Lesson 4</b><br/>Provide reasons why an animal or plants live in different habitats.</p> <p><b>Lesson 5</b><br/>Create a classification key using animal cards.</p> <p><b>Lesson 6</b><br/>Discuss the reasons why humans can have a negative impact on the environment.</p> | <p><b>Lesson 1</b><br/>Explain why some materials cannot be grouped into solids, liquids or gases.</p> <p><b>Lesson 2</b><br/>Explain other materials that change state when heated or cooled.</p> <p><b>Lesson 3</b><br/>Record the temperature of cold water over time.</p> <p><b>Lesson 4</b><br/>Interpret and compare different results.</p> <p><b>Lesson 5</b><br/>Explain each process on the water cycle diagram.</p> <p><b>Lesson 6</b><br/>Compare results and conclusion with prediction.</p> | <p><b>Lesson 1</b><br/>Explain how the sounds of the instruments are produced.</p> <p><b>Lesson 2</b><br/>Use secondary sources to research the ears of other animals and how they are adapted.</p> <p><b>Lesson 3</b><br/>Plot volume of sounds heard on a bar chart.</p> <p><b>Lesson 4</b><br/>Explain which material is the best sound insulator and why.</p> <p><b>Lesson 5</b><br/>Explain what causes sounds to have different pitches.</p> <p><b>Lesson 6</b><br/>Independently plan and carry out an investigation.</p> | <p><b>Lesson 1</b><br/>Explain what happens when more batteries are added to the circuit.</p> <p><b>Lesson 2</b><br/>Write predictions about why there is a fault in a circuit.</p> <p><b>Lesson 3</b><br/>Spot simple patterns in materials that are used as conductors or insulators.</p> <p><b>Lesson 4</b><br/>Investigate further questions about the properties of conductors, e.g. “Are all conductors shiny?”</p> <p><b>Lesson 5</b><br/>Explore different ways we can be more eco-friendly.</p> <p><b>Lesson 6</b><br/>Consider barriers of a low/zero energy school.</p> | <p><b>Lesson 1</b><br/>Research an animal to find out about its diet. Use the information to describe teeth structure.</p> <p><b>Lesson 2</b><br/>Add labels to a diagram of the types of teeth and describe their functions.</p> <p><b>Lesson 3</b><br/>Explain the impact of sugar on teeth.</p> <p><b>Lesson 4</b><br/>Explain the importance of ensuring the test is ‘fair’.</p> <p><b>Lesson 5</b><br/>Write a story about the journey of food through the digestive system.</p> <p><b>Lesson 6</b><br/>Explain what happens during each part of the digestion process.</p> | <p><b>Lesson 7</b><br/>Explain how sugary drinks affect the enamel of our teeth.</p> <p><b>Lesson 8</b><br/>Explain why some animals in a food chain can be labelled with more than one label e.g. consumer, producer etc.</p> <p><b>Lesson 9</b><br/>Discuss what would happen if 1 part of the food chain was removed.</p> <p><b>Lesson 10</b><br/>Provide incomplete food chains. Research food chains to find out which living things are missing from the food chain.</p> <p><b>Lesson 11</b><br/>Include ways to prevent future damage to food chains.</p> <p><b>Lesson 12</b></p> |
| <b>Suggested outcomes</b> | <p><b>Lesson 1</b><br/>Group images of invertebrates based on different physical characteristics.</p> <p><b>Lesson 2</b><br/>Use clues to follow a classification key.</p> <p><b>Lesson 3</b><br/>Make observations of the physical features of plants to group them.</p> <p><b>Lesson 4</b><br/>Identify different features of habitats.</p> <p><b>Lesson 5</b><br/>Use scientific vocabulary to ask closed questions</p> <p><b>Lesson 6</b></p>   | <p><b>Lesson 1</b><br/>Sort materials into solids liquids and gases.</p> <p><b>Lesson 2</b><br/>Explain how water changes state.</p> <p><b>Lesson 3</b><br/>Accurately use a stopwatch and thermometer.</p> <p><b>Lesson 4</b><br/>Use a thermometer and stopwatch to record accurate results.</p> <p><b>Lesson 5</b><br/>Draw and label water cycle diagram.</p> <p><b>Lesson 6</b><br/>Write a conclusion based on the findings of the investigation.</p>  | <p><b>Lesson 1</b><br/>Explain which parts of instruments make sound.</p> <p><b>Lesson 2</b><br/>Label a diagram of the ear.</p> <p><b>Lesson 3</b><br/>Record volume of sounds heard on a table.</p> <p><b>Lesson 4</b><br/>Use different materials to test best insulator of sound.</p> <p><b>Lesson 5</b><br/>Define the word ‘pitch’.</p> <p><b>Lesson 6</b><br/>Plan and carry out an investigation.</p>  | <p><b>Lesson 1</b><br/>Build a range of simple circuits.</p> <p><b>Lesson 2</b><br/>Identify faults within a circuit.</p> <p><b>Lesson 3</b><br/>Sort materials into conductors and insulators.</p> <p><b>Lesson 4</b><br/>Investigate other variables, such as whether the size of the objects affects conductivity.</p> <p><b>Lesson 5</b><br/>Sort images of different energy sources in different ways.</p> <p><b>Lesson 6</b><br/>Plan a “low/zero” energy day for the class.</p>   | <p><b>Lesson 1</b><br/>Group animals based on teeth and food groups.</p> <p><b>Lesson 2</b><br/>Create a model of each tooth type.</p> <p><b>Lesson 3</b><br/>Explain the function of different parts of the tooth.</p> <p><b>Lesson 4</b><br/>Carry out a fair test.</p> <p><b>Lesson 5</b><br/>Order pictures of the digestive system correctly.</p> <p><b>Lesson 6</b><br/>Make a model of the digestive system.</p>  | <p><b>Lesson 7</b><br/>Analyse findings from tooth decay experiment.</p> <p><b>Lesson 8</b><br/>Use images to label simple food chains.</p> <p><b>Lesson 9</b><br/>Identify the producers, consumers, predators and prey.</p> <p><b>Lesson 10</b><br/>Create different food chains from the plants and animals in given habitat.</p> <p><b>Lesson 11</b><br/>Research and present findings on how humans can impact food chains.</p>   |







# Science Medium Term Plan – Year 4



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|                       | As a class, create/design a small nature reserve.   |  |   |  |  |  |
| <b>Key Vocabulary</b> | biodiversity, natural resources, classify, nature reserve, classification key, flowering plant, non-flowering plant, vertebrate, invertebrate | solid, liquid gas, volume, states of matter, flow, freeze, melt, boil, condensation, evaporation, temperature, evaporation | vibration, sound, volume, pitch, outer ear, ear bones, cochlea, ear drum, ear canal, decibel, insulate, high-pitched, low-pitched, background noise | appliances, plug, socket, cell, electrocuted, circuit, switch, battery, buzzer, conductor, insulator | incisors, canines, premolars, molars, enamel, root, decay, digestive system, mouth, oesophagus, stomach, small intestine, large intestine, rectum, saliva producer, consumer, prey, predator, farming, |  |

| <u>Year 5</u>          | <b>Cycle 1a</b><br>[01/09/25 – 06/10/25]  | <b>Cycle 1b</b><br>[13/10/25 – 24/11/25]  | <b>Cycle 2a</b><br>[01/12/25 – 19/01/26]   | <b>Cycle 2b</b><br>[06/01/26 – 16/03/26]   | <b>Cycle 3a</b><br>[23/03/26 – 18/05/26] | <b>Cycle 3b</b><br>[01/06/26 – 06/07/26]   |
|------------------------|---|---|--|--|--|--|
| <b>Theme</b>           | <b>Forces</b>   | <b>Earth and Space</b>  | <b>Properties of materials</b>   | <b>Animals, including humans<br/>Reproduction</b>  |  | <b>Reversible and irreversible changes</b>   |
| <b>Content</b>         | Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.<br>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.<br>Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.  | Describe the movement of the Earth and other planets relative to the sun in the solar system.<br>Describe the movement of the moon relative to the Earth<br>Describe the sun, Earth and moon as approximately spherical bodies.<br>Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky. | Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.<br>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. | Describe the changes as humans develop to old age.<br>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.<br>Describe the life process of reproduction in some plants and animals.  |  | To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.<br>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating<br>Demonstrate that dissolving, mixing and changes of state are reversible changes.<br>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. |
| <b>Prior Knowledge</b> | Compare how things move on different surfaces.<br>Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance.<br>Observe how magnets attract or repel each other and attract some materials and not others.<br>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.<br>Describe magnets as having 2 poles.<br>Predict whether 2 magnets will attract or repel each other, depending on which poles are facing. |   | Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses<br>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.   | Describe the simple functions of the basic parts of the digestive system in humans.<br>Identify the different types of teeth in humans and their simple functions.<br>Construct and interpret a variety of food chains, identifying producers, predators and prey. |  | Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses<br>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching  |







| Sequence of Lessons |  Comparative/<br>fair testing   |  Research  |  Comparative/<br>fair testing   |  Pattern-seeking  |  Research   |  Identifying,<br>grouping<br>and classifying  |
|---------------------|--|--|--|--|--|--|
|                     |  Comparative/<br>fair testing<br><b>Lesson 1: (Forces Step 1)</b><br><b>LQ: Can I identify the effects of friction?</b><br>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).<br>K: Friction is a contact force that is caused by one object being pushed across the surface of another. Friction can stop or slow down a moving object. A stationary object will only move when the force applied is greater than the friction, which acts in the opposite direction to the movement. Friction has many useful applications, such as in the use of brakes to slow down a vehicle and sandpaper to smooth a surface. |  Research<br><b>Lesson 1: (Space Step 1)</b><br><b>LQ: Can I describe the Sun, Earth and Moon as approximately spherical bodies?</b><br>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br>K: The Sun, plants and moons are approximately spherical bodies. The Solar System is a collection of planets, moons and the Sun. The Sun is a star, which releases heat and light. The Sun is at the centre of the Solar System. |  Comparative/<br>fair testing<br><b>Lesson 1: (Properties of Materials Step 1)</b><br><b>LQ: Can I compare and group together everyday materials?</b><br>S: Use and develop keys and other information records to identify, classify and describe living things and materials (non-statutory).<br>K: Materials can be transparent, translucent or opaque. A harder material will scratch a softer material. Most metals are non-magnetic. Only a few metals are magnetic, such as iron and steel. |  Pattern-seeking<br><b>Lesson 1: (Animals, including humans Step 1)</b><br><b>LQ: Can I describe the human life cycle?</b><br>S: Explore ideas and raise different kinds of questions (non-statutory).<br>K: The human life cycle has six main stages – foetus, baby, child, adolescent, adult and elderly adult. Every human goes through the same life stages in the same order. All humans start their life as a foetus inside their mother’s womb. After puberty, humans can reproduce. |  Research<br><b>Lesson 7: (Life cycles Step 1-4)</b><br><b>LQ: Can I describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird?</b><br>S: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.<br>K: <b>Mammals</b><br>Have four life stages: foetus, young, adolescent, adult. Most give birth to live young and feed them milk from mammary glands.<br><b>Amphibians (frogs)</b><br>Life cycle: frogspawn, tadpole, froglet, adult. Tadpoles have gills, tails and transform into adult frogs in ~14 weeks. Adult frogs live both on land and in water.<br><b>Insects</b><br>Have four life stages: egg, larva, pupa, adult. Larvae are young insects; pupae are in-between stage before adulthood. Insects have three body sections, six legs, and antennae.<br><b>Birds</b><br>Life cycle: egg, hatchling, nestling, fledgling, adult. Reproduce by laying eggs, which parents incubate until hatching. Adults have full feathers and can reproduce. |  Identifying,<br>grouping<br>and classifying<br><b>Lesson 1: (Reversible and irreversible changes Step 1)</b><br><b>LQ: Can I describe how some materials dissolve in water?</b><br>S: Using test results to make predictions to set up further comparative and fair tests.<br>K: A soluble substance can dissolve in a liquid. Salt and sugar are soluble in a liquid. An insoluble substance cannot dissolve in a liquid. Sand and flour are insoluble in a liquid. To make a solution, a substance is dissolved into a liquid. Increasing the temperature of the liquid increases the rate of dissolving. Stirring the liquid increases the rate of dissolving |
|                     |  Comparative/<br>fair testing<br><b>Lesson 2: (Forces Step 2-3)</b><br><b>LQ: Can I identify the effects of air resistance?</b><br>S: – Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.<br>K: Air resistance is a type of friction force on an object  |  Research<br><b>Lesson 2: (Space Step 2)</b><br><b>LQ: Can I compare the planets in the solar system?</b><br>S: Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.<br>K: There are eight planets that orbit the Sun.   |  Comparative/<br>fair testing<br><b>Lesson 2: (Properties of Materials Step 2)</b><br><b>LQ: Can I compare and group materials based on electrical conductivity?</b><br>S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.  |  Pattern-seeking<br><b>Lesson 2: (Animals, including humans Step 2)</b><br><b>LQ: Can I explain key milestones in baby and child development?</b><br>S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.   |  Observation<br>over time<br><b>Lesson 8: (Reproduction A Step 1)</b><br><b>LQ: Can I describe reproduction in mammals?</b><br>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).<br>K: Sexual reproduction involves   |  Identifying,<br>grouping<br>and classifying<br><b>Lesson 2: (Reversible and irreversible changes Step 2)</b><br><b>LQ: Can I explore the processes of sieving and filtering?</b><br>S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line   |







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|  | <p>moving through air.<br/>The greater the surface area of an object, the greater the air resistance.<br/>Parachutes have a large surface area, to give them greater air resistance to slow down the skydiver.<br/>Air resistance increases with speed.</p>  | <p>Mercury, Venus, Earth and Mars all have a solid surface. Jupiter, Saturn, Uranus and Neptune are made mostly of gas and do not have a solid surface. Pluto is classified as a dwarf planet.</p>  | <p>K: An electrical conductor is a material that allows electricity to flow through it.<br/>An electrical insulator is a material that does not allow electricity to flow through it. Metals are good electrical conductors.<br/>Plastic, wood and paper are electrical insulators.</p>   | <p>K: Babies are dependent on adults for food, warmth and comfort.<br/>Most babies and toddlers hit certain milestones in their first two years of life, such as crawling and walking.<br/>Throughout childhood, children grow and develop at a rapid rate in terms of their mass, height and brain development.</p>  | <p>two parents producing offspring.<br/>Offspring produced by sexual reproduction are not identical to the parents.<br/>Fertilisation is the process by which a sperm cell joins with an egg cell to create a new life.</p>  | <p>graphs.<br/>K: Sieving can be used to separate a mixture of different-sized solids.<br/>Filtering can be used to separate an insoluble solid from a liquid.<br/>A liquid will pass through filter paper, but an insoluble solid will not.<br/>Filtering cannot be used to separate a soluble solid from a liquid.</p>   |
|  | <p> Comparative/fair testing<br/><b>Lesson 3: (Forces Step 4-5)</b><br/><b>LQ: Can I identify the effects of air resistance?</b><br/>S: using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.<br/>K: Air resistance is a type of friction force on an object moving through air.<br/>The greater the surface area of an object, the greater the air resistance.<br/>Parachutes have a large surface area, to give them greater air resistance to slow down the skydiver.<br/>Air resistance increases with speed.</p> | <p> Research<br/><b>Lesson 3: (Space Step 3-4)</b><br/><b>LQ: Can I describe the movement of the Earth, and other planets?</b><br/>S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.<br/>K: The Solar System is a collection of celestial bodies, including the planets, moons and the Sun.<br/>Earth and the other planets orbit the Sun.<br/>Scientific models are representations of ideas or processes.<br/>Models can be created in different ways to represent the Solar System.<br/>The Sun is the largest object in the Solar System and has the greatest gravitational pull. This keeps all the planets in orbit around the Sun.<br/>Earth takes about 365 days, or one year, to complete one full orbit.<br/>Other planets take different amounts of time to complete a full orbit around the Sun. This is relative to their distance from the Sun.</p> | <p> Comparative/fair testing<br/><b>Lesson 3: (Properties of Materials Step 3)</b><br/><b>LQ: Can I plan an investigation?</b><br/>S: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> | <p> Pattern-seeking<br/><b>Lesson 3: (Animals, including humans Step 3)</b><br/><b>LQ: Can I explain key milestones during adolescence and puberty?</b><br/>S: Explore ideas and raise different kinds of questions (non-statutory).<br/>K: Puberty is the process that prepares humans for reproduction.<br/>Hormones are chemicals that are released by your body during puberty which cause physical and emotional changes.<br/>Key changes that happen to females during puberty include the start of periods, growth of underarm and pubic hair, mood swings, spots and growth of breasts.<br/>Key changes that happen to males during puberty include growth of body hair, growth of the penis and testicles, spots, mood swings and deepening of the voice.</p> | <p> Observation over time<br/><b>Lesson 9: (Reproduction A Step 2)</b><br/><b>LQ: Can I describe the reproductive parts in plants?</b><br/>S: Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar charts and line graphs.<br/>K: The female part of a flowering plant is called the pistil, which consists of the stigma, style and ovary.<br/>The male part of a flowering plant is called the stamen, which consists of the anther and filament.<br/>The female sex cells in a plant are called ovules and are found in the ovary.<br/>The male sex cells in a plant are called pollen grains and are found on the anthers.</p> | <p> Identifying, grouping and classifying<br/><b>Lesson 3: (Reversible and irreversible changes Step 3)</b><br/><b>LQ: Can I explore the process of evaporation?</b><br/>S: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, and taking repeat readings when appropriate.<br/>K: Evaporation is the change of state from a liquid to a gas which happens slowly from the surface of a liquid.<br/>Evaporation can be used to separate a soluble solid from a liquid.</p> |

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|  | <p> Comparative/fair testing</p> <p><b>Lesson 4: (Forces Step 6-7)</b><br/><b>LQ: Can I identify the effects of water resistance?</b><br/>S: – Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.<br/>K: Water resistance is a type of friction force on an object moving through water. The greater the surface area of an object, the greater the water resistance. water resistance increases with speed.</p>                         | <p> Research</p> <p><b>Lesson 4: (Space Step 5)</b><br/><b>LQ: Can I research the scientific history of planets?</b><br/>S: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.<br/>K: Different scientists and mathematicians have contributed to our understanding of the Solar System over time. It was once thought that Earth was at the centre of the Solar System. Through scientific advances, we now know that the Sun is at the centre of the Solar System.</p>  | <p> Comparative/fair testing</p> <p><b>Lesson 4: (Properties of Materials Step 4)</b><br/><b>LQ: Can I explore which materials are the best insulators of heat?</b><br/>S.: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> | <p> Pattern-seeking</p> <p><b>Lesson 4: (Animals, including humans Step 4)</b><br/><b>LQ: Can I explain key changes that happen to humans during adulthood and old age?</b><br/>S.: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: A person is classed as an adult from age 18 onwards. A person is classed as an elderly adult from approximately 65. When a person enters adulthood, their rate of growth slows down and their body is fully developed. The human body gradually changes with age. For example, skin loses elasticity, resulting in wrinkles, bones may become weaker and height may decrease.</p> | <p> Observation over time</p> <p><b>Lesson 10: (Reproduction A Step 3)</b><br/><b>LQ: Can I explain the process of pollination?</b><br/>S.: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.<br/>K: Plants reproduce sexually through pollination. Pollination involves the transfer of pollen from the male anther of a flowering plant to the female stigma of a flowering plant. Pollen grains attach to the sticky stigma and travel down the style into the ovary. Fertilisation occurs when a male pollen grain joins with a female ovule inside an ovary.</p> | <p> Identifying, grouping and classifying</p> <p><b>Lesson 4: (Reversible and irreversible changes Step 4)</b><br/><b>LQ: Can I explore reversible changes?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).<br/>K: The three states of matter are solids, liquids and gases. Some changes can be reversed, such as dissolving, mixing and changes of state. Changes of state include freezing, melting, evaporation and condensation. If you can retrieve the substances that you started with, then the change is reversible.</p>                     |
|  | <p> Comparative/fair testing</p> <p><b>Lesson 5: (Forces Step 8)</b><br/><b>LQ: Can I Explain that unsupported objects fall towards the Earth because of gravity.</b><br/>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: Gravity is non-contact force. Gravity is a non-contact force caused by objects with mass pulling each other. Heavier objects do not fall to the ground faster than lighter objects. Objects with a different mass fall at the same rate.</p> | <p> Research</p> <p><b>Lesson 5: (Space Step 6-7)</b><br/><b>LQ: Can I explain the impact of Earth’s rotation on the planet?</b><br/>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: Earth’s axis is an imaginary line that runs from the North to the South Pole. Earth rotates once around its axis in a 24-hour period. Earth is the only planet known to support plant and animal life. The four seasons occur on planet Earth because Earth’s axis is tilted. Earth rotates around its axis. It takes 24 hours for Earth to rotate around its axis and complete one full rotation. This is why one day is 24 hours long. It is day on the part of Earth that faces the Sun. It is night on the part of Earth that faces away from the Sun</p> | <p> Comparative/fair testing</p> <p><b>Lesson 5: (Properties of Materials Step 5)</b><br/><b>LQ: Can I analyse and evaluate results?</b><br/>S.: Using test results to make predictions to set up further comparative and fair tests.</p>  | <p> Pattern-seeking</p> <p><b>Lesson 5: (Animals, including humans Step 5)</b><br/><b>LQ: Can I explore gestation periods of mammals?</b><br/>S.: recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.<br/>K: Humans are mammals because they are warm blooded, give birth to live young and feed their offspring on milk. Gestation is the period of time that a foetus develops in its mother’s womb. Mammals have different gestation periods. The gestation period of a human is approximately nine months.</p>   | <p> Observation over time</p> <p><b>Lesson 11: (Reproduction A Step 4)</b><br/><b>LQ: Can I describe asexual reproduction?</b><br/>S.: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: Asexual reproduction involves only one parent. Offspring produced by asexual reproduction are identical to the parent. Some plants reproduce asexually by producing new plants at the end of runners or by producing bulbs or tubers. A starfish is an example of an animal that reproduces asexually.</p>  | <p> Identifying, grouping and classifying</p> <p><b>Lesson 5: (Reversible and irreversible changes Step 5)</b><br/><b>LQ: Can I explain that some changes result in the formation of new materials? (burning)</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).<br/>K: An irreversible change is when a change cannot be undone to get the same substances back again. Irreversible changes result in new substances being made. When a new substance is made, a chemical reaction has taken place. Burning is an example of an irreversible change.</p> |


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|           | <p><b>Lesson 6: (Forces Step 9)</b><br/><b>LQ: Can I recognise that some mechanisms allow a smaller force to have a greater effect?</b><br/>S: Recognise which secondary sources will be most useful to research their ideas (non-statutory).<br/>K: Levers, pulleys and gears are all mechanisms that will allow a smaller force to have a greater effect. Gears are wheels with teeth that allow a small force to produce a larger force to increase speed. A lever is a mechanism that allows movement of heavy objects. Pulleys use a rope or cable through a wheel to allow lifting of heavy objects.</p> | <p><b>Lesson 6: (Space Step 8)</b><br/><b>LQ: Can I Describe the movement of the Moon relative to the Earth?</b><br/>S: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.<br/>K: Earth has one moon, which takes approximately 27 days to orbit Earth. Without Earth's gravitational pull, the Moon would float into space. The Moon is not a light source. It reflects light from the Sun. Light from the Sun is reflected from the Moon onto Earth.</p> | <p><b>Lesson 6: (Properties of Materials Step 6)</b><br/><b>LQ: Can I explain the properties of different materials?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).<br/>K: Materials have specific uses. Metals are good conductors of electricity and heat. Plastics are good insulators of electricity.</p>  | <p><b>Lesson 6: (Animals, including humans Step 6)</b><br/><b>LQ: Can I explore the relationship between gestation periods and life span?</b><br/>S: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.<br/>K: The lifespan of an animal is how long the animal is alive. Usually, the longer the gestation period of an animal, the longer the lifespan. Humans have a relatively short gestation period compared to their lifespan.</p> | <p><b>Lesson 12: (Reproduction A Step 5)</b><br/><b>LQ: Can I plan a plant reproduction investigation? (needs to be followed up a few weeks later for results)</b><br/>S: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>  | <p><b>Lesson 6: (Reversible and irreversible changes Step 6)</b><br/><b>LQ: Can I explain that some changes result in the formation of new materials? (acid)</b><br/>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: Irreversible changes (such as burning and reactions with acids) cannot be reversed, and they result in new substances being made. When a new substance is made, a chemical reaction has taken place. When a substance fizzes, a gas has been made.</p> |
| Challenge | <p><b>Lesson 1</b><br/>Explain the importance of friction in real life situations.</p> <p><b>Lesson 2</b><br/>Explain prediction in terms of air resistance.</p> <p><b>Lesson 3</b><br/>Design a table for recording data.</p> <p><b>Lesson 4</b><br/>Independently write a conclusion based on water resistance knowledge.</p> <p><b>Lesson 5</b><br/>Evaluate whether investigation was a 'fair test'.</p> <p><b>Lesson 6</b><br/>Explain the benefits of different mechanisms.</p>  | <p><b>Lesson 1</b><br/>Enquiry research in pairs to create a number of different true or false statements about the Solar System.</p> <p><b>Lesson 2</b><br/>Look for patterns in the first four planets from the Sun and the last four planets from the Sun regarding surface, appearance, temperature and distance from the Sun.</p> <p><b>Lesson 3</b><br/>Explain the heliocentric model.</p> <p><b>Lesson 4</b><br/>Choose a scientist to research, and present findings.</p> <p><b>Lesson 5</b><br/>Evaluate different models showing day and night on</p>  | <p><b>Lesson 1</b><br/>Group the coins based on whether or not they are attracted to a magnet.</p> <p><b>Lesson 2</b><br/>To predict whether the material will be an insulator or a conductor of electricity before each test.</p> <p><b>Lesson 3</b><br/>Write a method for the investigation.</p> <p><b>Lesson 4</b><br/>Explain the findings within the investigation.</p> <p><b>Lesson 5</b><br/>Create a plan for another investigation</p> <p><b>Lesson 6</b></p> | <p><b>Lesson 1</b><br/>Research the main changes that occur within a particular life stage.</p> <p><b>Lesson 2</b><br/>Plot data on a graph</p> <p><b>Lesson 3</b><br/>Match key vocab to into definition – reproduce, period, hormone, puberty.</p> <p><b>Lesson 4</b><br/>Investigate whether there are any links between age and height.</p> <p><b>Lesson 5</b><br/>Identify any patterns between size of animals and their gestation periods.</p> <p><b>Lesson 6</b></p>   | <p><b>Lesson 7</b><br/>Create life cycles poster for 4 animal groups.</p> <p><b>Lesson 8</b><br/>Describe what is happening at each stage.</p> <p><b>Lesson 9</b><br/>Write a description of the function of each reproductive part on cards and use the cards to label their dissection.</p> <p><b>Lesson 10</b><br/>Write an explanation of pollination.</p> <p><b>Lesson 11</b><br/>Discuss whether they are for or against the cloning of animals.</p> <p><b>Lesson 12</b><br/>Draw scientific diagram on</p> | <p><b>Lesson 1</b><br/>Reasoning questions.</p> <p><b>Lesson 2</b><br/>Predict what other mixtures could be sieved and filtered.</p> <p><b>Lesson 3</b><br/>Write an evaluation of investigation.</p> <p><b>Lesson 4</b><br/>Evaporating, melting and dissolving are all reversible changes. Explain why these three processes are reversible changes.</p> <p><b>Lesson 5</b><br/>Explain the difference between heating water and burning a piece of toast.</p> <p><b>Lesson 6</b></p>   |

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|                           |  | planet.<br><b>Lesson 6</b><br>Add to presentation - how long it takes to orbit Earth and why.  | Think about when these materials would be suitable or unsuitable for a particular purpose.  | Use secondary sources to research the gestation period and lifespan of other mammals.  | plant cuttings.   | Explain what happened.   |
| <b>Suggested Outcomes</b> | <p><b>Lesson 1</b><br/>Recognise where friction is needed in real life situations.</p> <p><b>Lesson 2</b><br/>Make a prediction.</p> <p><b>Lesson 3</b><br/>Plan and carry out a fair test.</p> <p><b>Lesson 4</b><br/>Plan and carry out a fair test.</p> <p><b>Lesson 5</b><br/>Write results and conclusions.</p> <p><b>Lesson 6</b><br/>Define different types of mechanism.</p> | <p><b>Lesson 1</b><br/>Create a mnemonic the remember order of planets.</p> <p><b>Lesson 2</b><br/>Use secondary sources to research facts about their planet, such as its appearance, surface, temperature and how far it is from the Sun.</p> <p><b>Lesson 3</b><br/>Interpret information about planets from a table.</p> <p><b>Lesson 4</b><br/>Create a timeline showing how scientists and mathematicians have contributed to the changes in ideas about the Solar System.</p> <p><b>Lesson 5</b><br/>Explain how Earth's rotation causes day and night and how tilt causes seasons.</p> <p><b>Lesson 6</b><br/>Create a presentation about the Moon, describing what it is, its features.</p> | <p><b>Lesson 1</b><br/>Test the coins with a magnet to see which are magnetic.</p> <p><b>Lesson 2</b><br/>Build a series circuit to test whether the different materials can conduct electricity or not.</p> <p><b>Lesson 3</b><br/>Plan an investigation focusing on prediction and independent and dependent variables.</p> <p><b>Lesson 4</b><br/>Accurately record results.</p> <p><b>Lesson 5</b><br/>Write an evaluation compared to prediction.</p> <p><b>Lesson 6</b><br/>Test the properties of different materials. Apply their previous knowledge to sort the materials.</p> | <p><b>Lesson 1</b><br/>Create a whole-class timeline using photos of children, staff and parents/carers, with permission. Discuss key features of each life stage by observing photos.</p> <p><b>Lesson 2</b><br/>Accurately measure the children in the class and year 3 class.</p> <p><b>Lesson 3</b><br/>Sort changes during puberty into a Venn diagram – male/female/both.</p> <p><b>Lesson 4</b><br/>Make a list of the key differences between adults and elderly adults.</p> <p><b>Lesson 5</b><br/>Plot information in a graph with mammals and their gestation periods.</p> <p><b>Lesson 6</b><br/>Predict the lifespans of the animals using their gestation periods. Then they can put the animals in order from shortest to longest lifespan.</p> | <p><b>Lesson 7</b><br/>Research life cycles of different animal types and present information-birds, mammals, amphibians and insects.</p> <p><b>Lesson 8</b><br/>Cards with pictures of the key stages, including the embryo, the formation of a foetus at 8 weeks and a full-term baby. Arrange cards into the correct order.</p> <p><b>Lesson 9</b><br/>Identify the different reproductive parts of a flowering plant grouping the male and female parts.</p> <p><b>Lesson 10</b><br/>Answer true or false statements about pollination.</p> <p><b>Lesson 11</b><br/>Provide children with images of bulbs, runners, flower parts and tubers to group into sexual and asexual reproductive mechanisms.</p> <p><b>Lesson 12</b><br/>Write a prediction.</p> | <p><b>Lesson 1</b><br/>Record results of investigation on a table.</p> <p><b>Lesson 2</b><br/>Discuss the ways that the different mixtures can be separated and which method was more successful for each mixture.</p> <p><b>Lesson 3</b><br/>Predict whether the salt can be separated from the water.</p> <p><b>Lesson 4</b><br/>Explain how water changes state.</p> <p><b>Lesson 5</b><br/>Sort changes into reversible and irreversible.</p> <p><b>Lesson 6</b><br/>Draw observations of vinegar and bicarbonate of soda.</p> |
|                           | independent variable, dependent variable, controlled variable, precision, repeatability, air resistance, gravity, water resistance, friction, force, drag  | Solar System, orbit, Sun, planets, Pluto, celestial body, gravity, heliocentric model, geocentric model, rotate, axis, North Pole, South Pole, Earth, night, day, moon, gravitational force, satellite   | foetus, elderly adult, milestone, womb, period, reproduce, hormone, puberty, life expectancy, gestation period, gestation   |  | dissolve, soluble, insoluble, solution, mixture, reversible changes, reverse, chemical reaction, irreversible change, burning, heating, vinegar, bicarbonate of soda  | electrical conductor, electrical insulator, thermal insulator, properties, lifespan,   |

| Year 6                     | Cycle 1a<br>[01/09/25 – 06/10/25]  | Cycle 1b<br>[13/10/25 – 24/11/25]  | Cycle 2a<br>[01/12/25 – 19/01/26]   | Cycle 2b<br>[06/01/26 – 16/03/26]  | Cycle 3a<br>[23/03/26 – 18/05/26]  | Cycle 3b<br>[01/06/26 – 06/07/26]   |
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| <b>Theme</b>               | <b>Living things and their habitats</b>  | <b>Electricity</b>   | <b>Light</b>  | <b>Animals, including Humans</b>   |  | <b>Evolution and inheritance</b>  |
| <b>Content</b>             | Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.  | Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.   | Recognise that light travels in straight lines<br>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye<br>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes<br>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them | Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood<br>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function<br>Describe the ways in which nutrients and water are transported within animals, including humans  |  | Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago<br>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents<br>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution |
| <b>Prior Knowledge</b>     | Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird<br>Describe the life process of reproduction in some plants and animals  | Identify common appliances that run on electricity.<br>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.<br>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.<br>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.<br>Recognise some common conductors and insulators, and associate metals with being good conductors. | Recognise that they need light in order to see things and that dark is the absence of light<br>Notice that light is reflected from surfaces<br>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes<br>Recognise that shadows are formed when the light from a light source is blocked by an opaque object<br>Find patterns in the way that the size of shadows change  | Describe the changes as humans develop to old age<br>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird<br>Describe the life process of reproduction in some plants and animals   |  |   |
| <b>Sequence of Lessons</b> |  <p><b>Lesson 1: (Living Things and their Habitats Step 1)</b><br/><b>LQ: Can I explain the conditions for life?</b><br/>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: A living organism moves, reproduces, grows and excretes. The stem of a plant moves towards the strongest light</p> |  <p><b>Lesson 1: (Electricity Step 1)</b><br/><b>LQ: Can I use symbols in a simple circuit diagram?</b><br/>S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.<br/>K: A series circuit is one in which all the components are</p>  |  <p><b>Lesson 1: (Light Step 1)</b><br/><b>LQ: Can I explain how we see things?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory)<br/>K: Luminous objects emit light and non-luminous objects do not</p>  |  <p><b>Lesson 1: (The circulatory system Step 1)</b><br/><b>LQ: Can I identify and name the main parts of the human circulatory system?</b><br/>S: Explore ideas and raise different kinds of questions (non-statutory).<br/>K: The circulatory system moves blood around the body.</p> |  <p><b>Lesson 1: (Diet, drugs and lifestyle Step 1)</b><br/><b>LQ: Can I recognise the impact of diet on body functions?</b><br/>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: A balanced diet is made up of the right amounts of</p> |  <p><b>Lesson 1: (Variation Step 1-2)</b><br/><b>LQ: Can I explain inheritance and variation?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).<br/>K: An organism is a living thing such as an animal, plant, bacterium or fungus.</p>                    |

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|  | <p>source and the roots move away from light.<br/>Plants can reproduce sexually and asexually</p>   | <p>connected in one continuous loop.<br/>A series circuit has a cell and wires, plus components such as a bulb, a buzzer and a switch. Each component in a circuit diagram is represented by a circuit symbol.<br/>Current is the flow of electricity in a circuit.<br/>Voltage causes the current to flow.</p>   | <p>emit light.<br/>Humans can see objects because a light source produces light. Light reflects from an object to the eye.<br/>Light passes through the pupil to the retina.</p>  | <p>It is made up of the heart, blood vessels and blood.<br/>The blood vessels that move blood towards the heart are called veins.<br/>The blood vessels that move blood away from the heart are called arteries.<br/>Capillaries are small blood vessels that link veins and arteries together.</p>   | <p>carbohydrates, fats, proteins, vitamins, minerals, fibre and water.<br/>Fats can be classified as unsaturated, saturated or trans fats.<br/>Unsaturated fats provide the body with energy and allow humans to absorb some vitamins.<br/>Saturated and trans fats can cause weight gain and heart disease.</p>   | <p>A species is a group of similar organisms where two parents can create offspring.<br/>Variation is the differences between organisms.<br/>All species show variation.<br/>Characteristics are the features of an organism, used to identify individuals or a group.<br/>Parents pass on characteristics to their offspring such as hair and eye colour. This process is called inheritance.<br/>Humans can breed animals such as dogs for desirable characteristics.</p>   |
|  | <p> <b>Lesson 2: (Living Things and their Habitats Step 2)</b><br/><b>LQ: Can I describe how living things are classified into broad groups?</b><br/>S: Use and develop keys and other information records to identify, classify and describe living things (non-statutory).<br/>K: Vertebrates can be put into groups of mammals, birds, fish, amphibians and reptiles.<br/>Plants can be put into groups of flowering and non-flowering. Scientists group organisms based on their features.<br/>Grouping organisms can help scientists to understand how organisms are related to each other.</p> | <p> <b>Lesson 2: (Electricity Step 2)</b><br/><b>LQ: Can I explain why a circuit might be incomplete?</b><br/>S: Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.<br/>K: For a circuit to be complete, all the components, including a cell, must be connected by wires and the switch must be closed. An incomplete circuit may have a break in the wires, a switch may be open or the cell may be in the holder the wrong way. The current does not flow at all in an incomplete circuit.</p> | <p> <b>Lesson 2: (Light Step 2)</b><br/><b>LQ: Can I explain how objects are seen?</b><br/>S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.<br/>K: Light travels in straight lines. Light travels from a light source to an object.<br/>The light rays reflect from the object to the eye.<br/>A reflection is where light rays bounce off an object</p> | <p> <b>Lesson 2: (The circulatory system Step 2)</b><br/><b>LQ: Can I describe how nutrients and water are transported within animals?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).<br/>K: Blood transports nutrients and oxygen to all parts of the body, and takes waste, such as carbon dioxide, away.<br/>Nutrients are carried in the plasma to provide the nourishment cells need to repair themselves and grow.<br/>Oxygen is carried in red blood cells from the lungs to all cells in our body.<br/>White blood cells help to fight bacteria and viruses in our body to prevent illness.</p> | <p> <b>Lesson 2: (Diet, drugs and lifestyle Step 2)</b><br/><b>LQ: Can I recognise the impact of drugs on body functions?</b><br/>S: Recognise which secondary sources will be most useful to research their ideas and begin the separate opinion from fact (non-statutory).<br/>K: A drug is a chemical that can change the way your body or brain functions.<br/>Painkillers help the body to dull pain.<br/>Stimulants make a person feel more alert and awake.<br/>Depressants make the body feel calm and drowsy.<br/>Some drugs are legal and some are illegal.</p> | <p> <b>Lesson 2: (Adaptations Step 1-2)</b><br/><b>LQ: Can I identify how animals and plants are adapted to suit their environment?</b><br/>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: Adaptations are characteristics which improve an animal's chances of survival in a habitat. Animals in cold environments have characteristics which allow them to survive. For example, they may have thick fur or blubber.<br/>Animals in desert environments have characteristics which allow them to survive in extreme heat. Some of these include thin fur and long eyelashes.<br/>Adaptations are characteristics which improve the chances of survival in a habitat.<br/>Plants in desert environments have longer roots and larger stems, so they can absorb and store more water. This allows them to survive in hot, dry environments such as deserts, where there is not much water available</p> |

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|  | <p> <b>Lesson 3: (Living Things and their Habitats Step 3-4)</b><br/><b>LQ: Can I classify plants and animals based on specific characteristics?</b><br/>S: Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment (nonstatutory).<br/>K: Classification keys are used to classify animals. Classification keys are used to identify different animals based on their features. Classification keys are made up of several questions with “yes” or “no” answers. Classification keys are used to classify plants. Classification keys are used to identify different plants based on their features. Trees can be classified as deciduous, evergreen and coniferous.</p> | <p> <b>Lesson 3: (Electricity Step 3)</b><br/><b>LQ: Can I compare and give reasons for variations in how components function?</b><br/>S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs<br/>K: For a circuit to be complete, all the components, including a cell, must be connected by wires and the switch must be closed. An incomplete circuit may have a break in the wires, a switch may be open or the cell may be in the holder the wrong way. The current does not flow at all in an incomplete circuit.</p> | <p> <b>Lesson 3: (Light Step 3)</b><br/><b>LQ: Can I determine how shadows are formed?</b><br/>S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.<br/>K: Light travels in straight lines. When light rays from a light source travel to an opaque object, they cannot pass through and a shadow is formed. The blocked light rays create an area of darkness behind the object, which is the shadow. The shape of a shadow is determined by the shape of the object that blocks the light. Shadows are always dark because they are areas from which light has been blocked.</p> | <p> <b>Lesson 3: (The circulatory system Step 3)</b><br/><b>LQ: Can I explain the function of the heart?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory)<br/>K: The heart is part of the circulatory system. The heart is a muscle which beats regularly. As the heart beats, it pumps blood around the body. The heart is split into four chambers. It has two atria and two ventricles.</p>   | <p> <b>Lesson 3: (Diet, drugs and lifestyle Step 3)</b><br/><b>LQ: Can I recognise the impact of cigarettes on body functions?</b><br/>S: Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact (non-statutory).<br/>K: Cigarettes contain tar, nicotine and other harmful substances. Tar is a sticky, brown substance which can cause cancer. Nicotine is highly addictive. Carbon monoxide is a poisonous gas that stops the blood carrying as much oxygen. Smoking can damage the body and cause breathing problems. It also increases the risks of heart and lung disease.</p> | <p> <b>Lesson 3: (Adaptations Step 3-4)</b><br/><b>LQ: Can I explain Charles Darwin’s findings on evolution?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time (non-statutory).<br/>K: Evolution is a change in characteristics in animals and plants over a long period of time. Evolution allows animals and plants to better adapt to their environments or habitats so that they can survive. Evolution explains how animals and plants have developed over time from simpler life forms that lived millions of years ago. Charles Darwin suggested the ‘Theory of Evolution’. Darwin suggested that different species of animals had evolved from a shared ancestor. Darwin also suggested that organisms change their characteristics over a long period of time, so that they can successfully adapt to their environment or habitat.</p> |
|  | <p> <b>Lesson 4: (Living Things and their Habitats Step 5)</b><br/><b>LQ: Can I describe how micro-organisms are grouped?</b><br/>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: Bacteria are simple organisms invisible to the naked eye. Some bacteria can cause diseases and infections. Humans have good bacteria in their bodies that help to digest food. Viruses are microorganisms that need a host, and are invisible to the naked eye. They can cause diseases such as flu or a</p>  | <p> <b>Lesson 4: (Electricity Step 4)</b><br/><b>LQ: Can I plan a voltage experiment?</b><br/>S: planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p>   | <p> <b>Lesson 4: (Light Step 4-5)</b><br/><b>LQ: Can I explore the effect of light on shadows?</b><br/>S: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>   | <p> <b>Lesson 4: (The circulatory system Step 4)</b><br/><b>LQ: Can I explain how blood flows through the body?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).<br/>K: Blood flows through the heart as part of its journey through the circulatory system. Veins carry blood towards the heart. They have valves to stop the blood flowing in the wrong direction. Blood then flows through the right atrium, then out of the right ventricle to the lungs.</p> | <p> <b>Lesson 4: (Diet, drugs and lifestyle Step 4)</b><br/><b>LQ: Can I plan a heart reate experiment?</b><br/>S: planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>   | <p> <b>Lesson 4: (Adaptations Step 5)</b><br/><b>LQ: Can I explain natural selection?</b><br/>S: Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact (non-statutory).<br/>K: Organisms have adapted over time to improve their chances of survival in a habitat. Organisms which are better adapted to their habitat are more likely to survive and reproduce. The characteristics that have enabled these individuals to survive are passed on to the next generation. This theory is called</p>   |

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|  | <p>common cold.<br/>Fungi are microorganisms.<br/>Some can cause infections.<br/>Some can be used in bread making.</p>  |  |  | <p>Blood from the lungs then flows into the left atrium and out of the left ventricle towards the rest of the body.</p>  |  | <p>“natural selection”.</p>   |
|  | <p> <b>Lesson 5: (Living Things and their Habitats Step 6)</b><br/><b>LQ: Can I classify micro-organisms into groups?</b><br/>S: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.<br/>K: Microorganisms, such as bacteria, viruses and fungi, can be classified.<br/>The classification of microorganisms is based on their features, such as shape. Bacteria, viruses and fungi have different shapes.</p> | <p> <b>Lesson 5: (Electricity Step 5)</b><br/><b>LQ: Can I carry out a voltage experiment?</b><br/>S: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> | <p> <b>Lesson 5: (Light Step 5-6)</b><br/><b>LQ: Can I explore the effect of light on shadows?</b><br/>S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>   | <p> <b>Lesson 5: (The circulatory system Step 5)</b><br/><b>LQ: Can I define oxygenated and deoxygenated blood?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).<br/>K: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).</p>   | <p> <b>Lesson 5: (Diet, drugs and lifestyle Step 5)</b><br/><b>LQ: Can I carry out a heart rate experiment?</b><br/>S: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> | <p> <b>Lesson 5: (Adaptations Step 6)</b><br/><b>LQ: Can I investigate natural selection?</b><br/>S: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.<br/>K: Darwin noticed that different finch species on the islands were closely related, but showed variations in beak type and body size. Some of the islands have a lot of plants which produce hard seeds and nuts. The differences in size and shape of the beaks meant that different species were well adapted to eating different foods, such as seeds, insects, flowers and fruits. Finches with long and pointed beaks catch and eat insects, while those with broad, short beaks crack seeds and nuts.</p> |
|  | <p> <b>Lesson 6: (Living Things and their Habitats Step 7)</b><br/><b>LQ: Can I explain how Carl Linnaeus helped us to group and name animals and plants?</b><br/>S: Use relevant scientific language and illustrations to discuss, communicate and justify their ideas and should talk about how scientific ideas have developed over time (non-statutory).<br/>K: Carl Linnaeus was a Swedish botanist who wrote a book called Systema Naturae or System of Nature.<br/>Linnaeus was famous for developing the first system to</p>   | <p> <b>Lesson 6: (Electricity Step 6)</b><br/><b>LQ: Can I evaluate a voltage experiment?</b><br/>S: Using test results to make predictions to set up further comparative and fair tests.</p>  | <p> <b>Lesson 6: (Light Step 7-8)</b><br/><b>LQ: Can I recognise that light appears to travel in straight lines?</b><br/>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: Light travels in straight lines. When light passes from one medium to another, it can change direction. This is called refraction.<br/>Refraction happens because light travels at different speeds in different substances.<br/>A pencil looks bent when it is put into water, because light travels at a different speed in water than it does in the air.</p> | <p> <b>Lesson 6: (The circulatory system Step 6)</b><br/><b>LQ: Can I explore the heart’s chambers?</b><br/>S: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.<br/>K: The left ventricle is thicker than the right ventricle because moving blood around the whole body requires more force than moving blood to the lungs.</p> | <p> <b>Lesson 6: (Diet, drugs and lifestyle Step 6)</b><br/><b>LQ: Can I evaluate a heart rate experiment?</b><br/>S: Using test results to make predictions to set up further comparative and fair tests.</p>  | <p> <b>Lesson 6: (Fossils Step 1-3)</b><br/><b>LQ: Can I recognise how fossils provide information about living things?</b><br/>S: Identifying scientific evidence that has been used to support or refute ideas or arguments.<br/>K: Fossils form when dead plants or animals have their soft parts decay, leaving the skeleton, which gets buried by sediment. Over time, water with minerals replaces the skeleton, creating a rock imprint. Older fossils are simpler, while newer ones are more complex, supporting Darwin’s theory that life evolved from simple to complex forms.</p>   |

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|                                  | <p>classify animals and plants. The classification was based on a hierarchical system. Linnaeus initially divided the Kingdom Animalia into six classes. These were mammals, birds, amphibians, fish, insects and worms.</p>  |  | <p>White light is composed of mixture of colours. Isaac Newton and Ibn al-Haytham discovered that white light is made up of different colours. A rainbow is a spectrum of light formed when sunlight passes through, and is refracted by, raindrops.</p>  |  |   | <p>Mary Anning, a famous 1800s palaeontologist, found many important fossils like plesiosaurs and ichthyosaurs, but her work was often credited to men because she was a woman.</p>  |
| <p><b>Challenge</b></p>          | <p><b>Lesson 1</b><br/>Create a “true or false” quiz on the conditions for life.</p> <p><b>Lesson 2</b><br/>Write about similarities and differences in different animals.</p> <p><b>Lesson 3</b><br/>Write questions that they could use to separate the plants and classify them.</p> <p><b>Lesson 4</b><br/>Reasoning questions.</p> <p><b>Lesson 5</b><br/>Reasoning questions.</p> <p><b>Lesson 6</b><br/>Create a newspaper article on Carl Linnaeus.</p> | <p><b>Lesson 1</b><br/>Compare their circuit diagrams with other groups.</p> <p><b>Lesson 2</b><br/>Record whether the circuits are complete or incomplete and give reasons why.</p> <p><b>Lesson 3</b><br/>Reasoning questions.</p> <p><b>Lesson 4</b><br/>Plan an enquiry- independently writing variables.</p> <p><b>Lesson 5</b><br/>Compare results.</p> <p><b>Lesson 6</b><br/>Research using secondary sources to explore how to make their own battery from fruit or vegetables.</p> | <p><b>Lesson 1</b><br/>Explain what happens to the eye in light and dark.</p> <p><b>Lesson 2</b><br/>Explain how light reflects and the use of this in a periscope.</p> <p><b>Lesson 3</b><br/>Explain why shadows get bigger and smaller depending on light.</p> <p><b>Lesson 4</b><br/>Draw a scientific diagram of how to set up the experiment.</p> <p><b>Lesson 5</b><br/>Use the data to write a conclusion.</p> <p><b>Lesson 6</b><br/>Explain how the scientific discoveries contributed to modern-day science.</p> | <p><b>Lesson 1</b><br/>Describe the function of the different blood vessels.</p> <p><b>Lesson 2</b><br/>Describe the function of each part of the blood you have labelled in your diagram.</p> <p><b>Lesson 3</b><br/>Reasoning questions</p> <p><b>Lesson 4</b><br/>Explain how blood only flows in one direction.</p> <p><b>Lesson 5</b><br/>Reasoning questions.</p> <p><b>Lesson 6</b><br/>Explain why they think oxygenated blood out of heart requires more muscles.</p> | <p><b>Lesson 1</b><br/>Create a nutritionally balanced meal plan ensuring correct calories, vitamins and minerals.</p> <p><b>Lesson 2</b><br/>Research different types of drugs and effects on body (ensure secondary sources are age appropriate).</p> <p><b>Lesson 3</b><br/>Research how cigarettes/vapes affect different parts of the body.</p> <p><b>Lesson 4</b><br/>Convert measures of time between seconds and minutes.</p> <p><b>Lesson 5</b><br/>Explain what they notice in their results.</p> <p><b>Lesson 6</b><br/>Explain importance of repeating tests.</p> | <p><b>Lesson 1</b><br/>Complete diagram to show how dogs inherit characteristics.</p> <p><b>Lesson 2</b><br/>Create “Which animal am I?” game.</p> <p><b>Lesson 3</b><br/>Explain how Charles Darwin’s work has influenced modern-day science.</p> <p><b>Lesson 4</b><br/>Research natural selection in animals such peppered moths.</p> <p><b>Lesson 5</b><br/>Explain how the theory of evolution applies to the theory of finches.</p> <p><b>Lesson 6</b><br/>Research Mary Anning and create a timeline of her life.</p> |
| <p><b>Suggested Outcomes</b></p> | <p><b>Lesson 1</b><br/>Group living and non-living things.</p> <p><b>Lesson 2</b><br/>Group flowering and non-flowering plants.</p> <p><b>Lesson 3</b><br/>Create classification key.</p> <p><b>Lesson 4</b><br/>Writing the names of the illnesses caused by either bacteria, viruses or fungi.</p> <p><b>Lesson 5</b><br/>Play and create “What organism am I?” game.</p>   | <p><b>Lesson 1</b><br/>Draw the different circuits that they have made using the correct symbols for each component.</p> <p><b>Lesson 2</b><br/>Draw the complete and incomplete circuits using pencils and rulers.</p> <p><b>Lesson 3</b><br/>WR sheet – make observations</p> <p><b>Lesson 4</b><br/>Plan an enquiry – independently write a prediction.</p>   | <p><b>Lesson 1</b><br/>Categorise objects as light sources (luminous) or not light sources (non-luminous). Label parts of the eye.</p> <p><b>Lesson 2</b><br/>Draw a light ray diagram.</p> <p><b>Lesson 3</b><br/>Accurately record data on a table.</p> <p><b>Lesson 4</b><br/>Plan a scientific enquiry focusing on writing a scientific prediction.</p> <p><b>Lesson 5</b><br/>Plot data on a line graph.</p>   | <p><b>Lesson 1</b><br/>Label a diagram of the blood vessels.</p> <p><b>Lesson 2</b><br/>Draw and label a diagram showing the contents of the blood.</p> <p><b>Lesson 3</b><br/>Write an explanation about the function of the heart.</p> <p><b>Lesson 4</b><br/>Label 4 chambers of the heart and draw and label blood flow through it.</p> <p><b>Lesson 5</b></p>   | <p><b>Lesson 1</b><br/>Research foods that can be classified as unsaturated, saturated or trans fats.</p> <p><b>Lesson 2</b><br/>Group items into painkillers and stimulants and provide reasons.</p> <p><b>Lesson 3</b><br/>Use secondary sources to research the composition of cigarettes and to look at the effects on the body.</p> <p><b>Lesson 4</b><br/>Complete table to show variables in the experiment.</p>   | <p><b>Lesson 1</b><br/>Research dog cross-breeds. Explain how they were developed, what characteristics they have inherited and why.</p> <p><b>Lesson 2</b><br/>Research and describe the habitat of a given animal and explain the animal’s adaptations.</p> <p><b>Lesson 3</b><br/>Use secondary sources to research the life and work of Charles Darwin.</p> <p><b>Lesson 4</b><br/>Create a presentation to explain neck lengths in giraffes and how</p>   |



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|                       | <p><b>Lesson 6</b><br/>Create a timeline of Carl Linnaeus's life.</p>  | <p><b>Lesson 5</b><br/>Record results on a table.</p> <p><b>Lesson 6</b><br/>Test whether the size of the cell affects the brightness of bulbs or the loudness of buzzers.</p> | <p><b>Lesson 6</b><br/>Research different scientific discoveries about light: Isaac Newton and Ibn al-Haytham.</p>            | <p>Explain process of oxygenated and deoxygenated blood in the circulatory system.</p> <p><b>Lesson 6</b><br/>Write what they notice in the dissected heart.</p>   | <p><b>Lesson 5</b><br/>Accurately record results in a table.</p> <p><b>Lesson 6</b><br/>Plan another investigation to check accuracy of results.</p> | <p>they have evolved by natural selection.</p> <p><b>Lesson 5</b><br/>Record results on a table.</p> <p><b>Lesson 6</b><br/>Make observational drawings of 2 fossils identifying the similarities and differences.</p> |
| <b>Key Vocabulary</b> | classification, characteristic, vertebrate, invertebrate, organism, microscope, bacteria, fungi, virus, bacteria | series circuit, voltage, current, complete circuit, incomplete circuit, cell, battery, bulb, current, switch, buzzer, variables, repeatability                                 | retina, iris, pupil, lens, ray diagram, solar eclipse, refraction, medium, rainbow, prism, coloured filter, spectrum of light | circulatory system, blood vessels, arteries, veins, capillaries, red blood cells, white blood cells, lungs, plasma, oxygen, atria, ventricles, right atrium, left atrium, right ventricle, left ventricle, oxygenated blood, deoxygenated blood, calories, saturated fats, unsaturated fats, trans fats, drug, painkiller, depressant, stimulant, cigarette, tar, nicotine, vape, carbon monoxide, addiction, heart rate | variation, species, inheritance, desirable characteristics, polar habitat, desert habitat, adaptations, evolution, common ancestor, natural          | selection, finch, Galapagos Islands, decompose, Charles Darwin, palaeontology, Mary Anning   |