

Science LTP 22-23	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1 SHORT	Summer 2
1	Seasonal Changes (Autumn focus)	Animals Including Humans  (Naming Animals and Body Parts)	Everyday Materials	Materials contd  Seasonal change (revisit)	Plants  (Names and Structure of plants)	Seasonal Change (Summer focus)  Light (Sources & exploratory unit)
2	Living Things and their Habitats (Suitable habitats. Simple Food Chains)	Animals Including Humans  (Health and Growth)	Uses of everyday Materials (Includes physical changes: squash, bend, etc)	Forces (exploratory unit)	'Working Scientifically'	Plants (Conditions for Growing)
3	Animals including Humans	Light	Forces (Friction, Magnets)	Rocks (Including fossil formation)	'Working Scientifically'	Plants (Requirements for growth, function of parts, life cycle)
4	Living Things and their habitats  (Grouping, classifying, changes to habitats,	Animals Including Humans  (Health, teeth, digestion)	Sound	Electricity	'Working Scientifically'	States of Matter
5	Earth and Space	Properties and changes in Materials	Forces (Gravity, Friction, Air resistance, Levers, pulleys)	Forces Contd	Living Things and Their Habitats (Life Cycles)	Animals including Humans (Human Growth)
6	Living Things and their Habitats → (Classifying, Including Microorganisms)	Living things and their habitats contd.	...Evolution and inheritance contd.	Animals inc humans (Circulation)	Electricity	Light

		Evolution and Inheritance->	Animals inc Humans (Health and circulation)			
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<p>The national curriculum for science aims to ensure that all pupils:</p> <ul style="list-style-type: none"> <li>• develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics</li> <li>• develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future</li> </ul>	<p>Key Stage 1 Working scientifically. Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> <li>• asking simple questions and recognising that they can be answered in different ways</li> <li>• observing closely, using simple equipment</li> <li>• performing simple tests</li> <li>• identifying and classifying</li> <li>• using their observations and ideas to suggest answers to questions</li> <li>• gathering and recording data to help in answering question</li> </ul> <p>Note: Year 1 and Year 2 classes focus explicitly on developing their 'Working Scientifically' Objectives (above) during the Autumn B half term.</p> <p>They also experience non-statutory exploratory physics units In Spring B, in preparation for physics-based topics in KS2:</p> <ul style="list-style-type: none"> <li>- Y1: Light (Exploratory activities)</li> <li>- Y2: Forces (Exploratory Unit)</li> </ul>	<p>Key Stage 2 - During years 3 and 4, pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• ask relevant questions and use different types of scientific enquiries to answer them</li> <li>• set up simple practical enquiries, comparative and fair tests</li> <li>• make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>• gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>• record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>• report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>• use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>• identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>• use straightforward scientific evidence to answer questions or to support their findings</li> </ul> <p>Note: Year 3 and Year 4 classes focus explicitly on developing their 'Working Scientifically' objectives (above) during the Spring B half term.</p> <p>During years 5 and 6, pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>• take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>• record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>• use test results to make predictions to set up further comparative and fair tests</li> <li>• report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as</li> </ul>
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displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments

Note: Year 5 and Year 6 classes focus explicitly on developing their 'Working Scientifically' objectives (above) during the Autumn B half term.

<b>Reception ELG</b>	<b>Knowledge and Understanding of the World</b> <b>People and Communities</b> <ul style="list-style-type: none"> <li>Children talk about past and present events in their own lives and in the lives of family members. They know that other children don't always enjoy the same things, and are sensitive to this. They know about similarities and differences between themselves and others, and among families, communities and traditions.</li> </ul> <b>The World</b> <ul style="list-style-type: none"> <li>Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.</li> </ul> <b>Technology</b> <ul style="list-style-type: none"> <li>Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.</li> </ul>			
<b>Year 1</b>	<u><b>Seasonal Changes</b></u> <b>Knowledge:</b> <ul style="list-style-type: none"> <li>- To observe changes across the 4 seasons.</li> <li>- To observe and describe weather associated with the seasons and how day length varies.</li> </ul> <b>Skills:</b> <ul style="list-style-type: none"> <li>- To make a pictogram about daylight time</li> <li>- To observe and talk about changes in the weather and the seasons.</li> <li>- To observe how a tree changes during the seasons.</li> </ul>	<u><b>Everyday Materials</b></u> <b>Knowledge:</b> <ul style="list-style-type: none"> <li>- To know the difference between an object and the material from which it is made.</li> <li>- To name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</li> <li>- describe the simple physical properties of a variety of everyday materials</li> </ul> <b>Skills:</b> <ul style="list-style-type: none"> <li>- To explore the properties of various materials through their senses.</li> <li>- compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> <li>- To classify materials using a key.</li> </ul>	<u><b>Animals Including Humans</b></u> <b>Knowledge :</b> <ul style="list-style-type: none"> <li>- To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>- To identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>- To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).</li> <li>- To identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul> <b>Skills:</b> <ul style="list-style-type: none"> <li>- To identify and group animals according to what they eat.</li> <li>- To explore the differences between wild/non-wild animals.</li> <li>- To explore animal structures through researching their abilities.</li> <li>- Use their senses to compare different textures, sounds and smells.</li> </ul>	<u><b>Plants</b></u> <b>Knowledge:</b> <ul style="list-style-type: none"> <li>- To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>- To identify and describe the basic structure of a variety of common flowering plants.</li> </ul> <b>Skills:</b> <ul style="list-style-type: none"> <li>- To observe the growth of flowers and vegetables that they have planted.</li> <li>- To use an identification chart to identify flowers in our outdoor areas.</li> <li>- To compare tree barks.</li> </ul>

			-To use observations and ideas to answer scientific questions about Bog Baby.	
	<b>Y1 Enquiry Examples (Will run through the units, and in the allocated half term.)</b>	<u>Observation over time:</u> - To examine how an tree changes over the year (Start Autumn A) <u>Pattern seeking.</u> -To complete a pattern seeking enquiry around falling leaves. (Autumn B) <u>Identifying, classifying and grouping.</u> - Identifying and grouping animals according to what they eat. (Animals Inc Humans) - Identifying and naming a variety of common wild and garden plants, including deciduous and evergreen trees. <u>Comparative</u> - To complete a simple comparative test on absorption of kitchen rolls. (Autumn B) - Simple test exploring what happens to materials when they are heated and cooled. - Which type of soil/compost grows the tallest sunflower? (Plants) - To compare sense of smell when blindfolded vs not. (Autumn B) <u>Research using secondary sources</u> - Research opportunities throughout each topic utilizing both the internet and library loan books.		
<b>Year 2</b>	<u><b>Living Things and their Habitats</b></u> <b>Literacy Link: Wild Knowledge :</b> - To explore and compare the differences between things that are living, dead, and things that have never been alive. - To 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. - To identify and name a variety of plants and animals in their habitats, including microhabitats. - To describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	<u><b>Uses of Everyday Materials</b></u> <b>Literacy Link: Traction Man Knowledge:</b> -Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. -To know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <b>Skills:</b> -To compare the uses of everyday materials in and around the school with materials found in other places -To observe closely, to identify and classify the uses of different materials, and record their observations in tables.	<u><b>Animals Including Humans</b></u> <b>Knowledge:</b> - To notice that animals, including humans, have offspring which grow into adults. -To find out about and describe the basic needs of animals, including humans, for survival (water, food and air) - To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene <b>Skills:</b> -To observe how different animals, including humans, grow. - Ask questions about what things animals need for survival and what humans need to stay healthy.	<u><b>Plants</b></u> <b>Knowledge:</b> -To observe and describe how seeds and bulbs grow into mature plants. (Observing over time) -To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <b>Skills:</b> - To sort and compare seeds.(Identifying and classifying) - To plant and grow from seeds and bulbs.

	<b>Skills:</b> <ul style="list-style-type: none"> <li>- Sort and classify things according to whether they are living, dead or were never alive.</li> <li>- Record their findings using charts.</li> <li>- Construct a simple food chain.</li> <li>- Answer questions that enable them to become familiar with the life processes that are common to all living things.</li> </ul>			
	<b>Y2 Enquiry Examples (Will run through the units, and in the allocated half term.)</b>	<p><u>Observation over time:</u></p> <ul style="list-style-type: none"> <li>-To observe how much food and drink they have over a week. (Animals inc humans)</li> <li>- To observe and record, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb. (Plants)</li> </ul> <p><u>Pattern seeking.</u></p> <ul style="list-style-type: none"> <li>- Pattern seeking enquiry: Which conditions do woodlice prefer to live in? (Animals and their habitats)</li> </ul> <p><u>Identifying, classifying and grouping.</u></p> <ul style="list-style-type: none"> <li>- Observing, classifying and grouping materials (Materials)</li> <li>- Exploring and comparing the differences between things that are living, dead, and things that have never been alive. (Animals/Habitats)</li> <li>- Identifying and naming a variety of plants and animals in their habitats, including microhabitats. (Animals/Habitats)</li> <li>-To classify healthy/non healthy foods.(Animals inc humans)</li> </ul> <p><u>Comparative</u></p> <ul style="list-style-type: none"> <li>- To carry out a simple test around shoe material. (Materials)</li> <li>-To carry out a simple comparative test around plugging a hole with a material. (+Recording in tables) (Materials)</li> <li>-To investigate exercises that tire us out more. (+answering questions) (Animals inc Humans)</li> <li>-To carry out a simple comparative test: Stretchy tights. (Materials)</li> <li>- To observe similar plants at different stages of growth; Set up a comparative test to show that plants need light and water to stay healthy. (Plants)</li> </ul> <p><u>Research using secondary sources</u></p> <ul style="list-style-type: none"> <li>- Research opportunities throughout each topic utilising both the internet and library loan books.</li> </ul>		

Year 3	<p><b><u>Light</u></b> <b>Literacy Link: Orion in the Dark</b> <b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To know that light is needed in order to see things and that dark is the absence of light.</li> <li>- To know that light is reflected from surfaces.</li> <li>- To know that light from the sun can be dangerous and that there are ways to protect our eyes.</li> <li>- To know that shadows are formed when the light from a light source is blocked by an opaque object.</li> <li>- To find patterns in the way that the size of shadows change.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>- To observe and measure shadows, and find out how they are formed and what might cause the shadows to change.</li> <li>- To observe and measure the reflection of light.</li> </ul>	<p><b><u>Animals Including Humans</u></b> <b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>-To 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.</li> <li>-To identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To observe and compare animals with and without skeletons.</li> <li>-To make a model of the muscles of the arm.</li> <li>-To compare and contrast the diets of different animals.</li> </ul>	<p><b><u>Forces</u></b> <b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To compare how things move on different surfaces.</li> <li>- To notice that some forces need contact between 2 objects, but magnetic forces can act at a distance.</li> <li>- To observe how magnets attract or repel each other and attract some materials and not others.</li> <li>-To 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.</li> <li>-To describe magnets as having 2 poles.</li> <li>-Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To observe and compare how things move on different surfaces.</li> <li>-To carry out a test accurately and record results.</li> <li>- To make decisions about how to record.</li> </ul>	<p><b><u>Plants</u></b> <b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To know and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</li> <li>- To know the requirements of plants for life and growth and how they vary from plant to plant.</li> <li>- To know how water is transported within plants.</li> <li>-To know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To look for patterns in the structure of fruits that relate to how the seeds are dispersed.</li> <li>-To explore how water is transported through a plant using dye.</li> </ul>	<p><b><u>Rocks</u></b> <b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To compare and group together different kinds of rocks on the basis of appearance and simple physical properties.</li> <li>- To describe in simple terms how fossils are formed when things that have lived are trapped within rock.</li> <li>- Recognise that soils are made from rocks and organic matter.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To use a hand lens or microscope to help identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.</li> <li>- To research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed.</li> <li>-To explore different soils and identify similarities and differences between them</li> <li>-To raise and answer questions about the way soils are formed.</li> </ul>
	<p><b>Y3 Enquiry Examples (Will run through the units, and in the allocated half term.)</b></p>	<p><u>Observation over time:</u></p> <ul style="list-style-type: none"> <li>-To compare the effect of different factors on plant growth, for example, the amount of light, the amount of fertilizer. (Plants)</li> <li>-To observe how water is transported in plants, plot changes in the length of roots on a bar chart. (Plants)</li> </ul> <p><u>Pattern seeking.</u></p>			



		<p>-Pattern seeking enquiry. Eg 'Can people with longer legs jump further?' including making predictions. (Animals including Humans)</p> <p><u>Identifying, classifying and grouping.</u></p> <p>-To compare and contrast the diets of different animals. (Animals inc Humans)</p> <p>-To 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. (Forces)</p> <p>-To explore different soils and identify similarities and differences between them. (Rocks)</p> <p><u>Comparative and Fair Testing</u></p> <p>- To carry out a simple test to look for patterns in what happens to shadows when the light source move. (Light)</p> <p>- To use a light meter/ data logger to carry out a fair test to investigate what happens when the distance between the light source and the object changes. Produce a bar chart to show results. (Light)</p> <p>- To carry out a simple test to sort materials into those that are magnetic and those that are not. To seek common factors and draw conclusions. (Forces)</p> <p>-To set up a class fair test to investigate how objects move on different surfaces. (Forces)</p> <p>- To test what happens when different poles face each other and record in a table. To present findings. (Forces)</p> <p>- To use comparative tests to investigate what happens when rocks are rubbed together, and permeability. (Rocks)</p> <p><u>Research using secondary sources</u></p> <p>- Research opportunities throughout each topic utilising both the internet and library loan books.</p> <p>- To research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed.</p>
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Year 4	<u>Electricity</u>	<u>Animals Including Humans</u>	<u>Sound</u>	<u>Living Things and their Habitats</u>	<u>States of Matter</u>
	<p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To know common appliances that run on electricity</li> <li>- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</li> <li>- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is</li> </ul>	<p><b>Literacy Link: The Incredible Book Eating Boy</b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To describe the simple functions of the basic parts of the digestive system in humans.</li> <li>- To identify the different types of teeth in humans and their simple functions.</li> <li>- Construct and interpret a variety of food chains,</li> </ul>	<p><b>Literacy Link: The Pied Piper</b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>-To identify how sounds are made, associating some of them with something vibrating.</li> <li>- To recognise that vibrations from sounds travel through a medium to the ear.</li> <li>- To find patterns between the pitch of a sound and</li> </ul>	<p><b>Literacy Link: The Promise</b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>-To recognise that living things can be grouped in a variety of ways.</li> <li>- To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</li> <li>-To recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>-To compare and group materials together, according to whether they are solids, liquids or gases.</li> <li>-To 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).</li> </ul>

	<p>part of a complete loop with a battery.</p> <ul style="list-style-type: none"> <li>- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</li> <li>- Recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>- To construct a simple series electrical circuit, naming its parts.</li> <li>-To use circuits to create simple devices. (eg torch)</li> <li>- To draw circuits as a pictorial representation.</li> </ul>	<p>identifying producers, predators and prey.</p> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>- To produce a flow diagrams and observational diagrams to show what happens when we chew, and what happens to food in our stomach.</li> <li>-To observe closely teeth used for different things.</li> <li>-To model how a stomach breaks up food.</li> <li>- To draw food chains, ensuring that arrows show the direction that energy is passed.</li> </ul>	<p>features of the object that produced it.</p> <ul style="list-style-type: none"> <li>- To find patterns between the volume of a sound and the strength of the vibrations that produced it.</li> <li>- To recognise that sounds get fainter as the distance from the sound source increases.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To make different sounds, identifying vibrations.</li> <li>-To describe using a diagram how sounds reach the ear.</li> <li>- To use a data logger to measure sound levels</li> </ul>	<p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To use and make simple guides or keys to explore and identify local plants and animals.</li> <li>-To raise and answer questions based on observations of animals and what they have found out about other animals that they have researched.</li> </ul>	<ul style="list-style-type: none"> <li>- To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To group and classify a variety of different materials.</li> <li>- To explore the effect of temperature on substances.</li> <li>-To observe water as a solid, a liquid and a gas and note the changes to water when it is heated or cooled.</li> </ul>
	<p><b>Y4 Enquiry Examples (Will run through the units, and in the allocated half term.)</b></p>	<p><u>Observation over time:</u></p> <ul style="list-style-type: none"> <li>-To observe what happens to an eggshell when it is left in cola (Animals inc Humans)</li> <li>- To observe and record evaporation over a period of time (States of matter)</li> <li>-To observe water as a solid, a liquid and a gas and note the changes to water when it is heated or cooled. (States of Matter)</li> </ul> <p><u>Pattern seeking.</u></p> <ul style="list-style-type: none"> <li>-To research and gather data to look for a pattern between use of insecticides and bee population. (Animals and their habitats.)</li> </ul> <p><u>Identifying, classifying and grouping.</u></p> <ul style="list-style-type: none"> <li>-To classify materials into conductors/insulators.</li> <li>-To use and make simple guides or keys to explore and identify local plants and animals. (Living Things and their Habitats)</li> <li>-To group and classify a variety of different materials. (States of Matter)</li> <li>-To use and make simple guides or keys to explore and identify local plants and animals. (Animals and their habitats)</li> </ul> <p><u>Comparative and Fair Testing</u></p> <ul style="list-style-type: none"> <li>- To carry out a simple test to identify conductors and insulators, and draw conclusions from it. (Electricity)</li> <li>- To carry out a simple test to determine how we use our different teeth for different foods. (Animals inc Humans)</li> <li>- To carry out a fair test on how the volume of a drum changes as you get further away from it (Fair test) using a data logger and graphing results. (Sound)</li> <li>- To observe and record evaporation over a period of time (States of matter)</li> </ul> <p><u>Research using secondary sources</u></p> <ul style="list-style-type: none"> <li>-Research opportunities throughout each topic utilising both the internet and library loan books.</li> <li>-Internet research on insecticide use and bee population. (Animals and their habitats.)</li> </ul>			

<b>Year 5</b>	<p><b><u>Earth and Space</u></b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To explain the movement of the Earth and other planets relative to the sun in the solar system.</li> <li>- To explain the movement of the moon relative to the Earth.</li> <li>- To explain the Sun, Earth and Moon as approximately spherical bodies.</li> <li>- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>- To create simple models of the solar system.</li> <li>- To use tables to record planetary data and results of research.</li> <li>- To produce and analyse a line graph around sunset/sunrise.</li> </ul>	<p><b><u>Living Things and their Habitats</u></b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>-To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>-To describe the life process of reproduction in some plants and animals.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To observe and compare the life cycles of plants and animals in their local environment with other plants and animals around the world.</li> <li>-To observe changes in an animal over a period of time. (Chicks)</li> <li>-To compare how different animals reproduce and grow.</li> </ul>	<p><b><u>Properties and changes in Materials</u></b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- 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.</li> <li>-To know that some materials will dissolve in liquid to form a solution.</li> <li>-To describe how to recover a substance from a solution.</li> <li>-To use knowledge of solids, liquids and gases to decide how mixtures might be separated including through filtering, sieving and evaporating.</li> <li>- To demonstrate that dissolving, mixing and changes of state are reversible changes.</li> <li>-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.</li> <li>- Provide reasoned justifications for their views.</li> </ul> <p><b>Skills:</b></p>	<p><b><u>Forces</u></b></p> <p><b>Literacy Link: The Man Who Walked Between Two Towers</b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>-To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</li> <li>-To identify the effects of air resistance, water resistance and friction that act between moving surfaces.</li> <li>-To recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>- provide an explanation as to the degrees of trust on a data set.</li> <li>-To experience forces that make things begin to move, get faster or slow down.</li> <li>-To explore the effects of friction on movement and find out how it slows or stops moving objects.</li> </ul>	<p><b><u>Animals Including Humans</u></b></p> <p><b>Link: The Nowhere Emporium</b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To describe the changes as humans develop to old age.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To research the gestation periods of other animals and compare them with humans.</li> <li>- To draw a timeline to indicate stages in the growth and development of humans.</li> </ul>

			<ul style="list-style-type: none"> <li>-To produce a line graph on cup insulation data.</li> <li>-To use a thermometer/probe and record data.</li> <li>-To dissolve and observe substances in liquid.</li> <li>-To analyse the trustworthiness of data.</li> </ul>		
	<b>Y5 Enquiry Examples (Will run through the units, and in the allocated half term.)</b>	<p><u>Observation over time:</u></p> <ul style="list-style-type: none"> <li>-To observe changes in an animal over a period of time. (Living Things and their Habitats)</li> <li>-To compare how different animals reproduce and grow. (Living Things and their Habitats)</li> </ul> <p><u>Pattern seeking.</u></p> <ul style="list-style-type: none"> <li>- To conduct a pattern seeking enquiry surrounding the planets' orbits and diameters. (Earth and Space)</li> </ul> <p><u>Identifying, classifying and grouping.</u></p> <ul style="list-style-type: none"> <li>-To observe and compare the life cycles of plants and animals in their local environment with other plants and animals around the world.</li> <li>-To classify and group the planets. (Earth and space)</li> <li>To classify and group Animals. (Living things and their habitats)</li> </ul> <p><u>Comparative and Fair Testing</u></p> <ul style="list-style-type: none"> <li>-To produce a fair test around dissolving times</li> <li>-To observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes.</li> <li>-To carry out fair tests to determine which how blade size affects the falling time of autogyros (Producing a bar chart), and what affects the falling speed of a parachute.</li> <li>-To carry out a comparative test around insulation of cups. (Materials and their properties.)</li> <li>-To carry out a comparative test around heat conduction. (Materials and their properties.)</li> <li>- Plan and carry out a fair test on keeping liquid warm. (Materials and their properties.)</li> <li>- To carry out an observational fair test on dissolving.</li> <li>- To carry out a pattern seeking enquiry on hand and shoe size and produce a scatter graph.</li> </ul> <p><u>Research using secondary sources</u></p> <ul style="list-style-type: none"> <li>-Research opportunities throughout each topic utilising both the internet and library loan books.</li> <li>-Internet research on planetary data.</li> </ul>			

Year 6	<p><b><u>Living Things and their Habitats</u></b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To know how living things are classified into broad groups according to common observable characteristics, including micro-organisms, plants and animals.</li> <li>- To give reasons for classifying plants and animals based on specific characteristics.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>- To use classification systems and keys to identify some animals/plants including some in the immediate environment.</li> <li>- To research unfamiliar animals/plants using secondary sources and decide where they belong in the classification system.</li> <li>- To classify leaves based on their features.</li> <li>-To produce a scatter graph from researched data.</li> </ul>	<p><b><u>Evolution and Inheritance</u></b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>-Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>-Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>-Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To research how animals are adapted to their specific environments using secondary sources.</li> <li>-To create models of fossils which show how an animal evolved.</li> <li>- To explore inheritance through combining characteristics 'Mr Men' characters.</li> </ul>	<p><b><u>Electricity</u></b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>-To 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.</li> <li>-To use recognised symbols when representing a simple circuit in a diagram.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To systematically identify the effect of changing one component at a time in a circuit.</li> <li>-To measure the brightness of a bulb with a data logger/light meter.</li> <li>-To construct simple series circuits, to help them to answer questions</li> </ul>	<p><b><u>Light</u></b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>-To recognise that light appears to travel in straight lines.</li> <li>-To 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.</li> <li>- To 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.</li> <li>-To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To explore the way that light behaves, including light sources, reflection and shadows.</li> <li>-To discuss observations and make predictions.</li> <li>- To report on findings from enquiries, including degrees of trust.</li> </ul>	<p><b><u>Animals Including Humans</u></b></p> <p><b>Literacy Link: The Spider and the Fly</b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>-To identify and name the main parts of the human circulatory system.</li> <li>-To describe the functions of the heart, blood vessels and blood.</li> <li>-To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> <li>- To describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>-To explore and answer questions about how the circulatory system enables the body to function.</li> <li>-To understand how to keep their bodies healthy.</li> <li>-To understand how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body.</li> <li>- To take measurements using a range of scientific equipment with increasing accuracy and precision.</li> </ul>
	<p><b>Y6 Enquiry Examples (Will run through the units, and in the allocated half term.)</b></p>	<p><b><u>Observation over time:</u></b></p> <ul style="list-style-type: none"> <li>-To plan a fair test around microorganisms, recognising and controlling variables. (Also: Fair Testing)</li> <li>-To explore fossils and use them to examine how an animal (eg Crocodile) has changed over time.</li> <li>-To carry out an observation over time enquiry based on shadows. (Light)</li> </ul>			

		<p><u>Pattern seeking.</u></p> <ul style="list-style-type: none"><li>- To plan a pattern seeking enquiry about the adaption and evolution of birds' feet (Evolution and Inheritance)</li></ul> <p><u>Identifying, classifying and grouping.</u></p> <ul style="list-style-type: none"><li>- To use classification systems and keys to identify some animals/plants including some in the immediate environment. (Living things and their habitats.)</li></ul> <p><u>Comparative and Fair Testing</u></p> <ul style="list-style-type: none"><li>-To plan a fair test around microorganisms, recognising and controlling variables. (Also: changes over time)</li><li>- To plan a comparative test around eye colour, and use results to plan further comparative tests.</li><li>-To compare a range of foot shapes using modelling and comparative tests.</li><li>-To investigate using an illustrative fair test how the amount of volts affects the brightness of a bulb, taking repeat measurements of data with precision using a data-logger. (Electricity)</li><li>- Investigative Fair-test – What affects the brightness of a bulb in a circuit? (Electricity)</li></ul> <p><u>Research using secondary sources</u></p> <ul style="list-style-type: none"><li>- To research unfamiliar animals/plants using secondary sources and decide where they belong in the classification system.</li><li>-To explore fossils and use them to examine how an animal (e.g. Crocodile) has changed over time. (Adaptation)</li><li>-To research data on various organisms using the internet. (Living things and their habitats)</li><li>-To research how animals are suited to where they live. (Adaptation)</li></ul>
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