

<u>Topics</u>	EYFS Nursery	EYFS Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<u>Planning and length of unit.</u> Kent scheme with resources sourced.	Development Matters - UoTW: The Natural World	Development Matters - UoTW: The Natural World	Kent Scheme Units	Kent Scheme Units	Kent Scheme Units	Kent Scheme Units	Kent Scheme Units	Kent Scheme Units
<b>Substantive Knowledge</b>  <b>Living things and their habitats/<u>seasonal change (y1)</u> and <b>evolution and inheritance (y6)</b></b>		<u>Seasons</u> <ul style="list-style-type: none"> <li>Understand some important processes and changes in the natural world around them, including the seasons and states of matter.</li> </ul> <u>Scavenger Hunt/Chicks/Butterflies</u> <ul style="list-style-type: none"> <li>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</li> </ul>	<ul style="list-style-type: none"> <li><u>Observe changes across the four seasons</u></li> <li><u>Observe and describe weather associated with the seasons and how day length varies.</u></li> </ul>	<ul style="list-style-type: none"> <li>Explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>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.</li> <li>Identify and name a variety of plants and animals in their habitats, including micro-habitats</li> <li>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.</li> </ul>		<ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of ways</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul>	<ul style="list-style-type: none"> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>Describe the life process of reproduction in some plants and animals.</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>Give reasons for classifying plants and animals based on specific characteristics</li> </ul> <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</li> </ul>

								plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
<b>Disciplinary Knowledge (working scientifically)</b>		<p><u>Seasons</u></p> <ul style="list-style-type: none"> <li>Know symbols of seasons and which is applicable to each.</li> </ul> <p><u>Scavenger Hunt/Chicks/Butterflies</u></p> <ul style="list-style-type: none"> <li>Explore the natural world around them, making observations and drawing pictures of animals and plants.</li> </ul>	<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 gathering and recording data to help in answering questions.</li> </ul>	<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>using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.</li> </ul>		<ul style="list-style-type: none"> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions -</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions -</li> </ul>	<ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -</li> </ul> <p>Non statutory</p> <ul style="list-style-type: none"> <li>To be able to recognise which secondary sources will be the most useful for their research</li> </ul>	<ul style="list-style-type: none"> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments -</li> </ul> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings</li> </ul>

								<p>when appropriate -</p> <ul style="list-style-type: none"> <li>• recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -</li> <li>• reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations -</li> <li>• identifying scientific evidence that has been used to support or refute ideas or arguments -</li> <li>• To be able to recognise which secondary sources will be most useful to research ideas (non-statutory).</li> </ul>
<b>Key Vocabulary</b>		Autumn Winter Spring Summer evergreen	Spring Summer Autumn Winter Temperature	Habitat Micro habitat Organism Deciduous Evergreen		Environment Migrate Hibernate Human impact Positive	Metamorphosis Carpel Pollination Fertilisation Germination	Characteristics Microorganisms Kingdoms Species Flowering plant

		deciduous	Thermometer	Invertebrates/vertebrates		Negative	Reproduction	Non-flowering plant  Evolution, evolve Natural selection Survival Variation Inheritance Inhabited
<b>STEM Sentences</b>			<p>I have noticed that ...</p> <p>..... is the same as .....</p> <p>..... is it different to .....</p> <p>I predict that ...</p> <p>I have found out ....</p>	<p>I have noticed that ...</p> <p>I know this because .....</p> <p>..... is the same as .....</p> <p>This is because ....</p> <p>..... is it different to .....</p> <p>This is because ....</p> <p>I have found out ....</p> <p>This tells me that ....</p>		<p>..... is the same as .....</p> <p>This is because ....</p> <p>..... is it different to .....</p> <p>This is because ....</p> <p>In my investigation I found out ...</p> <p>I know this because my results show that ...</p> <p>I would now like to know .....</p>	<p>I predict .....</p> <p>I think this because .....</p> <p>To make my test fair I will...</p> <p>I will do this because .....</p> <p>The variables I will change/keep the same are ...</p> <p>By doing this I expect .....</p>	<p>In my investigation I found out ...</p> <p>I know this because my results show that ...</p> <p>I believe that the scientific explanation for this is ....</p>
<p><b>Substantive Knowledge</b></p> <p><b>Animals inc humans</b></p>			<ul style="list-style-type: none"> <li>Identify and name a variety of common animals that are birds, fish, amphibians, reptiles and mammals</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles and</li> </ul>	<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>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>Identify that humans and some animals have skeletons and muscles for support, protection and movement.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans</li> <li>Identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the changes as humans develop from birth to old age</li> </ul>	<ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>

			<p>mammals, and including pets).</p> <ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body and say which parts of the body is associated with each sense.</li> </ul>					
<b>Disciplinary knowledge</b>			<ul style="list-style-type: none"> <li>observing closely, using simple equipment</li> <li>identifying and classifying</li> <li>using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.</li> <li>using secondary sources to find out information (non statutory)</li> <li>able to sort and group animals</li> </ul>	<ul style="list-style-type: none"> <li>observing closely, using simple equipment</li> <li>performing simple tests</li> <li>using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.</li> </ul>	<ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them -</li> <li>setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers -</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables -</li> <li>reporting on findings from</li> </ul>	<ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them -</li> <li>setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers -</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables -</li> <li>reporting on findings from</li> </ul>	<ul style="list-style-type: none"> <li>To be able to raise different types of questions (non-statutory).</li> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -</li> <li>reporting and presenting findings from enquiries, including conclusions, causal relationships and</li> </ul>	<ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -</li> <li>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and</li> </ul>

					enquiries, including oral and written explanations, displays or presentations of results and conclusions - <ul style="list-style-type: none"> <li>using straightforward scientific evidence to answer questions or to support their findings -</li> </ul>	enquiries, including oral and written explanations, displays or presentations of results and conclusions - <ul style="list-style-type: none"> <li>using straightforward scientific evidence to answer questions or to support their findings. -</li> </ul>	explanations of and degree of trust in results, in oral and written forms such as displays and other presentations - <ul style="list-style-type: none"> <li>identifying scientific evidence that has been used to support or refute ideas or arguments -</li> </ul>	other presentations -
<b>Key Vocabulary</b>			Carnivore Omnivore Herbivore Amphibians Reptiles Mammals	Offspring Growth Life cycles Nutrition Respiration Hygiene	<b>Diet &amp; Nutrition</b> Diet Vitamins/minerals Proteins Carbohydrates  <b>Skeleton</b> Skeleton Muscles Joints Organs	<b>Digestive System</b> Digestion/Digestive system oesophagus Saliva Small intestine  <b>Teeth</b> Incisors Canines Premolars Molars  <b>Foodchain</b> Producer Consumer Predator Prey	Gestation Fetus Fertilisation Species Adolescent Puberty	<b>Circulatory system</b> Circulation Veins Arteries Pulse Drugs Lifestyle
<b>STEM Sentences</b>			I have noticed that ...  ..... is the same as ..... ..... is it different to .....  I have found out ....	I have noticed that ... I know this because .....  ..... is the same as ..... This is because ....  ..... is it different to ..... This is because ....  I predict that ... I think this because ....	I predict ..... I think this because .....  To make my test fair I will...  I have found out ....  Therefore my prediction was ...  In my investigation I found	I predict .....  I think this because .....  To make my test fair I will...  In my investigation I found out ...  I know this because my results show that ...	I predict .....  I think this because .....  To make my test fair I will...  I will do this because .....  The variables I will change/keep the same are ...	I predict .....  I think this because .....  To make my test fair I will...  I will do this because .....  The variables I will change/keep the same are ...

				I have found out .... This tells me that ....	out ... I know this because my results show that ... I would now like to know ....	I would now like to know ..... I have found out .... Therefore my prediction was ...	By doing this I expect ..... I have found out .... Therefore my prediction was ... My prediction was correct because .... In my investigation I found out ... I know this because my results show that ... I believe that the scientific explanation for this is ....	By doing this I expect ..... I have found out .... Therefore my prediction was ... My prediction was correct because ....
<p><b>Materials and states of matter and <u>rocks</u></b></p>	<p><u>Materials Hunt</u></p> <ul style="list-style-type: none"> <li>Showing care and concern for living things and the environment.</li> </ul>	<p><u>Ice Melting/Butter/Shadow Puppets/Floating and Sinking/Skittles</u></p> <ul style="list-style-type: none"> <li>Understand some important processes and changes in the natural world around them, including the seasons and states of matter.</li> </ul>	<ul style="list-style-type: none"> <li>Distinguish between and object and the material from which it is made.</li> <li>Identify and name a variety of everyday materials, including wood, plastic, glass, water and rock.</li> <li>Describe the simple physical properties of a variety of everyday materials.</li> <li>Compare and group together a variety of everyday materials on the basis of their physical</li> </ul>	<ul style="list-style-type: none"> <li>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<ul style="list-style-type: none"> <li><u>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</u></li> <li><u>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</u></li> <li><u>Recognise that soils are made from rocks and organic matter.</u></li> </ul>	<ul style="list-style-type: none"> <li>Compare and group materials together, according to whether they are solids, liquids or gases</li> <li>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> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<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>Understand that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving</li> </ul>	

							<ul style="list-style-type: none"> <li>and evaporating</li> <li>• Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>• 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> </ul>	
<b>Disciplinary Knowledge</b>	<u>Materials Hunt</u> <ul style="list-style-type: none"> <li>• Able to comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world.</li> <li>• Talking about some of the things they have observed</li> </ul>	<u>Ice Melting/Butter/Shadow Puppets/Floating and Sinking/Skittles</u> <ul style="list-style-type: none"> <li>• Observe changes in states of matter.</li> <li>• Talk about what they think is going to happen (basic predictions)</li> </ul>	<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> </ul>	<ul style="list-style-type: none"> <li>• asking simple questions and recognising that they can be answered in different ways -</li> <li>• performing simple tests -</li> <li>• using their observations and ideas to suggest answers to questions gathering and</li> </ul>	<ul style="list-style-type: none"> <li>• setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard</li> </ul>	<ul style="list-style-type: none"> <li>• setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a</li> </ul>	<ul style="list-style-type: none"> <li>• planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -</li> <li>• taking measurements, using a range of</li> </ul>	



	<p>such as plants, animals, natural and found objects.</p> <ul style="list-style-type: none"> <li>Talking about why things happen and how things work.</li> </ul>		<ul style="list-style-type: none"> <li>using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.</li> <li>make simple measurements with equipment (non-statutory)</li> </ul>	<p>recording data to help in answering questions. -</p> <ul style="list-style-type: none"> <li>use simple secondary sources to find answers (non-statutory)</li> <li>to be able to talk about what they have found out and how they have found it out (non-statutory)</li> <li>to be able to, with help, notice relationships (non-statutory)</li> </ul>	<p>units, using a range of equipment, including thermometers and data loggers -</p> <ul style="list-style-type: none"> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables -</li> </ul>	<p>range of equipment, including thermometers and data loggers -</p> <ul style="list-style-type: none"> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions -</li> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -</li> <li>using straightforward scientific evidence to answer questions or to support their findings. -</li> </ul>	<p>scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate -</p> <ul style="list-style-type: none"> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -</li> <li>using test results to make predictions to set up further comparative and fair tests -</li> <li>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations -</li> </ul>	
<b>Key Vocabulary</b>	<p>plastic wood glass bricks metal</p>	<p>shadow melting floating hot cold</p>	<p>plastic metal glass wood rough</p>	<p>transparent translucent waterproof properties solid</p>	<p>Sedimentary metamorphic igneous permeable/impermeable</p>	<p>Oxygen Carbon dioxide particles state evaporation</p>	<p>conductor insulator dissolve soluble/insoluble filtering</p>	

	leather	freezing	smooth	flexible	erosion solidify	condensation	reversible/irreversible changes	
<b>STEM Sentences</b>			<p>I have noticed that ...</p> <p>..... is the same as .....</p> <p>..... is it different to .....</p> <p>I have found out ....</p>	<p>I have noticed that ...</p> <p>I know this because .....</p> <p>..... is the same as .....</p> <p>This is because ....</p> <p>..... is it different to .....</p> <p>This is because ....</p> <p>I predict that ...</p> <p>I think this because ....</p> <p>I have found out ....</p> <p>This tells me that ....</p>	<p>..... is the same as .....</p> <p>This is because ....</p> <p>..... is it different to .....</p> <p>This is because ....</p> <p>I predict .....</p> <p>I think this because .....</p> <p>To make my test fair I will...</p> <p>I have found out ....</p> <p>Therefore my prediction was ...</p> <p>In my investigation I found out ...</p> <p>I know this because my results show that ...</p> <p>I would now like to know .....</p>	<p>I predict .....</p> <p>I think this because .....</p> <p>To make my test fair I will...</p> <p>In my investigation I found out ...</p> <p>I know this because my results show that ...</p> <p>I would now like to know .....</p> <p>..... have found out ....</p> <p>Therefore my prediction was ...</p>	<p>I predict .....</p> <p>I think this because .....</p> <p>To make my test fair I will...</p> <p>I will do this because .....</p> <p>The variables I will change/keep the same are ...</p> <p>By doing this I expect .....</p> <p>The equipment I have chosen to use is ....</p> <p>I have chosen this because .....</p> <p>I expect to find ....</p> <p>..... is the same as .....</p> <p>This is because ....</p> <p>..... is it different to .....</p>	
<b>Plants</b>	<p><u>Spring/New Life</u></p> <ul style="list-style-type: none"> <li>Developing an understanding of growth, decay and changes over time.</li> <li>Showing care and concern for living things and the environment.</li> </ul>		<ul style="list-style-type: none"> <li>Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen</li> <li>Identify and describe the basic structure of a variety of common plants</li> </ul>	<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 gathering and</li> </ul>	<ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of plants; roots, stem, leaves and flowers.</li> <li>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.</li> </ul>			

			including roots, stem/trunk, leaves and flowers.	recording data to help in answering questions.	<ul style="list-style-type: none"> <li>Investigate the ways in which water is transported within plants.</li> <li>Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul>			
<b>Disciplinary Knowledge</b>	<u>Spring/New Life</u> <ul style="list-style-type: none"> <li>Able to comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world.</li> <li>Talking about some of the things they have observed such as plants, animals, natural and found objects.</li> <li>Talking about why things happen and how things work.</li> </ul>		<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>identifying and classifying -</li> <li>to be able to sort and group (non-statutory)</li> </ul>	<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>using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions-</li> <li>to sort objects using observable features (non-statutory)</li> </ul>	<ul style="list-style-type: none"> <li>setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers -</li> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions -</li> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -</li> </ul>			

					<ul style="list-style-type: none"> <li>using straightforward scientific evidence to answer questions or to support their findings. -</li> </ul>			
<b>Key Vocabulary</b>	petal root flower soil grow nature		Deciduous Evergreen roots leaves flowers trunk/stem	seeds bulb light/sunlight environment temperature conditions	pollination photosynthesis dispersal function requirements nutrients			
<b>STEM Sentences</b>			I have noticed that ... ..... is the same as ..... ..... is it different to .....	I have noticed that ... I know this because ..... ..... is the same as ..... This is because .... ..... is it different to ..... This is because .... I predict that ... I think this because .... I have found out .... This tells me that ....	..... is the same as ..... This is because .... ..... is it different to ..... This is because .... I predict ..... I think this because ..... To make my test fair I will... I have found out .... Therefore my prediction was ... In my investigation I found out ... I know this because my results show that ...			
<b>Light</b>					<ul style="list-style-type: none"> <li>Recognise that they need light in order to see things and that dark is the absence of light</li> <li>Notice that light is reflected from surfaces</li> </ul>			<ul style="list-style-type: none"> <li>Recognise that light appears to travel in straight lines</li> <li>Use the idea that light travels in straight lines to explain that objects are</li> </ul>

					<ul style="list-style-type: none"> <li>● Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>● Recognise that shadows are formed when the light from a light source is blocked by a solid object</li> <li>● Find patterns in the way that the sizes of shadows change.</li> </ul>			<p>seen because they give out or reflect light into the eye</p> <ul style="list-style-type: none"> <li>● 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>● 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>Disciplinary Knowledge</b></p>					<ul style="list-style-type: none"> <li>● asking relevant questions and using different types of scientific enquiries to answer them</li> <li>● recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables-</li> <li>● using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>			<ul style="list-style-type: none"> <li>● planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -</li> <li>● using test results to make predictions to set up further comparative and fair tests -</li> <li>● reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of</li> </ul>

								<p>trust in results, in oral and written forms such as displays and other presentations -</p> <ul style="list-style-type: none"> <li>identifying scientific evidence that has been used to support or refute ideas or arguments -</li> </ul>
<b>Key Vocabulary</b>					<p>reflection shadow light source opaque transparent translucent</p>			<p>reflection refraction light rays transparent opaque translucent</p>
<b>STEM Sentences</b>					<p>I have found out ....</p> <p>Therefore my prediction was ...</p> <p>In my investigation I found out ...</p> <p>I know this because my results show that ...</p>			<p>I predict .....</p> <p>I think this because .....</p> <p>To make my test fair I will...</p> <p>I will do this because .....</p> <p>The variables I will change/keep the same are ...</p> <p>I have found out ....</p> <p>Therefore my prediction was ...</p> <p>My prediction was correct because ....in doing this I expect .....</p> <p>In my investigation I found out ...</p> <p>I know this because my results show that ...</p> <p>I believe that the scientific explanation for this is ....</p>

<b>Forces and Magnets</b>					<ul style="list-style-type: none"> <li>• Compare how things move on different surfaces</li> <li>• Notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>• Observe how magnets attract or repel each other and attract some materials and not others</li> <li>• 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>• Describe magnets as having two poles</li> <li>• Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>		<ul style="list-style-type: none"> <li>• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>• Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>• Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul>	
<b>Disciplinary Knowledge</b>					<ul style="list-style-type: none"> <li>• setting up simple practical enquiries, comparative and fair tests making systematic and</li> </ul>		<ul style="list-style-type: none"> <li>• recording data and results of increasing complexity using scientific diagrams and</li> </ul>	

					<p>careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers -</p> <ul style="list-style-type: none"> <li>• recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables-</li> <li>• reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions -</li> <li>• identifying differences, similarities or changes related to simple scientific ideas and processes -</li> </ul>		<p>labels, classification keys, tables, scatter graphs, bar and line graphs</p>	
<b>Key Vocabulary</b>					<p>Forces Magnets Magnetic Attract Repel North/ south poles Magnetic field</p>		<p>Gravity Friction Resistance Newtons (N) Levers Pulleys</p>	



STEM Sentences					<p>..... is the same as ..... This is because ....</p> <p>..... is it different to ..... This is because ....</p> <p>I predict ..... I think this because .....</p> <p>To make my test fair I will...</p> <p>I have found out ....</p> <p>Therefore my prediction was ...</p> <p>In my investigation I found out ...</p> <p>I know this because my results show that ...</p>			
Electricity						<ul style="list-style-type: none"> <li>• Identify 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 part of a complete loop with a battery</li> <li>• Recognise that a switch opens and closes a circuit and</li> </ul>		<ul style="list-style-type: none"> <li>• 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>• 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>• Use recognised symbols when representing a simple circuit in a diagram.</li> </ul>

						<p>associate this with whether or not a lamp lights in a simple series circuit</p> <ul style="list-style-type: none"> <li>Recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul>		
<b>Disciplinary Knowledge</b>						<ul style="list-style-type: none"> <li>setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers -</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables-</li> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements</li> </ul>		<ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate -</li> <li>using test results to make predictions to set up further comparative and fair tests -</li> <li>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of</li> </ul>

						and raise further questions -		and degree of trust in results, in oral and written forms such as displays and other presentations
<b>Key Vocabulary</b>						Appliances Electricity Conductors Insulators Circuit Cell		Voltage Components Volts Series circuit Symbols Variation
<b>STEM Sentences</b>						<p>I predict .....</p> <p>I think this because .....</p> <p>To make my test fair I will...</p> <p>In my investigation I found out ...</p> <p>I know this because my results show that ...</p> <p>I would now like to know .....</p>		<p>I predict .....</p> <p>I think this because .....</p> <p>To make my test fair I will...</p> <p>I will do this because .....</p> <p>The variables I will change/keep the same are ...</p> <p>By doing this I expect .....</p> <p>The equipment I have chosen to use is ....</p> <p>I have chosen this because ....</p> <p>I expect to find .....</p> <p>..... is the same as .....</p> <p>This is because ....</p> <p>..... is it different to .....</p> <p>This is because ....</p> <p>I have found out ....</p> <p>Therefore my prediction was ...</p> <p>My prediction was correct because ....</p>

<p><b>Earth and Space and <u>Sound</u></b></p>					<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Identify how sounds are made, associating some of them with something vibrating</u></li> <li>• <u>Recognise that vibrations from a sound travel through a medium to the ear.</u></li> <li>• <u>Find patterns between the pitch of a sound and features of the object that produced it</u></li> <li>• <u>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</u></li> <li>• <u>Recognise that sounds get fainter as the distance from the sound source increases.</u></li> </ul>	<ul style="list-style-type: none"> <li>• Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>• Describe the movement of the Moon relative to the Earth</li> <li>• Describe 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>Disciplinary Knowledge</b></p>						<ul style="list-style-type: none"> <li>• asking relevant questions and using different types of scientific enquiries to answer them -</li> <li>• setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements</li> </ul>	<ul style="list-style-type: none"> <li>• planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -</li> <li>• reporting and presenting findings from enquiries, including conclusions, causal</li> </ul>	

						<p>using standard units, using a range of equipment, including thermometers and data loggers -</p> <ul style="list-style-type: none"> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions -</li> <li>identifying differences, similarities or changes related to simple scientific ideas and processes -</li> </ul>	<p>relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations -</p>	
<b>Key Vocabulary</b>						<p>Vibrations Sounds Noise Pitch Source Decibels</p>	<p>orbit axis rotate/rotation solar system moon phases spherical/sphere</p>	
<b>STEM Sentences</b>						<p>I predict .....</p> <p>I think this because .....</p> <p>To make my test fair I will...</p> <p>In my investigation I found out ...</p> <p>I know this because my results show that ...</p> <p>I would now like to know .....</p>	<p>I predict .....</p> <p>I think this because .....</p> <p>To make my test fair I will...</p> <p>I will do this because .....</p> <p>The variables I will change/keep the same are ...</p> <p>By doing this I expect .....</p>	

						<p>..... is the same as .....</p> <p><b>This is because ....</b></p> <p>..... is it different to .....</p> <p><b>This is because ....</b></p>	<p><b>I have found out ....</b></p> <p><b>Therefore my prediction was ...</b></p> <p><b>My prediction was correct because ....</b></p>	
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