

**Investigative Learning**  
**Curriculum Progression Map**

<b>Science</b>						
<b><u>Reception</u></b>	<b><u>Year 1</u></b>	<b><u>Year 2</u></b>	<b><u>Year 3</u></b>	<b><u>Year 4</u></b>	<b><u>Year 5</u></b>	<b><u>Year 6</u></b>
<b><u>Working Scientifically</u></b>						
<b>Asking questions and recognising that they can be answered in different ways</b>						
<b>Asking simple questions and recognising that they can be answered in different ways</b> <ul style="list-style-type: none"> <li>• While exploring the world, the children develop their ability to ask questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen). Where appropriate, they answer these questions.</li> <li>• The children answer questions developed with the teacher often through a scenario.</li> <li>• The children are involved in planning how to use resources provided to answer the questions using different types of enquiry, helping them to recognise that there are different ways in which questions can be answered.</li> </ul>			<b>Asking relevant questions and using different types of scientific enquiries to answer them</b> <ul style="list-style-type: none"> <li>• The children consider their prior knowledge when asking questions. They independently use a range of question stems. Where appropriate, they answer these questions.</li> <li>• The children answer questions posed by the teacher.</li> <li>• Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They recognise when secondary sources can be used to answer questions that cannot be answered through practical work. They identify the type of enquiry that they have chosen to answer their question.</li> </ul>		<b>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</b> <ul style="list-style-type: none"> <li>• Children independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their developed understanding following an enquiry.</li> <li>• Given a wide range of resources the children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They recognise how secondary sources can be used to answer questions that cannot be answered through practical work.</li> </ul>	
<b>Making observations and taking measurements</b>						
<b>Observing closely, using simple equipment</b> <ul style="list-style-type: none"> <li>• Children explore the world around them. They make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as magnifying glasses or digital microscopes, to make their observations.</li> <li>• They begin to take measurements, initially by comparisons, then using non-standard units.</li> </ul>			<b>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</b> <ul style="list-style-type: none"> <li>• The children make systematic and careful observations.</li> <li>• They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements.</li> </ul>		<b>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</b> <ul style="list-style-type: none"> <li>• The children select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale.</li> <li>• During an enquiry, they make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further</li> </ul>	

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		secondary sources (researching); in order to get accurate data (closer to the true value).
<b>Engaging in practical enquiry to answer questions</b>		
<p><b>Performing simple tests</b></p> <ul style="list-style-type: none"> <li>• The children use practical resources provided to gather evidence to answer questions generated by themselves or the teacher. They carry out: tests to classify; comparative tests; pattern seeking enquiries; and make observations over time.</li> </ul> <p><b>Identifying and classifying</b></p> <ul style="list-style-type: none"> <li>• Children use their observations and testing to compare objects, materials and living things. They sort and group these things, identifying their own criteria for sorting.</li> <li>• They use simple secondary sources (such as identification sheets) to name living things. They describe the characteristics they used to identify a living thing.</li> </ul>	<p><b>Setting up simple practical enquiries, comparative and fair tests</b></p> <ul style="list-style-type: none"> <li>• The children select from a range of practical resources to gather evidence to answer questions generated by themselves or the teacher.</li> <li>• They follow their plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking.</li> </ul> <p><b>Explanatory note</b></p> <p>A comparative test is performed by changing a variable that is qualitative e.g. the type of material, shape of the parachute. This leads to a ranked outcome.</p> <p>A fair test is performed by changing a variable that is quantitative e.g. the thickness of the material or the area of the canopy. This leads to establishing a causative relationship.</p>	<p><b>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</b></p> <ul style="list-style-type: none"> <li>• The children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample.</li> </ul>
<b>Recording and presenting evidence</b>		
<p><b>Gathering and recording data to help in answering questions</b></p> <ul style="list-style-type: none"> <li>• The children record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.</li> <li>• They record their measurements e.g. using prepared tables, pictograms, tally charts and block graphs.</li> <li>• They classify using simple prepared tables and sorting rings.</li> </ul>	<p><b>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</b></p> <p><b>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</b></p>	<p><b>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</b></p> <ul style="list-style-type: none"> <li>• The children decide how to record and present evidence. They record observations e.g. using annotated photographs, videos, labelled diagrams,</li> </ul>

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	<ul style="list-style-type: none"> <li>• The children sometimes decide how to record and present evidence. They record their observation e.g. using photographs, videos, pictures, labelled diagrams or writing. They record their measurements e.g. using tables, tally charts and bar charts (given templates, if required, to which they can add headings). They record classifications e.g. using tables, Venn diagrams, Carroll diagrams.</li> <li>• Children are supported to present the same data in different ways in order to help with answering the question.</li> </ul>	<p>observational drawings, labelled scientific diagrams or writing. They record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs. They record classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys.</p> <ul style="list-style-type: none"> <li>• Children present the same data in different ways in order to help with answering the question.</li> </ul>
<b>Answering questions and concluding</b>		
<p><b>Using their observations and ideas to suggest answers to questions</b></p> <ul style="list-style-type: none"> <li>• Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence e.g. observations they have made, measurements they have taken or information they have gained from secondary sources.</li> </ul> <p><b>Using their observations and ideas to suggest answers to questions</b></p> <ul style="list-style-type: none"> <li>• The children recognise 'biggest and smallest', 'best and worst' etc. from their data.</li> </ul>	<p><b>Identifying differences, similarities or changes related to simple scientific ideas and processes</b></p> <ul style="list-style-type: none"> <li>• Children interpret their data to generate simple comparative statements based on their evidence. They begin to identify naturally occurring patterns and causal relationships.</li> </ul> <p><b>Identifying differences, similarities or changes related to simple scientific ideas and processes</b></p> <ul style="list-style-type: none"> <li>• Children interpret their data to generate simple comparative statements based on their evidence. They begin to identify naturally occurring patterns and causal relationships.</li> </ul> <p><b>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</b></p>	<p><b>Identifying scientific evidence that has been used to support or refute ideas or arguments</b></p> <ul style="list-style-type: none"> <li>• Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer.</li> <li>• They talk about how their scientific ideas change due to new evidence that they have gathered.</li> <li>• They talk about how new discoveries change scientific understanding.</li> </ul> <p><b>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in</b></p>

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	<ul style="list-style-type: none"> <li>• They draw conclusions based on their evidence and current subject knowledge.</li> </ul>	<p><b>oral and written forms such as displays and other presentations</b></p> <ul style="list-style-type: none"> <li>• In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge.</li> </ul>
<b>Evaluating and raising further questions and predictions</b>		
	<p><b>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</b></p> <ul style="list-style-type: none"> <li>• They identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry.</li> </ul>	<p><b>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</b></p> <ul style="list-style-type: none"> <li>• They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used.</li> <li>• They identify any limitations that reduce the trust they have in their data.</li> </ul>

**Science – Units of Work**

<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
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**Animals including Humans**

<p>ELG: The Natural World</p> <p>Know the names of the main parts of the human body (head, arms, legs, body/torso).</p> <ul style="list-style-type: none"> <li>• Make simple observations of animals.</li> </ul>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <ul style="list-style-type: none"> <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 (fish, amphibians, reptiles, birds and mammals, including pets).</li> <li>• 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>	<p>Notice that animals, including humans, have offspring which grow into adults.</p> <ul style="list-style-type: none"> <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. <ul style="list-style-type: none"> <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. (Y2 - Living things and their habitats)</li> </ul> </li> </ul>	<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> <ul style="list-style-type: none"> <li>• Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <ul style="list-style-type: none"> <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>	<p>Describe the changes as humans develop to old age.</p> <ul style="list-style-type: none"> <li>• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats)</li> <li>• Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</li> </ul>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <ul style="list-style-type: none"> <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> <li>• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. (Y6 - Living things and their habitats)</li> <li>• Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)</li> </ul>
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**Living things and their habitats**

<p>ELG: The Natural World</p> <p>Know about some similarities and differences between living things.</p> <ul style="list-style-type: none"> <li>• Know the features of their own immediate environment.</li> <li>• Know how some environments might vary from one another.</li> </ul>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)</p> <ul style="list-style-type: none"> <li>• Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)</li> </ul>	<p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <ul style="list-style-type: none"> <li>• Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic</li> </ul>	<p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <ul style="list-style-type: none"> <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</li> </ul>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <ul style="list-style-type: none"> <li>• Describe the life process of reproduction in some plants and animals.</li> </ul>	<p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.</p>
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	<ul style="list-style-type: none"> <li>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)</li> <li>• Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans)</li> <li>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 – Animals, including humans)</li> <li>• Observe changes across the four seasons. (Y1 - Seasonal change)</li> </ul>	<p>needs of different kinds of animals and plants, and how they depend on each other.</p> <ul style="list-style-type: none"> <li>• Identify and name a variety of plants and animals in their habitats, including microhabitats.</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.             <ul style="list-style-type: none"> <li>• Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals including humans)</li> </ul> </li> </ul>		<p>that this can sometimes pose dangers to living things.</p> <ul style="list-style-type: none"> <li>• Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)</li> </ul>		<ul style="list-style-type: none"> <li>• Give reasons for classifying plants and animals based on specific characteristics.</li> <li>• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (Y6 - Evolution and inheritance)</li> <li>• Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Y6 - Evolution and inheritance)</li> </ul>
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**Evolution and inheritance**

		<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. (Y2 - Living things and their habitats)</p> <ul style="list-style-type: none"> <li>• Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)</li> </ul>	<p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks)</p> <ul style="list-style-type: none"> <li>• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)</li> </ul>	<p>Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)</p>	<p>Describe the life process of reproduction in some plants and animals. (Living things and their habitats - Y5)</p>	<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <ul style="list-style-type: none"> <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>
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**Plants**

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<p>ELG: The Natural World</p> <p>Talk about some similarities and differences in relation to plants.</p> <ul style="list-style-type: none"> <li>• Make simple observations of plants.</li> </ul>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <ul style="list-style-type: none"> <li>• Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <ul style="list-style-type: none"> <li>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> <li>• <b>Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)</b></li> </ul>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <ul style="list-style-type: none"> <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> <li>• Investigate the way in which water is transported within plants. <ul style="list-style-type: none"> <li>• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul> </li> </ul>	<p>Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats)</p> <ul style="list-style-type: none"> <li>• Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats)</li> <li>• <b>Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)</b></li> </ul>	<p>Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</p>	<p>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. (Y6 - Living things and their habitats)</p> <ul style="list-style-type: none"> <li>• Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)</li> </ul>
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### Materials

<p>ELG: The Natural World</p> <p>Explore a range of materials, including natural materials</p> <ul style="list-style-type: none"> <li>• Make objects from different materials, including natural materials</li> <li>• Observe, measure and record how materials change when heated and cooled</li> <li>• Compare how materials change over time and in different conditions</li> </ul>	<p>Distinguish between an object and the material from which it is made.</p> <ul style="list-style-type: none"> <li>• Identify and 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. <ul style="list-style-type: none"> <li>• Compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul> </li> </ul>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <ul style="list-style-type: none"> <li>• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p><b>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 - Rocks)</b></p> <ul style="list-style-type: none"> <li>• <b>Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks)</b></li> <li>• <b>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. (Y3 - Forces and magnets)</b></li> </ul>		<p>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.</p> <ul style="list-style-type: none"> <li>• Know 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 and evaporating.</li> <li>• Give reasons, based on evidence from comparative</li> </ul>	
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					<p>and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <ul style="list-style-type: none"> <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>Rocks</b>						
	<p>Distinguish between an object and the material from which it is made. (Y1 - Everyday materials)</p> <ul style="list-style-type: none"> <li>• Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials)</li> <li>• Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials)</li> <li>• Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials)</li> </ul>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)</p>	<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <ul style="list-style-type: none"> <li>• 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>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (Y6 - Evolution and inheritance)</p>



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**States of Matter**

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).
- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
- Recognise some common conductors and insulators, and associate metals with being good conductors. (Y4 - Electricity)

**Seasonal Change**

ELG: The Natural World

- Play and explore outside in all seasons and in different weather
- Observe living things throughout the year

Observe changes across the four seasons.

- Observe and describe weather associated with the seasons and how day length varies.

Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light)

Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and space)

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<b>Forces</b>						
<p>ELG: The Natural World</p> <p>Explore how to change how things work</p> <ul style="list-style-type: none"> <li>Explore how the wind can move objects</li> <li>Explore how objects move in water</li> </ul>		<p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials)</p>	<p>Compare how things move on different surfaces.</p> <ul style="list-style-type: none"> <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. <ul style="list-style-type: none"> <li>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul> </li> </ul>		<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <ul style="list-style-type: none"> <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>Light</b>						
<p>ELG: The Natural World</p> <p>Explore shadows</p> <ul style="list-style-type: none"> <li>Explore rainbows</li> </ul>	<p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)</p> <ul style="list-style-type: none"> <li>Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials)</li> </ul>		<p>Recognise that they need light in order to see things and that dark is the absence of light.</p> <ul style="list-style-type: none"> <li>Notice that light is reflected from surfaces.</li> <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 an opaque object.</li> </ul>		<p>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. (Y5 - Properties and changes of materials)</p>	<p>Recognise that light appears to travel in straight lines.</p> <ul style="list-style-type: none"> <li>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>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. <ul style="list-style-type: none"> <li>Use the idea that light travels in straight lines to explain why shadows have</li> </ul> </li> </ul>

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			<ul style="list-style-type: none"> <li>Find patterns in the way that the size of shadows change.</li> </ul>			the same shape as the objects that cast them.
<b><u>Sound</u></b>						
<p>ELG: The Natural World</p> <p>Listen to sounds outside and identify the source</p> <ul style="list-style-type: none"> <li>Make sounds</li> </ul>	<p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)</p>			<p>Identify how sounds are made, associating some of them with something vibrating.</p> <ul style="list-style-type: none"> <li>Recognise that vibrations from sounds travel through a medium to the ear.</li> <li>Find patterns between the pitch of a sound and features of the object that produced it.</li> <li>Find patterns between the volume of a sound and the strength of the vibrations that produced it.               <ul style="list-style-type: none"> <li>Recognise that sounds get fainter as the distance from the sound source increases.</li> </ul> </li> </ul>		
<b><u>Electricity</u></b>						
				<p>Identify common appliances that run on electricity.</p> <ul style="list-style-type: none"> <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 associate this with whether or</li> </ul>		<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <ul style="list-style-type: none"> <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>

**Investigative Learning  
Curriculum Progression Map**

				not a lamp lights in a simple series circuit. <ul style="list-style-type: none"> <li>Recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul>		
<b>Earth and Space</b>						
<p>ELG: The Natural World</p> <p>Learn about the Solar System and stars</p> <ul style="list-style-type: none"> <li>Learn about space travel</li> </ul>	<p>Observe changes across the four seasons. (Y1 - Seasonal changes)</p> <ul style="list-style-type: none"> <li>Observe and describe weather associated with the seasons and how day length varies. (Y1 - Seasonal changes)</li> </ul>				<p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <ul style="list-style-type: none"> <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>	

<b>Design &amp; Technology</b>						
<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<b>Mechanisms</b>						
<p>ELG</p> <p>Fine Motor Skills</p>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate ideas based on simple design criteria and</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate initial ideas and simple design criteria through</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate realistic ideas through discussion, focusing on the needs of the user.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Use annotated sketches and prototypes to</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Record ideas using annotated diagrams.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Devise step by step plans which can be read / followed by someone else.</li> </ul>

## Investigative Learning Curriculum Progression Map

<p>Use a range of small tools, including scissors, paintbrushes and cutlery.</p> <p>Begin to show accuracy and care when drawing.</p> <p><b>Expressive Arts &amp; Design</b> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Share their creations, explaining the process they have used.</p>	<p>their own experiences, explaining what they could make.</p> <ul style="list-style-type: none"> <li>• Develop, model and communicate their ideas through mock-ups with card and paper.</li> <li>• Explore ideas by rearranging materials.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Plan by suggesting what to do next.</li> <li>• Select and use tools, explaining their choices, to cut, shape and join paper and card.</li> <li>• Use simple finishing techniques suitable for the product they are creating.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Explore a range of existing books and everyday products that use simple sliders and levers.</li> <li>• Evaluate their product by discussing good and bad points, and things they like and don't like.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Explore and use sliders and levers.</li> <li>• Understand that different mechanisms produce different types of movement.</li> </ul>	<p>talking and using own experiences.</p> <ul style="list-style-type: none"> <li>• Develop and communicate ideas through drawings and mock-ups.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.</li> <li>• Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Explore and evaluate a range of products with wheels and axles.</li> <li>• Evaluate their ideas throughout and their products against original criteria.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Explore and use wheels, axles and axle holders.</li> <li>• Distinguish between fixed and freely moving axles.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Order the main stages of making.</li> <li>• Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.</li> <li>• Select from and use finishing techniques suitable for the product they are creating.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Investigate and analyse books and, where available, other products with lever and linkage mechanisms.</li> <li>• Evaluate their own products and ideas against criteria and user needs, as they design and make.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Understand and use lever and linkage mechanisms.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<p>develop, model and communicate ideas.</p> <ul style="list-style-type: none"> <li>• Consider aesthetic qualities of materials chosen.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Select from techniques for different parts of the process.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Consider and explain how the finished product could be improved.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Distinguish between fixed and loose pivots.</li> <li>• Use linkages to make movement larger or more varied.</li> </ul>	<ul style="list-style-type: none"> <li>• Use models, kits and drawings to help formulate design ideas.</li> <li>• Sketch and model alternative ideas.</li> <li>• Decide which design idea to develop.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Develop one idea in depth.</li> <li>• Select from and use a wide range of tools.</li> <li>• Cut accurately and safely to a marked line.</li> <li>• Select from and use a wide range of materials.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Research and evaluate existing products.</li> <li>• Consider user and purpose.</li> <li>• Consider and explain how the finished product could be improved related to design criteria.</li> <li>• Investigate key events and individuals in design and technology.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Understand that mechanical systems have an input, process and an output.</li> <li>• Use electrical systems such as motors.</li> </ul>	<ul style="list-style-type: none"> <li>• Use exploded diagrams and cross-sectional diagrams to communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Make prototypes.</li> <li>• Use researched information to inform decisions.</li> <li>• Produce detailed lists of ingredients / components / materials and tools.</li> <li>• Refine their product – review and rework / improve.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Identify the strengths and weaknesses of their design ideas.</li> <li>• Report using correct technical vocabulary.</li> <li>• Discuss how well the finished product meets the design criteria having tested on/discussed outcomes with the user.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Understand how cams can be used to produce different types of movement and change the direction of movement.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>
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**Investigative Learning  
Curriculum Progression Map**

	<ul style="list-style-type: none"> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>					
<b>Textiles</b>						
<p><b>ELG</b></p> <p><b>Fine Motor Skills</b> Use a range of small tools, including scissors, paintbrushes and cutlery.</p> <p>Begin to show accuracy and care when drawing.</p> <p><b>Expressive Arts &amp; Design</b> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Share their creations, explaining the process they have used.</p>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Design a functional and appealing product for a chosen user and purpose based on simple design criteria.</li> <li>• Generate, develop, model and communicate their ideas as appropriate through talking and drawing</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>▪ Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>▪ Explore and evaluate a range of existing textile products relevant to the project being undertaken.</li> <li>▪ Talk about the effectiveness of their own product throughout the process</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>▪ Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</li> <li>▪ Explore and select, based on intended user and purpose, different finishing techniques e.g. using painting, fabric crayons,</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Design a functional and appealing product for a chosen user and purpose based on simple design criteria.</li> <li>• Generate, develop, model and communicate their ideas as appropriate through templates, mock-ups and information and communication technology.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing</li> <li>• Select from and use textiles according to their characteristics.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>▪ Explore and evaluate a range of existing textile products relevant to the project being undertaken.</li> <li>▪ Evaluate their ideas throughout and their final products against original design criteria.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>▪ Understand how simple 3-D textile products are made, using a template to create two identical shapes.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Develop more than one design or adaptation of an initial design.</li> <li>• Plan a sequence of actions to make a product.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Select from a range of tools for cutting, shaping, joining and finishing.</li> <li>• Use tools with accuracy.</li> <li>• Select from materials according to their functional properties.</li> <li>• Use appropriate finishing techniques.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Investigate similar products to the one to be made to give starting points for a design.</li> <li>• Decide which design idea to develop.</li> </ul> <p>Consider and explain how the finished product could be improved.</p> <ul style="list-style-type: none"> <li>• Discuss how well the finished product meets the user's design criteria.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Use an increasingly appropriate technical vocabulary for tools materials and their properties.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Consider aesthetic qualities of materials chosen.</li> <li>• Use annotated sketches and prototypes to develop, model and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Select from techniques for different parts of the process.</li> <li>• Prepare pattern pieces as templates for their design.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Consider and explain how the finished product could be improved.</li> <li>• Identify the strengths and weaknesses of their design ideas in relation to purpose / user.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Know how to strengthen, stiffen and reinforce existing fabrics.</li> <li>• Understand how to securely join two pieces of fabric together.</li> <li>• Understand the need for patterns and seam allowances.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Record ideas using annotated diagrams.</li> <li>• Use models, kits and drawings to help formulate design ideas.</li> <li>• Sketch and model alternative ideas.</li> <li>• Decide which design idea to develop.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Develop one idea in depth.</li> <li>• Select from and use a wide range of tools.</li> <li>• Cut accurately and safely to a marked line.</li> <li>• Select from and use a wide range of materials.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Research and evaluate existing products.</li> <li>• Consider user and purpose.</li> <li>• Consider and explain how the finished product could be improved related to design criteria.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Fabrics can be strengthened, stiffened and reinforced where appropriate.</li> <li>• Understand pattern layout with textiles.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Plan the sequence of work.</li> <li>• Devise step by step plans which can be read / followed by someone else.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Make prototypes.</li> <li>• Use researched information to inform decisions.</li> <li>• Produce detailed lists of ingredients / components / materials and tools.</li> <li>• Refine their product – review and rework / improve.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Discuss how well the finished product meets the design criteria having tested on/discussed outcomes with the user.</li> <li>• Understand how key people have influenced design in a variety of contexts.</li> <li>• Investigate key events and individuals in design and technology.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</li> </ul>

**Investigative Learning**  
**Curriculum Progression Map**

	<p>stitching, sequins, buttons and ribbons.</p>	<ul style="list-style-type: none"> <li>▪ Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</li> <li>▪ Explore and select, based on intended user and purpose, different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.</li> </ul> <p>Know and use technical vocabulary relevant to the project.</p>	<ul style="list-style-type: none"> <li>• Understand seam allowance.</li> <li>• Prototype a product.</li> <li>• Sew on buttons and make loops.</li> </ul>			
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**Food Technology**

<p><b>ELG</b></p> <p><b>Fine Motor Skills</b> Use a range of small tools, including scissors, paintbrushes and cutlery.</p> <p><b>Expressive Arts &amp; Design</b> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Share their creations, explaining the process they have used.</p>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Generate initial ideas and design criteria through investigating a variety of fruit and vegetables</li> <li>• Communicate these ideas through talk</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Use simple utensils and equipment to cut and slice safely</li> <li>• Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.</li> </ul> <p><b>Technical knowledge and understanding</b></p>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Design appealing products for a particular user based on simple design criteria.</li> <li>• Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</li> <li>• Communicate these ideas through drawings.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Use simple utensils and equipment to peel, squeeze, grate and chop safely.</li> <li>• Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Generate and clarify more than one idea through discussion with peers and adults to develop design criteria including appearance and taste, for an appealing product for a particular user and purpose.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Select and use appropriate utensils and equipment to prepare and combine ingredients.</li> <li>• Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Carry out sensory evaluations of a variety of ingredients and products and research the needs of the user.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.</li> <li>• Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Plan the main stages of a recipe, listing ingredients, utensils and equipment.</li> <li>• Select and use appropriate utensils and equipment to prepare and combine ingredients.</li> <li>• Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Explore a range of initial ideas, and choose one design to develop, linked to user and purpose.</li> <li>• Use words, annotated sketches and information and communication technology as appropriate to develop and record ideas.</li> <li>•</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> <li>• Make, decorate and present the food product appropriately for the intended user and purpose.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Research and evaluate existing products.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Use words, annotated sketches and information and communication technology as appropriate to plan a sequence of work, develop and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Write a step-by-step recipe, including a list of ingredients, equipment and utensils which can be followed by others.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Identify the strengths and weaknesses of their design ideas.</li> <li>• Report using correct technical vocabulary.</li> <li>• Discuss how well the finished product meets the design criteria having tested on/discussed outcomes with the user.</li> <li>• Understand how key chefs have influenced eating habits</li> </ul>
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**Investigative Learning  
Curriculum Progression Map**

	<ul style="list-style-type: none"> <li>• Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The Eatwell plate</i>.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate ideas and finished products against design criteria, including intended user and purpose.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</li> <li>• Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The eatwell plate</i>.</li> <li>• Know and use technical and sensory vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Decide on one design idea and evaluate the ongoing work and final product with reference to the design criteria.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Follow instructions / recipes.</li> <li>• Know how to use appropriate equipment and utensils to prepare and combine food.</li> <li>• Begin to understand the food groups on the Eatwell Plate.</li> </ul>	<p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.</li> <li>• Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</li> <li>• Understand how key chefs have influenced eating habits to promote varied and healthy diets.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Join and combine a widening range of ingredients.</li> <li>• Select and prepare foods for a particular purpose.</li> <li>• Know where and how ingredients are grown and processed.</li> </ul>	<p>to promote varied and healthy diets.</p> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Understand and apply the principles of a healthy and varied diet.</li> <li>• Choose ingredients to support healthy eating choices when designing their food products.</li> <li>• Prepare and cook a variety of mostly savoury dishes using a range of cooking techniques.</li> </ul>
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**Computing and Online Safety**

**Computer Science**

<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
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**Investigative Learning  
Curriculum Progression Map**

	Understand what algorithms are and develop strategies to help find bugs in them. Make very simple programs.	Use algorithms and know that they can be implemented as programs on devices. Know what debugging is and can find errors in their programs. Understand that programs execute by following a precise set of instructions. Create simple programs and further develop their strategies and logical thinking to find bugs and predict outcomes in their algorithms and programs	Plan and write algorithms and programs using sequence and repetition and further develop their computational thinking strategies to solve problems and errors in their algorithms and programs. Have knowledge and experience of using a range of different inputs and outputs and a basic understanding of the binary system. Describe some of components of a computer network and some of the ways in which computer networks can be used	Design and write more complex algorithms and programs using sequence, repetition and selection. Further develop their computational thinking to help debug their programs and design and solve problems and tasks. Have a simple understanding of how search engines work. Develop their understanding of inputs, binary and outputs further, demonstrating how they can use programs to control external devices such as sensors, motors and robots. Understand the difference between the internet and World Wide Web.	Design and write programs using sequence, repetition, selection and variables. Develop greater understanding of how to use selection and repetition in more complex programs. Understand how search engines work. Further develop their computational thinking showing they can plan and decompose tasks; explain how the algorithms they write work and correct errors in their programs. Plan and write programs to control external devices such as sensors and motors and can explain about the inputs and outputs used.	Know how search engines work and what 'ranking' is when related to search engines. Design and create more complex programs using sequence, repetition, selection and variables appropriately. Develop their computational thinking and can demonstrate that they can decompose and evaluate their tasks and correct errors in their algorithms and programs.
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**Digital Literacy**

<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
	Recognise common uses of information technology beyond school. Understand the rules and responsibilities outlined by the school's acceptable use policy and begin to understand where to go for help when pupils have concerns. Develop an understanding of how to keep their personal information private and understand they need to use technology safely and respectfully.	Know their responsibilities from their school's acceptable use policy and how to report any concerns they have. Recognise situations using technology and the internet involving content and contact that are not safe and know where to go for help. Begin to develop an understanding of the importance of computers and the internet to communicate. Develop their knowledge of the technology used in everyday life in a	Use technology safely and respectfully and have an understanding of how to keep information secure. Realise the importance of reporting any concerns they have using the internet and other communication technologies and know some ways of they can do it. Develop an understanding of what is acceptable and unacceptable online behaviour. Realise that not all information on the internet is trustworthy and	Use technology respectfully, responsibly and safely, knowing how to keep their information and passwords secure. Know different ways of reporting concerns about content and contact involving the internet and other communication technologies. Have a greater understanding of what is acceptable and unacceptable online behaviour.	Use technology safely, respectfully and responsibly and continue to develop skills to identify risks involved with contact and content including developing an understanding of digital footprints and online reputation. Know a range of ways of reporting concerns about content and contact involving the internet and other communication technologies, including online bullying and online grooming. Understand what acceptable and unacceptable online behaviour is.	Competent users of technology using it safely, respectfully and responsibly and know about self-image and identity. Demonstrate that they can identify the risks involved with content and contact and they know a wide range of ways of reporting any concerns they have. Understand what acceptable and unacceptable online behaviour is. Use strategies to verify and evaluate the reliability and accuracy of information on the internet and understand what copyright and

**Investigative Learning  
Curriculum Progression Map**

		range of situations and are able to discuss their ideas.	there is a need to verify its reliability.	Start to develop strategies to verify the reliability and accuracy of information on the internet and develop an awareness of copyright.	Use strategies to verify the reliability and accuracy of information on the internet such as fake news and understand copyright	plagiarism is and how it relates to their work.
<b>Information Technology</b>						
<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
	Use technology with support, to create, store and retrieve digital content such as text and images. Use a simple search to find information or files. Develop understanding of how simulations work through exploring simple examples (optional).	Use technology with purpose to create, store, organise, retrieve and manipulate digital content. Learn to make a range of simple digital assets such as presentations, movies, audio files and graphs. Navigate the web and carry out simple searches using suitable search engines and begin to understand that not everything on the internet is true. Use simple simulations and understand how they work (optional).	Use a variety of software and devices to create digital assets such as programs, graphs and multimedia content for a defined purpose. Develop their search strategies further by refining their use of keywords and starting to use appropriate key phrases and questions. Use more complex simulations and understand the effects of changing variables.	Use and combine a variety of software and devices with increasing independence, to create a range of digital assets such as programs, databases, systems and multimedia content. Understand how search operators (e.g. Boolean operators) can change searches and select appropriate information for their tasks. Use models and simulations to produce graphs and explore patterns and relationships. Use programming software to make simple simulations (CS).	Select, use and combine a range of software and use a wider range of devices to create a variety of digital assets such as programs, systems, databases, spreadsheets and multimedia content for a defined purpose. Understand about the use of operators in searching and continue developing their effective search techniques by using different operators in their searches. Create simple models/simulations to investigate real life problems. Use programming software to make simulations (CS)	Independently select, use and combine a wide range of software on a variety of devices. Design and create a range of digital assets such as programs, systems and multimedia content for a defined purpose and audience. Use advanced searches and a range of operators in searches. Create models to investigate real life problems, using their knowledge to make predictions.
<b>Online Safety – Self Image and identity</b>						
<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
I can recognise online or offline that anyone can say no.	If something happens online that makes them feel sad, worried, uncomfortable or frightened they can give examples of when and how to speak to an adult they can trust.	Can explain how other may look and act different online. Give examples of issues that might hurt others, can give examples of how to get help.	Explain the term identity and explain how others can represent themselves differently online. Explain ways in which someone might change their identity i.e. social media, gaming, using an avatar.	Explain how online behaviour can be different to my offline identity. Describe positive ways to interact with others online. Can explain how others online can pretend to be someone else and suggest why.	Demonstrate responsible choices about their online identity, depending on context.	Describe ways in which media can shape ideas about gender. Challenge and explain why it is important to reject inappropriate messages about gender online. Describe issues online that might make themselves or others feel sad, worried,

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						uncomfortable or frightened. Know and can give examples of how they might get help, both on and offline.
<b><u>Online Safety – Online Reputation</u></b>						
<b><u>Reception</u></b>	<b><u>Year 1</u></b>	<b><u>Year 2</u></b>	<b><u>Year 3</u></b>	<b><u>Year 4</u></b>	<b><u>Year 5</u></b>	<b><u>Year 6</u></b>
Identify ways people can put information on the internet.	Recognise that information can stay online and could be copied. Describe what information they should not put online without asking a trusted adult first.	Explain how information put online about them can last for a long time. Know who to talk to if they think someone has made a mistake about putting something online.	Recognise the need to be careful before sharing anything about themselves or others online. Know who they should ask if they are not sure if they should put something online.	Describe how others can find out information about them by looking online. Explain ways that some of the information about them online could have been created, copied or shared by others.	Search for information about an individual online and create a summary report of the information they find. Describe ways that information about people online can be used by others to make judgments about an individual.	Explain the ways in which anyone can develop a positive online reputation. Explain strategies anyone can use to protect their digital personality and online reputation (including degrees of anonymity).
<b><u>Online Safety – Online Bullying</u></b>						
<b><u>Reception</u></b>	<b><u>Year 1</u></b>	<b><u>Year 2</u></b>	<b><u>Year 3</u></b>	<b><u>Year 4</u></b>	<b><u>Year 5</u></b>	<b><u>Year 6</u></b>
Describe some ways that people can be unkind online and offer examples how it might make others feel.	Understand how bullying can make someone feel.	Talk about how someone can/would get help about being bullied online or offline.	Describe rules about how to behave online and how to follow them. Know that the same principles apply to online friendships as to face-to face relationships.	Identify some online technologies where bullying might take place. Describe ways people can be bullied through a range of media (e.g. image, video, text, chat). Explain why people need to think carefully about how content they share might affect others, their feelings and how it may affect how others feel about them (their reputation).	Recognise when someone is upset, hurt or angry online. Describe how what one person perceives as playful joking and teasing (including ‘banter’) might be experienced by others as bullying. Describe how to get help for someone that is being bullied online and assess when they need to do or say something or tell someone. Explain how to report online bullying and how to block abusive users. Know about and how to access helpline services that can support people experience bullying (e.g. Childline).	Know about the impact of bullying, including offline and online, recognise the effects of actions on others and the consequences of hurtful behaviour. Know how to capture online bullying content as evidence (e.g. screengrab, URL, profile) to share with others who can help. Identify a range of ways to report concerns both in school and at home about online bullying

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**Online Safety – Copyright and Ownership**

<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
Know that work I create belongs to me. Name my work so that others know it belongs to me.	Explain why work they create using technology belongs to them. Say why content / work belongs to them (e.g. 'it is my idea' or 'I designed it').	Describe why other people's work belongs to them. Recognise that content on the internet may belong to other people. Save work so that others know it belongs to them (e.g. filename, name on content).	Explain why copying someone else's work from the internet without permission can cause problems. Give examples of what those problems might be.	Explain why they need to consider who owns it and whether they have the right to reuse it, when searching on the internet for content to use.	Assess and justify when it is acceptable to use the work of others. Give examples of content that is permitted to be reused.	Demonstrate the use of search tools to find and access online content which can be reused by others. Demonstrate how to make references to and acknowledge sources they have used from the internet.

**Online Safety – Privacy and Security**

<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
Identify some simple examples of personal information (e.g. name, address, birthday, age, location). Describe the people I can trust and can share this with; I can explain why I can trust them.	Recognise more detailed examples of information that is personal to them (e.g. where I live, my family's names, where I go to school). Explain why they should always ask a trusted adult before they share any information about myself online. Explain how passwords can be used to protect information and devices.	Describe how online information about them could be seen by others. Describe and explain some rules for keeping their personal information private. Explain what passwords are and can use passwords for their accounts and devices. Explain how many devices in their home could be connected to the internet and list some of those devices.	Give reasons why they should only share information with people they choose to and can trust. Explain that if they are not sure or feel pressured, they should ask a trusted adult. Give reasons why passwords are important. Describe simple strategies for creating and keeping passwords private. Describe how connected devices can collect and share personal information with others	Explain what a strong password is and demonstrate how to create one. Describe strategies for keeping my personal information private, depending on context. Explain that others online can pretend to be them or other people, including their friends. Suggest reasons why they might do this. Explain how internet use can be monitored (including adult supervision). Know what the digital age of consent is and the impact this has on online services asking for consent.	Create and use strong and secure passwords. Know what to do if a password is lost or stolen. Explain how free apps or services may read and share their private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. Explain how and why some apps may request or take payment for additional content (e.g. in-app purchases, lootboxes) and explain why they should seek permission from a trusted adult before purchasing.	Know to use different passwords for a range of online services. Describe effective strategies for managing those passwords (e.g. password managers, acronyms, stories). Explain what app permissions are and can give some examples from the technology or services they use. Describe simple ways to increase privacy on apps and services that provide privacy settings. Describe ways in which some online content targets people to gain money or information illegally. Describe strategies to help them identify such content (e.g. scams, phishing). Know that online services have terms and conditions that govern their use.

