

Science

WORKING SCIENTIFICALLY - QUESTIONING						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Asking simple questions and recognising that they can be answered in different ways 		<ul style="list-style-type: none"> Asking relevant questions and using different types of scientific enquiries to answer them 		<ul style="list-style-type: none"> Identifying scientific evidence that has been used to support or refute ideas or arguments. 	
Skills	Ask simple scientific questions.	Ask and answer scientific questions about the world around them.	Ask questions about the world around them and explain that they can be answered in different ways.	Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them.	Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further questions and predictions.	Report on and validate their findings, answer questions and justify their methods, opinions and conclusions, and use their results to suggest improvements to their methodology, separate facts from opinions, pose further questions and make predictions for what they might observe.
Knowledge	Question words include what, why, how, when, who and which.	Questions can help us find out about the world	Questions can help us find out about the world and can be answered in different ways.	Questions can help us find out about the world and can be answered using scientific enquiry.	The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected.	The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered, using correct, precise terminology and collected evidence.

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ILP	Autumn 1 - Superheroes	Autumn 1 – Towers, Tunnels and Turrets	Autumn 1 – Tribal Tales	Autumn 1 – Traders and Raders	Autumn 1 – Pharaohs	Autumn 1 – Hola Mexico
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WORKING SCIENTIFICALLY – PLANNING AND PREDICTING						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Performing simple tests 		<ul style="list-style-type: none"> Setting up simple practical enquiries, comparative and fair tests 		<ul style="list-style-type: none"> Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary 	
Skills	With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen.	Follow a set of instructions to perform a range of simple tests, making simple predictions for what might happen and suggesting ways to answer their questions.	Set up and carry out some simple, comparative and fair tests, making predictions for what might happen.	Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately.	Ask a wide range of relevant scientific questions that broaden their understanding of the world around them and identify how they can answer them. Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding.	Ask and answer deeper and broader scientific questions about the local and wider world that build on and extend their own and others' experiences and knowledge. Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and data to collect and making predictions based on prior knowledge and understanding.

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Knowledge	Simple tests can be carried out by following a set of instructions.	Tests can be carried out by following a set of instructions. A prediction is a guess for what might happen in an investigation	Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an investigation based on some prior knowledge.	Scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what might happen in an investigation, based on some prior knowledge or understanding. A fair test is one in which only one variable is changed and all others remain constant.	Questions can help us find out about the world and can be answered using a range of scientific enquiries. A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.	Questions can help us find out about the world and can be answered using a range of scientific enquiries, including fair tests, research and observation. A method is a set of clear instructions for how to carry out a scientific investigation, including what equipment to use and observations to make. A variable is something that can be changed during a fair test. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.
ILP	Autumn 2 – Splendid Skies	Autumn 2 – Muck, Mess and Mixtures	Autumn 2 - Tremors	Autumn 2 – Misty Mountain Sierra	Autumn 2 - Stargazers	Autumn 2 – Darwin’s Delights

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WORKING SCIENTIFICALLY – OBSERVING AND MEASURING						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Observing closely, using simple equipment 		<ul style="list-style-type: none"> Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers 		<ul style="list-style-type: none"> Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate 	
Skills	With support, use simple equipment to measure and make observations.	Use simple equipment to measure and make observations.	<p>Take measurements in standard units, using a range of simple equipment.</p> <p>Make increasingly careful observations, identifying similarities, differences and changes, and making simple connections.</p>	<p>Take accurate measurements in standard units, using a range of equipment.</p> <p>Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.</p>	<p>Take increasingly accurate measurements, in standard units, using a range of chosen equipment.</p> <p>Within a group, decide which observations to make, when and for how long, and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect.</p>	<p>Take accurate, precise and repeated measurements in standard units, using a range of chosen equipment.</p> <p>Independently decide which observations to make, when and for how long and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect.</p>
Knowledge	Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses.	Simple equipment is used to take measurements and observations. E.g. timers, hand lenses, metre sticks and trundle wheels.	Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C) and	Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours),	Specialised equipment is used to take measurements in standard units. Examples include data loggers plus sensors, such as light (lux),	Specialised equipment is used to take accurate measurements in standard units. Examples include data loggers plus sensors,

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			<p>metre sticks (millimetres, centimetres and metres). Taking repeat readings can increase the accuracy of the measurement.</p> <p>An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features.</p>	<p>thermometers (°C), and metre sticks, rulers or trundle wheels (millimetres, centimetres, metres).</p> <p>An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.</p>	<p>sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C), and measuring tapes (millimetres, centimetres, metres).</p> <p>An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time.</p>	<p>such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C) and measuring tapes (millimetres, centimetres, metres).</p> <p>An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time, identify processes and make comparisons.</p>
ILP	Spring 1 – Memory Box	Spring 1 – Land Ahoy!	Spring 1 - Predator	Spring 1 - Potions	Spring 1 – Alchemy Island	Spring 1 – A Child’s War

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WORKING SCIENTIFICALLY – EXPERIMENTING						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Identifying and classifying 		<ul style="list-style-type: none"> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions 		<ul style="list-style-type: none"> Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs 	
Skills	Observe objects, materials, living things and changes over time, sorting and grouping them based on their features.	Observe objects, materials, living things and changes over time, sorting and grouping them based on their features and explaining their reasoning.	Gather and record findings in a variety of ways (diagrams, tables, charts and graphs) with increasing accuracy.	Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).	Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models).	Choose an appropriate approach to recording accurate results, including scientific diagrams, labels, timelines, classification keys, tables, models and graphs (bar, line and scatter), linking to mathematical knowledge.
Knowledge	Objects, materials and living things can be looked at and compared.	Objects, materials and living things can be looked at, compared and grouped according to their features.	Data can be recorded and displayed in different ways, including tables, charts, graphs and labelled diagrams. Data can be used to provide evidence to answer questions.	Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams.	Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams.	Data can be recorded and displayed in different ways, including tables, bar and line charts, scatter graphs, classification keys and labelled diagrams.
ILP	Spring 2 – Bright Lights, Big City	Spring 2 – Street Detectives	Spring 2 - Scrumdiddlyumptious	Spring 2 – Burps, Bottoms and Bile	Spring 2 – Off with Her Head!	Spring 2 – Frozen Kingdom

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WORKING SCIENTIFICALLY – ANALYSING						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Using their observations and ideas to suggest answers to questions 		<ul style="list-style-type: none"> Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and table. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions 		<ul style="list-style-type: none"> Using test results to make predictions to set up further comparative and fair tests 	
Skills	With support, gather and record simple data in a range of ways (data tables, diagrams, Venn diagrams)	Use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy.	<p>Gather and record findings in a variety of ways (diagrams, tables, charts and graphs) with increasing accuracy.</p> <p>Use suitable vocabulary to talk or write about what they have done, what the purpose was and, with help, draw a simple conclusion based on evidence collected, beginning to identify next steps or improvements.</p>	<p>Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).</p> <p>Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>	Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further questions and predictions.	Report on and validate their findings, answer questions and justify their methods, opinions and conclusions, and use their results to suggest improvements to their methodology, separate facts from opinions, pose further questions and make predictions for what they might observe.
Knowledge	Data can be recorded and displayed in different ways, including tables,	Data can be recorded and displayed in different ways, including tables, charts,	Data can be recorded and displayed in different ways, including tables, charts, graphs	Data can be recorded and displayed in different ways, including tables, charts,	The results are information, such as measurements or observations, that have	The results are information, such as measurements or observations, that

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	pictograms and drawings.	pictograms and drawings.	and labelled diagrams. Data can be used to provide evidence to answer questions. Results are information that has been discovered as part of an investigation. A conclusion is the answer to a question that uses the evidence collected.	graphs, keys and labelled diagrams. Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.	been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected.	have been collected during an investigation. A conclusion is an explanation of what has been discovered, using correct, precise terminology and collected evidence.
ILP	Summer 1 - Dinosaurs	Summer 1 – Wriggle and Crawl	Summer 1 – Gods and Mortals	Summer 1 – Road Trip USA!	Summer 1 - Allotment	Summer 1 – Gallery Rebels

WORKING SCIENTIFICALLY – EXPLAINING AND EVALUATING						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Gathering and recording data to help in answering questions. 		<ul style="list-style-type: none"> Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identifying differences, similarities or changes related to simple scientific ideas and processes Using straightforward scientific evidence to answer questions or to support their findings. 		<ul style="list-style-type: none"> 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 	
Skills	<p>Talk about what they have done and say, with help, what they think they have found out.</p> <p>Observe the local environment</p>	<p>Begin to notice patterns and relationships in their data and explain what they have done and found out using simple scientific language.</p>	<p>Use suitable vocabulary to talk or write about what they have done, what the purpose was and, with help, draw a simple conclusion based on evidence collected, beginning to identify</p>	<p>Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps,</p>	<p>Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further</p>	<p>Report on and validate their findings, answer questions and justify their methods, opinions and conclusions, and use their results to suggest improvements</p>

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	throughout the year and ask and answer questions about living things and seasonal change.		next steps or improvements. Make increasingly careful observations, identifying similarities, differences and changes, and making simple connections.	improvements and further questions. Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.	questions and predictions.	to their methodology, separate facts from opinions, pose further questions and make predictions for what they might observe.
Knowledge	The results are information that has been found out from an investigation. The local environment is a habitat for living things and can change during the seasons.	The results are information that has been found out from an investigation and can be used to answer a question.	Results are information that has been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected. An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features.	Results are information, such as data or observations, that has been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected. An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.	The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected.	The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered, using correct, precise terminology and collected evidence.
ILP	Summer 2 – Paws, Claws and Whiskers	Summer 2 - Beachcombers	Summer 2 - Flow	Summer 2 – I am Warrior!	Summer 2 – Scream Machine	Summer 2 – Tomorrow’s World

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PLANTS						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. 	<ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. 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. Investigate the way in which water is transported within plants. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 		<ul style="list-style-type: none"> Describe the life process of reproduction in some plants. 	
Skills	Identify, compare, group and sort a variety of common plants,	Observe and describe how seeds and bulbs change over time as	Name and describe the functions of the different parts of flowering plants		Group and sort plants by how they reproduce.	

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	<p>including deciduous and evergreen trees, based on observable features.</p> <p>Label and describe the basic structure of a variety of common plants.</p>	<p>they grow into mature plants.</p> <p>Describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>(roots, stem, leaves and flowers).</p> <p>Describe the requirements of plants for life and growth (air, light, water, nutrients and room to grow) and how they vary from plant to plant.</p> <p>Investigate how water is transported within plants. Draw and label the life cycle of a flowering plant.</p>		<p>Label and draw the parts of a flower involved in sexual reproduction in plants (stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal).</p>	
Knowledge	<p>Plants are living things. Common plants include the daisy, daffodil and grass. Trees are large, woody plants and are either evergreen or deciduous. Trees that lose their leaves in the autumn are called deciduous trees (e.g. oak, beech and rowan). Trees that keep their leaves all year round are called evergreen trees (e.g. holly and pine).</p>	<p>Plants grow from seeds and bulbs. Seeds and bulbs need nutrients from soil, water and warmth to start growing (germinate). As the plant grows bigger, it develops leaves and flowers.</p> <p>Plants need water, light and a suitable temperature to grow and stay healthy. Without any one of these things, they will</p>	<p>The plant's roots anchor the plant in the ground and transport water and minerals from the ground to the plant. The stem (or trunk) support the plant above the ground. The leaves collect energy from the Sun and make food for the plant. Flowers make seeds to produce new plants.</p> <p>Different plants have different needs</p>		<p>Flowering plants reproduce sexually. The flower is essential for sexual reproduction. Other plants reproduce asexually. Bulbs, corms and rhizomes are some parts used in asexual reproduction in plants.</p> <p>Parts of a flower include the stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and</p>	

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	<p>The basic plant parts include root, stem, leaf, flower, petal, fruit, seed and bulb. Trees have a woody stem called a trunk.</p>	<p>die.</p>	<p>depending on their habitat. Examples include cacti, which need less water than is typical, and ferns, which can grow in lower light levels.</p> <ul style="list-style-type: none"> -Water is transported in plants from the roots, through the stem and to the leaves, through tiny tubes called xylem. - Flowers are important in the life cycle of flowering plants. The stages of a plant's life cycle include germination, flower production, pollination, fertilisation, seed formation and seed dispersal. Insects and the wind can transfer pollen from one plant to another (pollination). Animals, wind, water and explosions can disperse seeds away from the parent plant (seed dispersal). 		<p>sepal. Pollination is when the male part of a plant (pollen) is carried, by wind, insects or other animals, to the female part of the plant (carpel). The pollen travels to the ovary, where it fertilises the ovules (eggs). Seeds are then produced, which disperse far away from the parent plant and grow new plants.</p>	
ILP	Summer 1 – Dinosaurs (label parts of a plant through dissection)	Summer 2 – Beachcombers	Summer 2 – Flow (compare cacti to another plant)		Summer 1 - Allotment	

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	(Love to Investigate – Are all leaves the same?)	(grow cress from a seed in different conditions and observe the growing process) (Love to Investigate – can seeds grow anywhere? How do plants grow in winter?)				
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ANIMALS INCLUDING HUMANS AND EVOLUTION						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and 	<ul style="list-style-type: none"> Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	<ul style="list-style-type: none"> 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. Identify that humans and some other animals have skeletons and muscles for support, protection and movement. 	<ul style="list-style-type: none"> Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey. 	<ul style="list-style-type: none"> Describe the changes as humans develop to old age. 	<ul style="list-style-type: none"> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals,

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	<p>mammals, including pets).</p> <ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 					<p>including humans.</p> <ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Skills	Identify, compare, group and sort a variety of common animals, including fish, amphibians, reptiles,	Describe the stages of human development (baby, toddler, child, teenager and adult)	Compare and contrast the diets of different animals. Explain the importance	Describe the purpose of the digestive system, its main parts and each of their functions.	Describe the changes as humans develop from birth to old age.	Name and describe the purpose of the circulatory system and the functions of the heart, blood vessels

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	<p>birds and mammals, based on observable features.</p> <p>Group and sort a variety of common animals based on the foods they eat.</p> <p>Label and describe the basic structure of a variety of common animals.</p> <p>Draw and label the main parts of the human body and say which body part is associated with which sense.</p>	<p>Describe the basic life cycles of some familiar animals (egg, caterpillar, pupa, butterfly; egg, chick, chicken; spawn, tadpole, froglet, frog).</p> <p>Describe what humans need to survive.</p> <p>Explain how animals, including humans, need water, food, air and shelter to survive.</p> <p>Describe the importance of a healthy lifestyle, including exercise, a balanced diet and good hygiene.</p>	<p>and characteristics of a healthy, balanced diet.</p> <p>Describe how humans need the skeleton and muscles for support, protection and movement.</p> <p>Identify and group animals that have no skeleton, an internal skeleton (endoskeleton) and an external skeleton (exoskeleton).</p>	<p>Identify the four different types of teeth in humans and other animals, and describe their functions.</p> <p>Construct and interpret a variety of food chains and webs to show interdependence and how energy is passed on over time.</p>		<p>and blood.</p> <p>Explain the impact of positive and negative lifestyle choices on the body.</p> <p>Explain that the circulatory system in animals transports oxygen, water and nutrients around the body.</p> <p>Explain that living things have changed over time, using specific examples and evidence.</p> <p>Identify that living things produce offspring of the same kind, although the offspring are not identical to either parent.</p> <p>Describe how animals and plants can be bred to produce offspring with specific and desired</p>
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						<p>characteristics (selective breeding).</p> <p>Identify how animals and plants are adapted to suit their environment, such as giraffes having long necks for feeding, and that adaptations may lead to evolution.</p>
Knowledge	<p>Animals are living things. Animals can be sorted and grouped into six main groups: fish, amphibians, reptiles, birds, mammals and invertebrates.</p> <p>Carnivores eat other animals (meat), herbivores eat plants and omnivores eat other animals and plants.</p> <p>Different animal groups have some common body parts, such as eyes and a mouth, and some different body</p>	<p>Human offspring go through different stages as they grow to become adults. These include baby, toddler, child, teenager and adult.</p> <p>Animals have offspring that grow into adults. Different animals have different stages of growth or life cycles.</p> <p>Humans need water, food, air and shelter to survive.</p> <p>Animals need water, food, air and shelter to survive. Their habitat</p>	<p>Animals cannot make their own food and need to get nutrition from the food they eat. Carnivores get their nutrition from eating other animals. Herbivores get their nutrition from plants. Omnivores get their nutrition from eating a variety of plants and other animals.</p> <p>Humans have to get nutrition from what they eat. It is important to have a balanced diet made up of the main food groups, including proteins, carbohydrates, fruit and vegetables,</p>	<p>The digestive system is responsible for digesting food and absorbing nutrients and water. The main parts of the digestive system are the mouth, esophagus, stomach, small intestines, large intestines and rectum. The mouth starts digestion by chewing food and mixing it with saliva. The oesophagus transports the chewed food to the stomach, where it mixes with stomach acid and gets broken down into smaller pieces. In the small intestine,</p>	<p>Humans go through characteristic stages as they develop to old age. These stages include baby, infant, toddler, child, adolescent, young adult, adult and senior citizen. Puberty is the transition between childhood and adulthood.</p>	<p>The circulatory system includes the heart, blood vessels and blood. The heart pumps blood through the blood vessels and around the body. There are three types of blood vessel: arteries, veins and capillaries. They each have a different-sized hole (lumen) and walls. The blood carries gases (oxygen and carbon dioxide), water and nutrients to where they are needed. The red blood cells carry oxygen and carbon dioxide around</p>

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	<p>parts, such as fins or wings.</p> <p>The basic body parts are the head, arms, legs, nose, eyes, ears, mouth, hands and feet.</p> <p>The five senses are hearing, sight, smell, taste and touch. Ears are used for hearing, eyes are used to see, the nose is used to smell, the tongue is used to taste and skin gives the sense of touch.</p>	<p>must provide all these things.</p> <p>A healthy lifestyle includes exercise, good hygiene and a balanced diet.</p>	<p>dairy products and alternatives, and fats and spreads. Humans need to stay hydrated by drinking water.</p> <p>Humans have a skeleton and muscles for movement, support and protecting organs. Major bones in the human body include the skull, ribs, spine, humerus, ulna, radius, pelvis, femur, tibia and fibula. Major muscle groups in the human body include the biceps, triceps, abdominals, trapezius, gluteals, hamstrings, quadriceps, deltoids, gastrocnemius, latissimus dorsi and pectorals.</p> <p>Some animals have skeletons for support, movement and protection. Endoskeletons are those found inside some animals, such as humans, cats and horses.</p>	<p>nutrients from the food are absorbed by the body. In the large intestine, water is absorbed by the body. The remaining undigested waste is stored in the rectum before excretion through the anus.</p> <p>There are four different types of teeth: incisors, canines, premolars and molars. Incisors are used for cutting. Canines are used for tearing. Premolars and molars are used for grinding and chewing. Carnivores, herbivores and omnivores have characteristic types of tooth. Herbivores have many large molars for grinding plant material. Carnivores have large canines for killing and tearing meat.</p> <p>Food chains show what animals eat within a</p>		<p>the body. The blood also contains white blood cells, which protect the body from infection.</p> <p>Lifestyle choices can have a positive (exercise and eating healthily) or negative (drugs, smoking and alcohol) impact on the body.</p> <p>The role of the circulatory system is to transport oxygen, water and nutrients around the body. They are transported in blood and delivered to where they are needed.</p> <p>Scientists compare fossilised remains from the past to living species that exist today to hypothesise how living things have evolved over time. Humans and apes share a common</p>
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			<p>Exoskeletons are those found on the outside of some animals, such as beetles and flies. Some animals have no skeleton, such as slugs and jellyfish.</p>	<p>habitat and how energy is passed on over time. All food chains start with a producer, which is typically a green plant. The producer is eaten by a primary consumer (prey), which is eaten by a secondary consumer (prey), which is eaten by a tertiary consumer. All food chains end with a top or apex predator. Changes within a food chain, such as an abundance or lack of one food type, have an impact on the entire food chain.</p>		<p>ancestry and evidence for this comes from fossil discoveries and genetic comparison.</p> <p>Animals that sexually reproduce generate new offspring of the same kind by combining the genetic material of two individuals. Each offspring inherits two of every gene, one from the female parent and one from the male parent.</p> <p>Animals and plants can be bred to produce offspring with specific and desired characteristics. This is called selective breeding. Examples include cows that produce large quantities of milk or crops that are disease-resistant.</p>
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						<p>An adaptation is a physical or behavioural trait that allows a living thing to survive and fill an ecological niche. Adaptations evolve by natural selection. Favourable traits help an organism survive and pass on their genes to subsequent generations.</p>
ILP	<p>Superheroes – Autumn 1 (label parts of the body and explain their function) (Love to Investigate – What can our hands do?)</p> <p>Paws, Claws and Whiskers - Summer 2 (label parts of animal's bodies, sort them into the 6 main groups and identify and sort herbivores, carnivores and omnivores)</p>	<p>Land Ahoy! - Spring 1 (draw and explain human and animal life cycles) (Love to Investigate – what is the lifecycle of a ladybird? Why should I exercise?)</p>	<p>Predator – Spring 1 (create simple food chains for herbivores - sheep, omnivores – humans and carnivores - fox)</p>	<p>Burps, Bottoms and Bile – Spring 2 (create a digestive system to show the passing of food through the body) (create detailed food chains- producer, primary consumer, secondary consumer, and decomposer. E.g. sunlight, grass, antelope, lion, dung beetle)</p>	<p>Allotment – Summer 1 (linked to PSHE document)</p>	<p>A Child's War – Spring 1 (create a model of the circulatory system, label and describe how it works) (explain how animals, such as giraffes and birds and plants, such as cacti, have evolved over time to suit their environment) (Love to Investigate – How does blood flow? What does your heart rate tell you? How have eyes evolved?)</p>

Science

	(Love to Investigate – Who’s poo?)					
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LIVING THINGS AND THEIR HABITATS						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims		<ul style="list-style-type: none"> Explore and compare the differences between things that are living, dead, and things that have never been alive. 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. Identify and name a variety of plants and animals in their habitats, including microhabitats. 		<ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things 	<ul style="list-style-type: none"> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals. 	<ul style="list-style-type: none"> 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. Give reasons for classifying plants and animals based on specific characteristics.

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		<ul style="list-style-type: none"> 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. 				
Skills		<p>Compare and group things that are living, dead or have never been alive.</p> <p>Describe a range of local habitats and habitats beyond their locality (rainforests, deserts, oceans and mountains) and what all habitats provide for the things that live there.</p> <p>Identify and name a variety of plants and animals in a range of habitats and microhabitats.</p> <p>Interpret and construct simple food chains to</p>		<p>Compare, sort and group living things in a variety of ways based on observable features and behaviour.</p> <p>Explain how unfamiliar habitats, such as a mountain or ocean, can change over time and what influences these changes.</p> <p>Describe how environments can change due to human and natural influences and the impact this can have on living things.</p>	<p>Compare the life cycles of animals, including a mammal, amphibian, insect and bird.</p> <p>Describe the process of human reproduction.</p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p>Use and construct classification systems to identify animals and plants from a range of habitats.</p> <p>Classify living things, including microorganisms, animals and plants, into groups according to common observable characteristics and based on similarities and differences.</p> <p>Research unfamiliar animals and plants from a range of habitats, deciding upon and explaining where they belong in</p>

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		describe how living things depend on each other as a source of food.				the classification system.
Knowledge		<p>Living things are those that are alive. Dead things are those that were once living but are no longer. Some things have never been alive.</p> <p>Local habitats include parks, woodland and gardens. Habitats beyond the locality include beaches, rainforests, deserts, oceans and mountains. All living things live in a habitat to which they are suited and it must provide everything they need to survive.</p> <p>A habitat is a place where a living thing lives. A microhabitat is a very small habitat. (E.g. rotting log or under a rock) - Food chains show how living things</p>		<p>Scientists classify living things according to shared characteristics. Animals can be divided into six main groups: mammals, reptiles, amphibians, birds, fish and invertebrates. These groups can be further subdivided. Classification keys are a scientific tools that aid the identification of living things.</p> <p>Habitats change over time, either due to natural or human influences. Natural influences include extreme or unseasonable weather. Human influences include habitat destruction or pollution. These changes can pose a risk to animals and plants that live in the habitat.</p>	<p>A life cycle is the series of changes in the life of a living thing and includes these basic stages: birth, growth, reproduction and death. Mammals' life cycles include the stages: embryo, baby, adolescent and adult. Amphibians' life cycles include the stages: egg, larva (tadpole), adolescent and adult. Some insects' (butterflies, beetles and bees) life cycles include the stages: egg, larva, pupa and adult. Birds' life cycles include the stages: egg, baby, adolescent and adult.</p> <p>Humans reproduce sexually, which involves two parents (one female and one male) and produces offspring that are</p>	<p>Classification keys help us identify living things based on their physical characteristics.</p> <p>Scientists classify living organisms into broad groups according to their characteristics. Vertebrates are an example of a classification group. There are a number of ranks, or levels, within the biological classification system. The first rank is called a kingdom, the second a phylum, then class, order, family, genus and species.</p> <p>Living things are classified into groups, according to common observable characteristics and</p>

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		depend on one another for food. All food chains start with a plant, followed by animals that either eat the plant or other animals.		Humans can affect habitats in negative ways, such as litter, pollution and land development, or positive ways, such as garden ponds, bird boxes and wildflower areas.	different from the parents. Reproduction is the process of producing offspring and is essential for the continued survival of a species. There are two types of reproduction: sexual and asexual. Sexual reproduction involves two parents (one female and one male) and produces offspring that are different from the parents. Asexual reproduction involves one parent and produces offspring that is identical to the parent.	based on similarities and differences.
ILP		<p>Wriggle and Crawl – Summer 1</p> <p>(Go on a bug hunt to identify microhabitats)</p> <p>(Create simple food chains for caterpillars)</p> <p>(Grow caterpillars/</p>		<p>Misty Mountain Sierra – Autumn 2</p> <p>(Local litter pick)</p> <p>(How has the local environment affected habitats)</p> <p>(Love to Investigate –</p>	<p>Allotment – Summer 1</p> <p>(Love to Investigate – why do birds lay eggs? Do we slow down as we get older?)</p>	<p>Frozen Kingdom – Spring 2</p> <p>(Love to Investigate – How many worms are underground? Why do birds have different beaks? Why are things classified?)</p>

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		<p>butterflies)</p> <p>(Love to Investigate – where do worms like to live?)</p>		<p>what do squirrels eat?)</p>		
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MATERIALS						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<ul style="list-style-type: none"> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 			<ul style="list-style-type: none"> 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. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and 	

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					<p>gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <ul style="list-style-type: none">• Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.• Demonstrate that dissolving, mixing and changes of state are reversible changes.• 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	
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					soda.	
Skills	<p>Identify and name what an object is made from, including wood, plastic, glass, metal, water and rock.</p> <p>Investigate and describe the simple physical properties of some everyday materials, such as hard or soft; stretchy or stiff; rough or smooth; opaque or transparent; bendy or rigid; waterproof or not waterproof and magnetic or non-magnetic.</p> <p>Compare and group materials in a variety of ways, such as based on their physical properties; being natural or man-made and being recyclable or non-recyclable.</p>	<p>Compare the suitability of a range of everyday materials for particular uses.</p> <p>Describe how some objects and materials can be changed and how these changes can be desirable or undesirable.</p>			<p>Compare and group everyday materials by their properties, including hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism.</p> <p>Explain, following observation, that some substances (solutes) will dissolve in liquid (solvents) to form a solution and the solute can be recovered by evaporating off the solvent.</p> <p>Separate mixtures by filtering, sieving and evaporating.</p> <p>Describe, using evidence from comparative or fair tests, why a material has been chosen for a specific use.</p> <p>Identify, demonstrate</p>	

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					and compare reversible and irreversible changes.	
Knowledge	<p>A material is what an object is made from. Everyday materials include wood, plastic, glass, metal, water, rock, brick, paper and fabric.</p> <p>Materials have different properties, such as hard or soft; stretchy or stiff; rough or smooth; opaque or transparent; bendy or rigid; waterproof or not waterproof; magnetic or non-magnetic.</p> <p>Materials can be grouped according to their properties.</p>	<p>A material's physical properties make it suitable for particular purposes, such as glass for windows and brick for building walls. Many materials are used for more than one purpose, such as metal for cutlery and cars.</p> <p>Some objects and materials can be changed by squashing, bending, twisting, stretching, heating, cooling, mixing and being left to decay.</p>			<p>Materials can be grouped according to their basic physical properties. Properties include hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism.</p> <p>Some materials (solutes) will dissolve in liquid (solvents) to form a solution. The solute can be recovered by evaporating off the solvent by heating.</p> <p>Some mixtures can be separated by filtering, sieving and evaporating. Sieving can be used to separate large solids from liquids and some solids from other</p>	

Science

					<p>solids. Filtering can be used to separate small solids from liquids. Evaporating can be used to separate dissolved solids from liquids.</p> <p>A material's properties dictate what it can be used for. For example, cooking pans are made from metal, which is a good thermal conductor, allowing heat to quickly transfer from the hob to the contents of the pan.</p> <p>Reversible changes include heating, cooling, melting, dissolving and evaporating. Irreversible changes include burning, rusting, decaying and chemical reactions.</p>	
ILP	<p>Bright Lights, Big City – Spring 2</p> <p>(sort everyday materials according to</p>	<p>Towers, Tunnels and Turrets – Autumn 1</p> <p>(explain how everyday materials are suited for</p>			<p>Alchemy Island – Spring 1</p> <p>(separate sand and soil using sieving, separate</p>	

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	<p>their properties)</p> <p>(Love to Investigate – can you be a Superhero?)</p>	<p>different purposes. E.g. glass is suitable for a window as it's transparent)</p> <p>(Love to Investigate – can you make a paper bridge? Do all balls bounce?)</p>			<p>tea leaves from tea using filtering and separate salt from water using evaporation)</p> <p>(irreversible changes – burn a piece of wood to ash and mixing vinegar and bicarbonate of soda)</p> <p>(reversible changes – melting and cooling wax)</p> <p>(Love to Investigate – how do rockets lift off? Can you clean dirty water?)</p>	
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SEASONAL CHANGES						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims	<ul style="list-style-type: none"> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. 					

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Skills	<p>Observe changes across the four seasons.</p> <p>Observe and describe how day length changes across the year.</p> <p>Observe and describe different types of weather.</p>					
Knowledge	<p>There are four seasons: spring, summer, autumn and winter. Certain events and weather patterns happen in different seasons.</p> <p>Day length (the number of daylight hours) is longer in the summer months and shorter in the winter months.</p> <p>Different types of weather include sun, rain, hail, wind, snow, fog, lightning, storm and cloud. The weather can change daily and some weather types are more common in</p>					

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	certain seasons, such as snow in winter.					
ILP	<p>Splendid Skies – Autumn 2</p> <p>(daily weather diary)</p> <p>(identify common weather types for each season)</p> <p>(Love to Investigate – How do leaves change?)</p>					

ROCKS						
Year	Year 1	Year 2		Year 4	Year 5	Year 6
NC Aims			<ul style="list-style-type: none"> • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Describe in simple terms how fossils are formed when things that have lived are trapped within rock. • Recognise that soils are made from rocks 			

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			and organic matter.			
Skills			<p>Compare and group rocks based on their appearance, properties or uses.</p> <p>Describe simply how fossils are formed, using words, pictures or a model.</p> <p>Investigate soils from the local environment, making comparisons and identifying features.</p>			
Knowledge			<p>There are three different rock types: sedimentary, igneous and metamorphic. Sedimentary rocks form from mud, sand and particles that have been squashed together over a long time to form rock. Examples include sandstone and limestone. Igneous rocks are made from cooled magma or lava. They usually contain visible crystals. Examples include pumice and granite. Metamorphic</p>			

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			<p>rocks are formed when existing rocks are heated by the magma under the Earth's crust or squashed by the movement of the Earth's tectonic plates. They are usually very hard. Examples include slate and marble.</p> <p>Fossils form over millions of years and are the remains of a once-living organism, preserved as rock. Scientists can use fossils to find out what life on Earth was like in prehistoric times. Fossils form when a living thing dies in a watery environment. The body gets covered by mud and sand and the soft tissues rot away. Over time, the ground hardens to form sedimentary rock and the skeletal or shell remains turn to rock.</p> <p>Soils are made from tiny pieces of eroded rock, air and organic matter. There are a variety of</p>			
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Science

			naturally occurring soils including, clay, sand and silt. Different areas have different soil types.			
ILP			<p>Tremors – Autumn 2</p> <p>(sort rocks into 3 types and draw/explain how each have been formed)</p> <p>(explore fossils and how they are formed)</p> <p>(Love to Investigate – How are fossils formed?)</p>			

LIGHT						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims			<ul style="list-style-type: none"> Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that 			<ul style="list-style-type: none"> Recognise that light appears to travel in straight lines. 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. Explain that we see things

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			<p>shadows are formed when the light from a light source is blocked by an opaque object.</p> <ul style="list-style-type: none"> Find patterns in the way that the size of shadows change. 			<p>because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</p> <ul style="list-style-type: none"> Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Skills			<p>Describe dark as being the absence of light and that we need light to be able to see.</p> <p>Group and sort materials as being reflective or non-reflective.</p> <p>Explain why light from the sun can be dangerous.</p> <p>Explain, using words or diagrams, how shadows are formed when a light source is blocked by an</p>			<p>Identify that light travels in straight lines.</p> <p>Explain that, due to how light travels, we can see things because they give out or reflect light into the eye.</p> <p>Explain, using words, diagrams or a model, why shadows have the same shape as the objects that cast them and how shadows can</p>

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			<p>opaque object.</p> <p>Find patterns in the way shadows change during the day.</p>			<p>be changed.</p>
Knowledge			<p>Dark is the absence of light and we need light to be able to see.</p> <p>Light can be reflected from different surfaces. Some surfaces are poor reflectors, such as some fabrics, while other surfaces are good reflectors, such as mirrors.</p> <p>Light from the Sun is damaging for vision and the skin. Protection from the Sun includes sun cream, sun hats, sunglasses, staying indoors or in the shade.</p> <p>A shadow is formed when light from a light source, such as the Sun, is blocked by an opaque object. Transparent objects allow light to pass through them and</p>			<p>Light travels in straight lines.</p> <p>Light sources give out light. They can be natural or artificial. When light hits an object, it is absorbed, scattered, reflected or a combination of all three. Light from a source or reflected light enter the eye. Vertebrates, such as mammals, birds and reptiles, have a cornea and lens that refracts light that enters the eye and focuses it on the nerve tissue at the back of the eye, which is called the retina. Once light reaches the retina, it is transmitted to the brain via the optic nerve.</p>

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			do not create shadows. Shadows change shape and size when the light source moves. For example, when the light source is high above the object, the shadow is short and when the light source is low down, the object's shadow is long.			A shadow appears when an object blocks the passage of light. Apart from some distortion or fuzziness at the edges, shadows are the same shape as the object. The distortion or fuzziness depends on the position or type of light source.
ILP			Tribal Tales – Autumn 1 (use torches to explore reflective materials) (shadow drawings at different points of the day to compare lengths, shape and size)			Gallery Rebels – Summer 1 (Love to Investigate – How does light travel? Can you see through it? Can you turn a light down?)

FORCES AND MAGNETS						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims			<ul style="list-style-type: none"> Compare how things move on different surfaces. Notice that some forces need contact 		<ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of 	

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			<p>between two objects, but magnetic forces can act at a distance.</p> <ul style="list-style-type: none"> • Observe how magnets attract or repel each other and attract some materials and not others. • 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. • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing. 		<p>gravity acting between the Earth and the falling object.</p> <ul style="list-style-type: none"> • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 	
Skills			<p>Explain that an object will not move unless a push or pull (force) is applied, describing forces in action and whether the force requires direct contact or whether the</p>		<p>Explain that objects fall to Earth due to the force of gravity.</p> <p>Compare and describe, using a range of toys, models and natural</p>	

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			<p>force can act at a distance (magnetic force).</p> <p>Compare and group materials based on their magnetic properties.</p> <p>Investigate and compare a range of magnets (bar, horseshoe and floating) and explain that magnets have two poles (north and south) and that opposite poles attract each other, while like poles repel each other.</p>		<p>objects, the effects of water resistance, air resistance and friction.</p> <p>Describe and demonstrate how simple levers, gears and pulleys assist the movement of objects.</p>	
Knowledge			<p>An object will not move unless a pushing or pulling force is applied. Some forces require direct contact, whereas other forces can act at a distance, such as magnetic force.</p> <p>Some materials have magnetic properties. Magnetic materials are attracted to magnets. All magnetic materials are metals but not all metals are magnetic. The metal</p>		<p>Gravity is a force of attraction. Anything with a mass can exert a gravitational pull on another object. The Earth's large mass exerts a gravitational pull on all objects on Earth, making dropped objects fall to the ground.</p> <p>Friction, air resistance and water resistance are forces that oppose motion and slow down</p>	

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			<p>iron is magnetic.</p> <p>Some materials have magnetic properties. Magnetic materials are attracted to magnets. All magnetic materials are metals but not all metals are magnetic. The metal iron is magnetic.</p> <p>Magnets have two poles (north and south). Opposite poles (north and south) attract each other, while like poles (north and north, or south and south) repel each other.</p>		<p>moving objects. These forces can be useful, such as bike brakes and parachutes, but sometimes we need to minimise their effects, such as streamlining boats and planes to move through water or air more easily, and using lubricants and ball bearings between two surfaces to reduce friction.</p> <p>Mechanisms, such as levers, pulleys and gears, give us a mechanical advantage. A mechanical advantage is a measurement of how much a simple machine multiplies the force that we put in. The bigger the mechanical advantage, the less force we need to apply.</p>	
ILP			<p>Gods and Mortals – Summer 1</p> <p>(Love to Investigate – Can you block</p>		<p>Scream Machine – Summer 2</p> <p>(identify forces on moving objects)</p>	

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			magnetism? How mighty are magnets? What does friction do?)		(DT link - design own fairground rides using different mechanisms) (Love to Investigate – what do pullies do?)	
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STATES OF MATTER						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims				<ul style="list-style-type: none"> • 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 		

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				associate the rate of evaporation with temperature.		
Skills				<p>Group and sort materials into solids, liquids or gases.</p> <p>Observe and explain that some materials change state when they are heated or cooled and measure or research the temperature in degrees Celsius ($^{\circ}\text{C}$) at which materials change state.</p> <p>Describe the water cycle using words or diagrams and explain the part played by evaporation and condensation.</p>		
Knowledge				Materials can be grouped according to whether they are solids, liquids or gases. Solids stay in one place and can be held. Some solids can be squashed, bent, twisted and stretched. Examples of solids include wood,		

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				<p>metal, plastic and clay. Liquids move around (flow) easily and are difficult to hold. Liquids take the shape of the container in which they are held. Examples of liquids include water, juice and milk. Gases spread out to fill the available space and cannot be held. Air is a mixture of gases.</p> <p>Heating or cooling materials can bring about a change of state. This change of state can be reversible or irreversible. The temperature at which materials change state varies depends on the material. Water changes state from solid (ice) \rightleftharpoons liquid (water) at 0°C and from liquid (water) \rightleftharpoons gas (water vapour) at 100°C. The process of changing from a solid to liquid is called melting. The reverse</p>		
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				<p>process of changing from a liquid to a solid is called freezing. The process of changing from a liquid to a gas is called evaporation. The reverse process of changing from a gas to a liquid is called condensation.</p> <p>The water cycle has four stages: evaporation, condensation, precipitation, collection. Water in lakes, rivers and streams is warmed by the Sun, causing the liquid water to evaporate and rise into the air as water vapour. As the water vapour rises, it cools and condenses to form liquid water droplets in clouds. The clouds become full of water, until the water falls back to the ground as precipitation (rain, hail, snow and ice). The</p>		
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				fallen water collects back in lakes, rivers and streams. Evaporation and condensation are caused by temperature changes.		
ILP				<p>Potions – Spring 1</p> <p>(Reversible change – melting and cooling chocolate)</p> <p>(Irreversible change – cooking an egg)</p> <p>(Love to Investigate – Why does it flood?)</p>		

SOUND						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims				<ul style="list-style-type: none"> Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns 		

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				<p>between the pitch of a sound and features of the object that produced it.</p> <ul style="list-style-type: none">• Find patterns between the volume of a sound and the strength of the vibrations that produced it.• Recognise that sounds get fainter as the distance from the sound source increases.		
Skills				<p>Explain how sounds are made and heard using diagrams, models, written methods or verbally.</p> <p>Compare and find patterns in the pitch of a sound, using a range of equipment, such as musical instruments.</p> <p>Compare how the volume of a sound changes at different distances from the source.</p>		

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Knowledge				<p>When an instrument is played, the air around or inside it vibrates. These vibrations travel as a sound wave. Sound waves travel through a medium, such as air or water, to the ear.</p> <p>Pitch is how high or low a sound is. Parts of an instrument that are shorter, tighter or thinner produce high-pitched sounds. Parts of an instrument that are longer, looser or fatter produce low-pitched sounds.</p> <p>Volume is how loud or quiet a sound is. The harder an instrument is hit, plucked or blown, the stronger the vibrations and the louder the sound.</p> <p>Sounds are louder closer to the sound source and fainter as the distance from the sound source increases.</p>		
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ILP				<p>I am Warrior! – Summer 2</p> <p>(Love to Investigate – Can we block sound? How can we change a sound? How far can sound travel?)</p>		
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ELECTRICITY						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims				<ul style="list-style-type: none"> Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. 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. Recognise that a 		<ul style="list-style-type: none"> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when

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				<p>switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <ul style="list-style-type: none"> Recognise some common conductors and insulators, and associate metals with being good conductors. 		<p>representing a simple circuit in a diagram.</p>
Skills				<p>Compare common household equipment and appliances that are and are not powered by electricity.</p> <p>Construct operational simple series circuits using a range of components and switches for control.</p> <p>Predict and describe whether a circuit will work based on whether or not the circuit is a complete loop and has a battery or cell.</p>		<p>Explain how the brightness of a lamp or volume of a buzzer is affected by the number and voltage of cells used in a circuit.</p> <p>Compare and give reasons for variations in how components in electrical circuits function (brightness of lamps; volume of buzzers and function of on or off switches).</p> <p>Create circuits using a range of components</p>

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				Describe materials as electrical conductors or insulators.		and record diagrammatically using the recognised symbols for electrical components.
Knowledge				<p>Electricity is a type of energy. It is used to power many everyday items, such as kettles, computers and televisions. Electricity can also come from batteries. Batteries eventually run out of power and need to be recycled or recharged. Batteries power devices that can be carried around, such as mobile phones and torches.</p> <p>Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control.</p> <p>A series circuit is a simple loop with only one path for the</p>		<p>Voltage is measured in volts (V) and is a measure of the difference in electrical energy between two parts of a circuit. The bigger the voltage, the more electrons are pushed through the circuit. The more voltage flowing through a lamp, buzzer or motor, the brighter the lamp, the louder the buzzer and the faster the motor.</p> <p>A circuit needs a power source, such as a battery or cell, with wires connected to both the positive and negative terminals. Other components include lamps, buzzers or motors, which an electric current passes through and affects a</p>

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				<p>electricity to flow. A series circuit must be a complete loop to work and have a source of power from a battery or cell.</p> <p>Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control.</p> <p>Electrical conductors allow electricity to flow through them, whereas insulators do not. Common electrical conductors are metals. Common insulators include wood, glass, plastic and rubber.</p>		<p>response, such as lighting a lamp or turning a motor. When a switch is open, it creates a gap and the current cannot travel around the circuit. When a switch is closed, it completes the circuit and allows a current to flow all the way around it.</p> <p>There are recognised symbols for different components of circuits.</p>
ILP				<p>Road Trip USA! – Summer 1</p> <p>(Make simple circuits to light a bulb or make a buzzer sound)</p> <p>(Love to Investigate – Can we make a circuit</p>		<p>Tomorrow's World - Summer 2</p> <p>(Create different circuits with bulbs, motors and switches and describe what happens when a switch is opened and</p>

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				from playdough? How do plugs work? What conducts electricity?)		closed) (use symbols to draw circuits) (Love to Investigate – Can fruit light a bulb?)
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EARTH AND SPACE						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Aims					<ul style="list-style-type: none"> Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. 	

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Skills					<p>Describe or model the movement of the planets in our Solar System, including Earth, relative to the Sun.</p> <p>Describe or model the movement of the Moon relative to Earth.</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies and use this knowledge to understand the phases of the Moon and eclipses.</p> <p>Use the idea of Earth's rotation to explain day and night, and the Sun's apparent movement across the sky.</p>	
Knowledge					<p>The Solar System is made up of the Sun and everything that orbits around it. There are eight planets in our Solar System: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus</p>	

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and Neptune. Earth orbits around the Sun and a year (365 days) is the length of time it takes for Earth to complete a full orbit.

The Moon orbits Earth, completing a full orbit every month (28 days).

The Sun, Earth, Moon and other planets and stars are roughly spherical. All planets are spherical because their mass is so large that they have their own force of gravity. This force of gravity pulls all of a planet's material towards its centre, which compresses it into the most compact shape – a sphere.

As Earth orbits the Sun, it also spins on its axis. It takes Earth a day (24 hours) to complete a full spin. During the day, the Sun appears to move through the sky. However, this is due to the Earth rotating and

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					not the Sun moving. Earth rotates to the east or, if viewed from above the North Pole, it rotates anti-clockwise, which means the Sun rises in the east and sets in the west. As Earth rotates, different parts of it face the Sun, which brings what we call daytime. The part facing away is in shadow, which is night time.	
ILP					Stargazers – Autumn 2 (Love to Investigate – Can we track the sun? How do we know the Earth is round? Why do planets have craters)	