



Working Scientifically								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Asking questions and carrying out fair and comparative tests	*Comment and ask questions *Find new ways to do things	*Answer how and why questions about their experiences	* Ask simple questions and recognise that they can be answered in different ways *Perform simple tests	*Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national *Perform simple comparative tests	* Ask relevant questions and use different types of scientific enquiries to answer them * Set up simple practical enquiries, comparative and fair tests	* Ask relevant questions and use different types of scientific enquiries to answer them *Set up simple practical enquiries, comparative and fair tests	* Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	* Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
Observing and measuring changes	*Discuss things that he/she has observed	*Closely observe similarities and differences *Closely observe patterns and change *Discuss changes	* Use simple equipment to observe closely	*Use simple equipment to observe closely including changes over time	*Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	* Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	* Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	* Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
Identifying, Classifying, recording, and presenting data	*Talk about why things happen and how they work	*Talk about the features of his/her own immediate environment and how they may vary	* Identify and classify * Gather and record data to help in answering questions	* Identify, group and classify	* Gather, record, classify and present data in a variety of ways to help in answering questions * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	*Gather, record, classify and present data in a variety of ways to help in answering questions * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	* Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	* Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs * Group and classify things and recognise patterns



Science progression document

<p>Drawing conclusions, noticing patterns, and presenting findings</p>	<p>*Take risk, engage in new experiences, and learn through trial and error</p>	<p>*Develop ideas of cause and effect *Understand similarities and differences in relation to place, objects, materials and living things</p>	<p>*Use his/her observations and ideas to suggest answers to questions</p>	<p>*Communicate his/her ideas, what he/she does and what he/she finds out in a variety of ways</p>	<p>* Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<p>* Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<p>* Use test results to make predictions to set up further comparative and fair tests * Report and present 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</p>	<p>* Use test results to make predictions to set up further comparative and fair tests * Report and present 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 * Use appropriate scientific language and ideas from the national curriculum to explain, evaluate and communicate his/her methods and findings</p>
<p>Using scientific evidence and secondary sources of information</p>	<p>---</p>	<p>---</p>	<p>---</p>	<p>---</p>	<p>* Identify differences, similarities or changes related to simple scientific ideas and processes * Use straightforward scientific evidence to answer questions or to support his/her findings</p>	<p>*Identify differences, similarities or changes related to simple scientific ideas and processes * Use straightforward scientific evidence to answer questions or to support his/her findings</p>	<p>*Identify scientific evidence that has been used to support or refute ideas or arguments</p>	<p>*Identify scientific evidence that has been used to support or refute ideas or arguments * Describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources *Find things out using a wide range of secondary sources of information</p>



	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Biology								
Animals including humans	<ul style="list-style-type: none"> * Understands the key features of the life cycle of an animal 	<ul style="list-style-type: none"> *Explores the natural world around him/her, making observations and drawing pictures of animals 	<ul style="list-style-type: none"> * Identify and name a variety of common animals * Group animals according to what they eat. * 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 mammals, including pets). * Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 	<ul style="list-style-type: none"> * Understand that animals, including humans, have offspring which grow into adults * 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"> * Describe the ways in which nutrients and water are transported within animals, including humans * 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
Plants	<ul style="list-style-type: none"> * Plants seeds and cares for growing plants. * Understands the key features of the life cycle of a plant. 	<ul style="list-style-type: none"> *Explores the natural world around him/her, making observations and drawing pictures of plants 	<ul style="list-style-type: none"> * Identify and describe the basic structure of a variety of common flowering plants, including trees * Identify and describe the basic structure of a variety of common flowering plants, including trees 	<ul style="list-style-type: none"> * Describe how plants need water, light and a suitable temperature to grow and stay healthy, and describe the impact of changing these * Observe and describe how seeds and bulbs grow into mature plants. 	<ul style="list-style-type: none"> * Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. * Explore and describe 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. 	---	---	---



					<ul style="list-style-type: none"> * 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. 			
<p>Living things and their habitats</p>	<ul style="list-style-type: none"> * Is beginning to understand the need to respect and care for the natural environment and all living things. 	<ul style="list-style-type: none"> *Explores the natural world around him/her *Knows some similarities and differences between the natural world around him/her and contrasting environments, drawing on his/her experiences and what has been read in class *Recognises some environments that are different to the one in which he/she lives 	---	<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 micro-habitats. * 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"> * 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 and have an impact on 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 micro-organisms, plants and animals. * Give reasons for classifying plants and animals based on specific characteristics
<p>Evolution and inheritance</p>								<ul style="list-style-type: none"> * Recognise that living things have changed over time and that fossils provide



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Seasonal changes	---	<ul style="list-style-type: none"> * Describes what he/she can see, hear and feel whilst outside. * Understands the effect of changing seasons on the natural world around him/her * Understands some important processes and changes in the natural world around him/her 	<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. 	---	---	---	---	---
Physics								
Forces	<ul style="list-style-type: none"> * Explores and talks about different forces he/she can feel 	---	---	---	<ul style="list-style-type: none"> * Compare how things move on different surfaces. * Notice that some forces need contact between two objects, but magnetic forces can act at a distance. * Observe how magnets attract or repel each other and attract some 	---	<ul style="list-style-type: none"> * Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. * Identify the effects of air resistance, water resistance and friction, 	---



					<p>materials and not others.</p> <ul style="list-style-type: none"> * 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>that act between moving surfaces.</p> <ul style="list-style-type: none"> * Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 	
Light	---	---	---	---	<ul style="list-style-type: none"> * Recognise that he/she needs 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 eyes. * Recognise that shadows are formed when the light from a light source is blocked by a solid object. * Find patterns in the way that the size of shadows change. * Recognise that light appears to travel in straight lines. 	---	---	<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 because light travels from light sources to our eyes or from light sources to objects and then to our eyes. * Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
sound						<ul style="list-style-type: none"> * Identify how sounds are made, associating some of them with something vibrating * Recognise that vibrations from sounds 		



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Earth and Space	---	---	---	---	---	---	<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 * Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky 	---
Electricity	---	---	---	---	---	<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 	---	<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



						<p>complete loop with a battery.</p> <ul style="list-style-type: none"> * Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. * Recognise some common conductors and insulators, and associate metals with being good conductors 		<ul style="list-style-type: none"> * Use recognised symbols when representing a simple circuit in a diagram
Chemistry								
Materials (Including rocks)	<ul style="list-style-type: none"> * Uses all his/her senses in hands-on exploration of natural materials. * Explores collections of materials with similar and/or different properties. * Talks about the differences between materials and changes he/she notices. 	---	<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. * Describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<p>Year 3- Rocks</p> <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 and organic matter. 	---	<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. * Recognise 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 gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. * 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 soda.	
States of matter	---	*Understands some important processes and changes in the natural world around him/her, including the seasons and changing 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.	---