



Knowledge, Skills and Understanding breakdown for Science			
Year 1			
Working scientifically	Plants	Animals	Materials
<p>Ask simple questions. Recognise that they can be answered in different ways.</p> <p>Observe more closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Begin to identify and classify.</p> <p>Use observations and ideas to suggest answers to questions.</p> <p>Gather and record simple data to help in answering questions.</p>	<p>Identify and name a variety of common wild and garden plants. Know the meaning of the terms deciduous and evergreen. Identify common deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees. (root, stem, trunk, branch, leaf, flower, seed)</p>	<p>Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals.</p> <p>Begin to know some of the basic features of fish, amphibians, reptiles, birds and mammals.</p> <p>Describe and compare the structure of a variety of common animals, including pets (fish, amphibians, reptiles, birds and mammals)</p> <p>Identify name, draw and label the basic parts of the human body. Say which part of the body is associated with each sense.</p>	<p>Distinguish between an object and the material from which it is made. Know that the same object can be made from different materials.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials – e.g. waterproof, hard, shiny, transparent, opaque, floats/sinks, bendy.</p>
Seasonal change	Extra light		
<p>Observe changes across the four seasons, e.g. weather, animals, plants.</p> <p>Observe and describe weather associated with the seasons.</p> <p>Notice how day length varies as the seasons change.</p>	<p>To know that without light, it is dark.</p> <p>To recognise different light sources.</p> <p>To know that the sun is a light source.</p> <p>Have a simple understanding of possible dangers from the sun.</p> <p>Know how to keep safe in the sun.</p> <p>To know that the moon is not a light source.</p>		

Knowledge, Skills and Understanding breakdown for Science			
Year 2			
Working scientifically	Plants	Animals (including humans)	Materials
<p>Ask simple questions. Recognise that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Identify and classify, e.g. animals/materials.</p> <p>Use observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe the basic needs of a plant (i.e. water, light and a suitable temperature) in order for it to grow and stay healthy.</p> <p>Track and observe the growth of a plant over time.</p>	<p>Notice that animals, including humans, have offspring which grow into similar (but not identical) adults.</p> <p>Find out about and describe the basic needs of animals (including humans) for survival; water, food, air.</p> <p>Describe the importance for humans of exercise.</p> <p>Describe the importance for humans of eating the right amounts of different types of food.</p> <p>Describe the importance for humans of hygiene.</p>	<p>Identify a range of common materials – wood, metal, plastic, glass, brick, rock, paper, cardboard.</p> <p>Compare the suitability of materials for particular uses based on their properties (e.g. soft, waterproof, hard-wearing, strong, bendy/flexible, transparent)</p> <p>Find out how the shapes of solid objects made from some materials can be changed by pulling, squashing, bending, twisting and stretching.</p> <p>Investigate which materials can be returned to their original shape and which cannot.</p>
Living things/Habitats		Extra Sound	
<p>Understand the terms living, dead and never alive (to know in simple terms what being 'alive' means).</p> <p>Explore, compare and classify things that are living, dead and never alive.</p> <p>Identify that most living things live in habitats to which they are suited.</p> <p>Describe how different habitats provide the basic needs of different kinds of animals and plants.</p> <p>Describe how animals and plants depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</p> <p>Describe how animals obtain their food from plants and other animals.</p> <p>Create a simple food chain.</p> <p>Identify and name different sources of food.</p>		<p>To know that different instruments make sounds in different ways, e.g. hitting, shaking, scraping.</p> <p>To know that we hear sounds with our ears.</p> <p>To recognise loud/quiet sounds. To begin to know that as a sound gets further away it sounds quieter</p>	

Knowledge, Skills and Understanding breakdown for Science		
Year 3		
Working scientifically	Plants	Animals (including humans)
<p>Begin to use results to draw simple conclusions, make predictions, suggesting improvements and further questions.</p> <p>Begin to identify difference, similarities or changes related to simple scientific ideas and processes.</p> <p>Begin to use straightforward scientific evidence to answer questions/support findings.</p> <p>Report simply on findings from enquiries using explanations, displays, presentations of results, conclusions.</p> <p>Begin to gather, record, classify and present data in a variety of ways to answer questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Begin to ask relevant questions and use different types of scientific enquiries to answer them.</p> <p>Begin to set up simple practical enquiries, comparative and fair tests.</p> <p>Begin to make systematic and careful observations, take accurate measurements (standard units) using a range of equipment, including thermometers and data loggers.</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>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.</p> <p>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>Identify that animals, including humans, need the right types and amount of nutrition.</p> <p>Identify that animals, including humans, unlike plants cannot make their own food.</p> <p>Identify that animals, including humans, get nutrition from what they eat.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>Investigate animals with exoskeletons.</p>
Light/Shadows	Forces/Magnets	Rocks
<p>Recognise that we need light in order to see things.</p> <p>Recognise darkness as the absence of light.</p> <p>Notice that light is reflected from surfaces. Investigate these surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</p> <p>Investigate and collect data to find patterns in the way that the size of shadows change.</p>	<p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>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.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other depending on which poles are facing.</p>	<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>

Knowledge, Skills and Understanding breakdown for Science			
Year 4			
Working scientifically	Animals	Living things/Habitats	States of matter
<p>Use results to draw simple conclusions, make predictions, suggesting improvements and further questions. Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions/support findings. Report on findings from enquiries using explanations, displays, presentations of results, conclusions. Gather, record, classify and present data in a variety of ways to answer questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Ask relevant questions, using different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Ask relevant questions and using different types of scientific enquiries to answer them.</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their functions. Identify the different parts of a tooth. Relate tooth type to diet. Know the importance of dental hygiene. Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>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.</p>	<p>Compare and group materials together, according to their state (solids, liquids, gases) Observe that some materials change state when they are heated or cooled. 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. Make connections between the rate of evaporation with temperature.</p>
	<p>Sound</p> <p>Identify how sounds are made. Associate sound with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it. Recognise that sounds get fainter as the distance from the sound source increases.</p>	<p>Electricity</p> <p>Identify common appliances that run on electricity. Construct a simple series electrical circuit. Identify and name its basic parts (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 switch opens and closes a circuit. Associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators. Recognise metals as good conductors. Identify materials that are not good conductors and compare.</p>	

Knowledge, Skills and Understanding breakdown for Science			
Year 5			
Working scientifically	Animals	Materials	
<p>Begin to identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Begin to plan different types of scientific enquiries to answer questions, recognising and controlling variables where necessary.</p> <p>Begin to take measurements using a range of scientific equipment.</p> <p>Show increasing accuracy and precision, taking repeat readings when appropriate.</p> <p>Begin to record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>Begin to use test results to make predictions to set up further comparative and fair tests.</p> <p>Begin to report and represent findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	Describe the changes as humans develop to old age.	<p>Compare and group together everyday materials on the basis of their properties, e.g. hardness, solubility, transparency, conductivity (electrical and thermals) and response to magnets.</p> <p>Know that some materials will dissolve in liquid to form a solution.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Explain that some changes result in the formation of new materials.</p> <p>Conduct experiments to find out that some changes are not usually reversible (e.g. changes associated with burning and the action of acid on bicarbonate of soda)</p>	
	Living things/Life cycles/Reproduction	Forces/Magnets	Earth and Space
	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life processes of reproduction in some plants and animals.	<p>Explain that unsupported objects falls towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance and friction, that act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pullets and gears, allow a smaller force to have a greater effect.</p>	<p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>Describe the movement of the Moon relative to the Earth.</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>

Knowledge, Skills and Understanding breakdown for Science			
Year 6			
Working scientifically	Animals	Living things/habitats	
<p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Plan different types of scientific enquiries to answer questions, recognising and controlling variables where necessary.</p> <p>Take measurements using a range of scientific equipment.</p> <p>Show increasing accuracy and precision.</p> <p>Know when it is appropriate to take repeat measurements.</p> <p>Record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>Be able to interpret these.</p> <p>Use test results to make predictions to set up further comparative and fair tests.</p> <p>Report and represent 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>Identify and name the main parts of the human circulatory system.</p> <p>Describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.</p> <p>Give reasons for classifying plants and animals, based on specific characteristics.</p>	
	<p>Light</p> <p>Recognise that light appears to travel in straight lines.</p> <p>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.</p> <p>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.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>	<p>Electricity</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>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> <p>Use recognised symbols when representing a simple circuit in a diagram.</p>	<p>Evolution</p> <p>Recognise that living things have changes over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>