

	COMPONENTS of KNOWLEDGE							
	30-50	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	<ul style="list-style-type: none"> ➤ Talk about some of the things they have observed such as plants 	<ul style="list-style-type: none"> ➤ Make observations of plants and explain why some things occur 	<ul style="list-style-type: none"> ➤ Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen. ➤ Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. 	<ul style="list-style-type: none"> ➤ Observe and describe how seeds and bulbs grow into mature plants. ➤ Find out 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, stems, 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. 			
Vocabulary	Leaf Flower Sun Water	Flower Leaf Stem Plant Growth Water Sun	Common plant Wild plant Garden plant Tree Deciduous Evergreen Flowering Root Stem Trunk	Seed Bulb Bud Temperature Grow Healthy Germination Reproduction	Root Stem Leave Flowers Life Growth Nutrients Soil Transportation Pollination Dispersal Life Cycle			
Animals, including humans	<ul style="list-style-type: none"> ➤ Knows some of the things that make them unique ➤ Talk about some of the similarities and differences in 	<ul style="list-style-type: none"> ➤ Know similarities and differences between themselves and others and among families and in relation to living things 	<ul style="list-style-type: none"> ➤ Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. 	<ul style="list-style-type: none"> ➤ Notice that animals, including humans, have offspring which grow into adults. ➤ Find out about and describe the basic 	<ul style="list-style-type: none"> ➤ Identify that animals, including humans, need the right types and amount of nutrition, and that they can not make their own 	<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 	<ul style="list-style-type: none"> ➤ Describe the changes as humans develop from birth to old age. 	<ul style="list-style-type: none"> ➤ Identify and name the main parts of the human circulatory system, and explain the functions of the

	<ul style="list-style-type: none"> relation to friends or family ➤ Talk about some of the things they have observed such as, animals 	<ul style="list-style-type: none"> ➤ Make observations about animals and explain why some things occur 	<ul style="list-style-type: none"> ➤ 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 (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets). ➤ Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with which sense. 	<ul style="list-style-type: none"> 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"> food; they get their nutrition from what they eat. ➤ Identify that humans and some animals have skeletons and muscles for support and movement. 	<ul style="list-style-type: none"> 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"> 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, including humans.
Vocabulary	Animal names Family Friend	Family Parents Brother Sister	Amphibian Reptile Mammal Invertebrate Vertebrate Carnivore Herbivore Omnivore Skeleton Bone	Offspring Reproduce Survival Growth Hygiene Exercise	Nutrition Mammal Skeleton Muscle Joint Socket Ligament Bend Flex	Digest Saliva Mouth Teeth Incisor - cutting/slicing Canine - ripping/tearing Pre-molar Molar - chewing, grinding Wisdom Teeth Enzyme Oesophagus Stomach Transports Absorbs Small intestine Large intestine Rectum Anus Water Vitamins Acid Sun Producer Consumer (Secondary, Tertiary) Predator Prey Carnivore	Human Development Baby Toddler Child Teenager Adult Puberty Gestation Length Mass Grows Grow Growing	Internal Organs Heart Lungs Liver Kidney Brain Skeletal Skeleton Muscle Muscular Digest Digestion digestive Circulatory System Heart Blood Vessels Blood Impact Diet Exercise Drugs Lifestyle Nutrients Water Damage Alcohol Substances

						Herbivore Omnivore		
Living things and their habitats	<ul style="list-style-type: none"> ➤ Developing an understanding of growth, decay and changes over time ➤ Shows care and concern for living things and the environment. ➤ Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. 	<ul style="list-style-type: none"> ➤ Talk about the features of their own environment and how environments might vary from one another 		<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"> ➤ Identify and name a variety of living things (plants and animals) in the local and wider environment, using classification keys to assign them to groups. ➤ Recognise that environments can change and that this can sometimes pose dangers to living things. 	<ul style="list-style-type: none"> ➤ Explain 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.
Vocabulary	<p>Grow Alive Dead</p>	<p>Desert Jungle</p>		<p>Alive Dead Habitat Microhabitat Interdependent Dependent Food chain Predator Prey Energy</p>		<p>environment flowering non-flowering plants animals vertebrate environment dangers vertebrate fish amphibians reptiles birds mammals invertebrate insects plants</p>	<p>vertebrate fish amphibians reptiles birds mammals invertebrate insects plants flowering plants (including grasses) non-flowering (including mosses and ferns) human impact positive - nature reserves, ecologically</p>	<p>micro-organisms plants animals classification classify invertebrates (insects, spiders, snails worms) vertebrates (fish, amphibians, reptiles, birds, mammals)</p>

						flowering plants (including grasses) non-flowering (including mosses and ferns) human impact positive - nature reserves, ecologically planned parks, garden ponds negative - population, development, litter, deforestation	planned parks, garden ponds negative - population, development, litter, deforestation	
Seasonal Changes	➤ Developing an understanding changes over time	➤ Talk about changes	➤ Observe changes across the four seasons. ➤ Observe and describe weather associated with the seasons and how day length varies.					
Vocabulary	Hot Cold Light Dark Spring Summer Autumn Winter	Spring Summer Autumn Winter Sun Wind Rain Cloud Snow Fog	Season Spring Summer Autumn Winter Weather Equinox Sunrise Sunset Dusk Dawn Day Night Temperature Wet Dry Wind Hot Cold Thermometer Degrees					
Everyday Materials	➤ Can talk about some of the things they have observed such as natural and found objects.	➤ Safely use and explore a variety of materials, tools and techniques	➤ 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.	➤ Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard. ➤ Compare how things move on different surfaces.				

	<ul style="list-style-type: none"> ➤ Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. ➤ Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. ➤ Begin to be interested in and describe the texture of things. 		<ul style="list-style-type: none"> ➤ 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. ➤ Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 						
Vocabulary	Fast Slow Smooth Rough Bumpy	Material Wood Plastic Metal Paper Fabric Soft Hard	Object Properties Man-made material Natural material Hard Soft Malleable Non-malleable Waterproof Non-waterproof Opaque Transparent Absorbent Non-absorbent Brittle Rigid Shiny Dull Rough Smooth Stretchy Squashy	Translucent Waterproof Non-waterproof Squashing Bending Twisting					
Evolution and Inheritance									<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

								<p>produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <ul style="list-style-type: none"> ➤ Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Vocabulary								<p>living things change fossils offspring vary non identical characteristics variation evolution adaption inherit/inheritance Charles Darwin Alfred Wallace adapt environment extreme conditions advantageous/disadv antageous palaeontologists</p>
Light					<ul style="list-style-type: none"> ➤ Notice that light is reflected from surfaces. ➤ Find patterns that determine the size of shadows. 			<ul style="list-style-type: none"> ➤ Understand 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

								<p>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 objects that cast them, and to predict the size of shadows when the position of the light source changes.
Vocabulary					<p>Reflection Surface Shadow Light Source Natural light Absence of light Opaque Transparent</p>			<p>light travels straight reflect/reflection light source object mirrors periscope rainbow filters</p>
Sound						<ul style="list-style-type: none"> ➤ Identify how sounds are made, associating some of them with something vibrating. ➤ Find patterns between the pitch of a sound and features of the object that produced it. ➤ Find patterns between the volume of a sound and the strength of the vibrations that produced it. 		
Vocabulary						<p>Vibrate/vibration/vibrating Air Medium Ear Hear Sound Volume Pitch Faint/fainter Loud/louder</p>		

						String Percussion Woodwind Brass Insulate		
Forces and Magnets					<ul style="list-style-type: none"> ➤ 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 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. 		<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 and friction, that act between moving surfaces. ➤ Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs. 	
Vocabulary					Friction Magnetic Pole Positive Negative Attract Repel		gravity air resistance water resistance friction surface force effect move accelerate decelerate stop change direction brake mechanism pulley gear spring theory of gravitation Galilei Isaac Newton	

<p>Earth and Space</p>							<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. 	
<p>Vocabulary</p>							<p>Earth planets Sun solar system Moon celestial body sphere/ spherical rotate/ rotation spin night and day Mercury Venus Mars Jupiter Saturn Uranus Neptune Pluto 'dwarf' planet orbit revolve geocentric model heliocentric model shadow clocks sundials astronomical clocks</p>	
<p>Electricity</p>						<ul style="list-style-type: none"> ➤ Identify common appliances that run on electricity. ➤ Construct a simple series electrical circuit, identifying and naming its basic 		<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.

						<p>parts, including cells, wires, bulbs, switches and buzzers.</p> <ul style="list-style-type: none"> ➤ 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 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"> ➤ 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 representing a simple circuit in a diagram.
Vocabulary						<p>Appliances Electricity Electrical Circuit Cell Wire Bulb Buzzer Danger Electrical safety Sign Insulators (wood, rubber, plastic, glass) Conductors (metal, water) Switch (open/closed)</p>		<p>voltage brightness volume switches danger series circuit safety sign switch cell (battery) bulb buzzer motor recognised symbols</p>
Rocks					<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. 			

					<ul style="list-style-type: none"> ➤ Recognise that soils are made from rocks and organic matter. 		
Vocabulary					Sedimentary Metamorphic Igneous Organic Volcanic Permeable Non-permeable Porous Non-porous Grains Crystals		
Properties and Changes of Materials						<ul style="list-style-type: none"> ➤ Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. ➤ Understand 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. 	

							<ul style="list-style-type: none"> ➤ 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.
Vocabulary							properties hardness solubility transparency conductive response to magnets dissolve liquid solution solute separate separating solids, liquids, gases filtering sieving evaporating reversible changes mixing evaporation melting irreversible conductivity insulation chemical opaque translucent rusting residue condensing
States of Matter						<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 	

						<p>state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius.</p> <ul style="list-style-type: none"> ➤ Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 		
Vocabulary						<p>Solid/solidify Iron Ice Melt Freeze Liquid Evaporate Condense Gas Container Changing State Heat/heated Cool/cooled Degrees Celsius Thermometer Water cycle Evaporation Condensation Temperature Melting Warm/cool Water Water vapour</p>		
Working Scientifically	<ul style="list-style-type: none"> ➤ Questions why things happen and gives explanations ➤ Recognises and describes ➤ Comments and asks questions ➤ Talks about why things happen and how things work. 	<ul style="list-style-type: none"> ➤ Talk about similarities, differences and changes ➤ Represent their own ideas ➤ Make observations ➤ Use everyday language to solve problems 	<ul style="list-style-type: none"> ➤ Beginning to ask some simple questions and starting to recognise that they can be answered in different ways . ➤ With support can observe closely, using simple equipment. ➤ Beginning to perform simple tests with support. 	<ul style="list-style-type: none"> ➤ Asking simple questions and recognising that they can be answered in different ways . ➤ Observing closely, using simple equipment. ➤ Performing simple tests. ➤ Identifying and classifying. ➤ Using their observations and 	<ul style="list-style-type: none"> ➤ Starting to ask relevant questions and with support, using different types of scientific enquiries to answer them. ➤ Beginning to set up simple practical enquiries, comparative and fair tests. ➤ With support, can make systematic and careful 	<ul style="list-style-type: none"> ➤ Asking relevant questions and using different types of scientific enquiries to answer them. ➤ Setting up simple practical enquiries, comparative and fair tests. ➤ Making systematic and careful observations and, where appropriate, taking accurate measurements 	<ul style="list-style-type: none"> ➤ Begin to plan different types of scientific enquiries to answer questions, including a growing ability to recognise and control variables where necessary. ➤ Begin to take measurements, using a range of scientific equipment, with 	<ul style="list-style-type: none"> ➤ Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. ➤ Taking measurements, using a range of scientific equipment, with increasing accuracy and precision.

			<ul style="list-style-type: none"> ➤ Identifying and classifying. ➤ Using their observations and ideas to suggest answers to questions. ➤ With support, gathering and recording data to help in answering questions. 	<p>ideas to suggest answers to questions.</p> <ul style="list-style-type: none"> ➤ Gathering and recording data to help in answering questions. 	<p>observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <ul style="list-style-type: none"> ➤ With support, gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. ➤ Starting to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. ➤ Reporting findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. ➤ Begin to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. ➤ With support, can identify differences, similarities or changes related to simple scientific ideas and processes. ➤ Starting to use straightforward scientific evidence to answer questions or to support their findings. 	<p>using standard units, using a range of equipment, including thermometers and data loggers.</p> <ul style="list-style-type: none"> ➤ Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. ➤ Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. ➤ Reporting findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. ➤ 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. 	<p>increasing accuracy and precision.</p> <ul style="list-style-type: none"> ➤ Begin to data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs. ➤ Using test results to make predictions to set up further comparative and fair tests. ➤ Using simple models to describe scientific ideas. ➤ Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations. ➤ Identifying scientific evidence that has been used to support or refute ideas or arguments. 	<ul style="list-style-type: none"> ➤ Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs. ➤ Using test results to make predictions to set up further comparative and fair tests. ➤ Using simple models to describe scientific ideas. ➤ Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations. ➤ Identifying scientific evidence that has been used to support or refute ideas or arguments.
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<p>WS Vocabulary</p>	<p>Why, Because , See/saw</p>	<p>Same, Different, Why, Because, Change, See</p>	<p>Questions, Answers, Equipment, Results, Sort, Explore, Observe, Similar/ Similarities, Egg timers, Ruler, Tape measure, Metre stick, Beaker, Collect, Measure, Record, Group, Test, Compare, Describe, Different/ Differences.</p>	<p>Chart, Table, Pictogram, Tally chart, Block diagram / graph. Gather, Order, Notice patterns, Link ideas, Stop watch, Pipette, Syringe, Use comparatives - hotter/ cooler, older / younger etc.</p>	<p>Scientific enquiry, Similarities, Differences, Observations, KeysChanges over time, Identify, Classify, Evidence, Conclusion, Prediction, Magnifying glass, Microscope, Bar charts, Thermometer, Data logger, Comparative tests, Fair test, Careful, Present, Data, Results, Support/Not support</p>	<p>Increase, Decrease, Accurate, Appearance</p>	<p>Opinion, Fact, Variables, Independent variable Dependent variable, Controlled variable, precision, Dependent variable, Controlled variable, precision</p>	<p>systematic, causal relationships, refute, degree of trust.</p>
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