

		YEARS 1&2	YEARS 3&4	YEARS 5&6
Working Scientifically - Skills	Asking questions	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> ask simple questions and recognise that they can be answered in different ways 	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> ask relevant questions and use different types of scientific enquiries to answer them <input type="checkbox"/> set up simple practical enquiries, comparative and fair tests 	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> plan different types of scientific enquiries to answer questions, including recognising and controlling variables
	Measuring and Recording	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> observe closely, using simple equipment <input type="checkbox"/> perform simple tests <input type="checkbox"/> gather and record data to help in answering questions 	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers <input type="checkbox"/> record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables <input type="checkbox"/> gather, record, classify and present data in a variety of ways to help in answering questions 	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate <input type="checkbox"/> record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
	Concluding	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> identify and classify <input type="checkbox"/> use their observations and ideas to suggest answers to questions 	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> identify differences, similarities or changes related to simple scientific ideas and processes <input type="checkbox"/> report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions <input type="checkbox"/> use straightforward scientific evidence to answer questions or to support their findings 	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> identify scientific evidence that has been used to support or refute ideas or arguments <input type="checkbox"/> 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
	Evaluating	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> gather and record data to help in answering questions 	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions 	Pupils should be taught to: <ul style="list-style-type: none"> <input type="checkbox"/> use test results to make predictions to set up further comparative and fair tests

Biology - Plants - Knowledge

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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		<p><i>Revisit basic structure of plants and trees (Y1)</i></p> <p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p>			
	<p><i>Revisit common wild/garden plants and deciduous/evergreen trees (Y1)</i></p> <p>Observe and describe how seeds and bulbs grow into mature plants</p>	<p><i>Revisit how seeds and bulbs grow (Y2)</i></p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>			
	Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	<p><i>Revisit what plants need to grow (Y2)</i></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>			
		Investigate the way in which water is transported within plants			
<p><i>Branches, plants, seed, common, deciduous, evergreen, flowering, fruit, garden, herb, leaf, leaves, root, stem, tree, trunk, vegetable, vegetation, weed, wild</i></p>	<p><i>Bulb, reproduce, germination, shoot, soil, seedlings, height, petal, buds, fruits, wilting, yellowing, light, shade, sun, warm, cool, water, grow, healthy</i></p>	<p><i>requirement, transported, formation, nutrients, anther, carbon dioxide, function, nutrients, ovule, pollen, stigma, light intensity, photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal – wind dispersal, animal dispersal, water dispersal</i></p>			

Biology - Living Things and their Habitats - Knowledge

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Explore and compare the differences between things that are living, dead, and things that have never been alive		<p><i>Revisit differences between things that are living, dead and things that have never been alive (Y2)</i></p> <p>Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p>	<p><i>Revisit how living things can be grouped in a variety of ways (Y4)</i></p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p><i>Revisit how living things can be grouped in a variety of ways (Y4) and the differences in their life cycles (Y5)</i></p> <p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>
	Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other		<p><i>Revisit how different habitats provide for basic needs of different living things (Y2)</i></p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>		
	Identify and name a variety of plants and animals in their habitats, including microhabitats				
	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				
	<i>adult, amphibian, bird, mammal, insect, egg, insect, living, dead, habitat, microhabitat, food chain, carnivore, herbivore, omnivore, living, dead, never been alive, suited, suitable, basic needs, shelter, move, feed, names of local habitats e.g. pond, woodland etc names</i>		<i>Classification, classification key, environment, habitat, human impact, positive, negative, migrate, hibernate</i>	<i>gestation, larvae, lifecycle, metamorphosis, offspring, pregnancy, life cycle, reproduce, sexual, fertilises, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings</i>	<i>Microorganism, vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering</i>

	<i>of micro-habitats e.g. under logs, in bushes etc.</i>				
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Biology - Animals, including humans - Knowledge

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals	<i>Revisit identifying a variety of common animals (Y1)</i> Notice that animals, including humans, have offspring which grow into adults			<i>Revisit animals including humans have offspring which grow into adults (Y2)</i> Describe the changes as humans develop to old age.	
Identify and name a variety of common animals that are carnivores, herbivores and omnivores			<i>Revisit animals that are carnivores, herbivores and omnivores (Y1)</i> Construct and interpret a variety of food chains, identifying producers, predators and prey.		
Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air	<i>Revisit basic needs of animals for survival (Y2)</i> 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	<i>Revisit nutritional needs of animals including humans (Y3)</i> Describe the simple functions of the basic parts of the digestive system in humans		<i>Revisit digestive system (Y4)</i> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Describe the ways in which nutrients and water are transported within animals, including humans.
Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	<i>Revisit importance of exercise, eating right amounts of food and hygiene (Y2)</i> Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	<i>Revisit importance of eating right amounts of food and hygiene (Y2)</i> Identify the different types of teeth in humans and their simple functions		<i>Revisit importance of skeletons and muscles for support and movement (Y3)</i> Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
<i>Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales,</i>	<i>Offspring, growth, Child, Young/Old stages (examples - chick/hen, baby/child/adult,</i>	<i>Nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones,</i>	<i>Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, large intestine, rectum, anus, teeth, incisor, canine,</i>	<i>Puberty, reproduction, gestation period,</i>	<i>Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients,</i>

<i>feathers, fur, beak, paws, hooves</i>	<i>caterpillar/butterfly, Exercise, Heartbeat, Breathing, Hygiene, Germs, Disease, Nutrition, Food types (examples – meat, fish, vegetables, bread, rice, pasta)</i>	<i>muscles, support, protect, skull, ribs, spine, muscles, joints</i>	<i>molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain</i>		<i>water, muscles, cycle, circulatory system, diet, exercise, drugs and lifestyle</i>
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Biology - Evolution & Genetics - Knowledge

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
					<i>Revisit animals including humans have offspring (Animals including Humans Y2) and how humans develop to old age (Animals including Humans Y5)</i> Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
					<i>Revisit how living things are suited to different habitats (Living Things and their Habitats Y2) and how changes to environments can pose dangers to living thing (Living Things and their Habitats Y4)</i> Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
					<i>Fossil, evolution, inheritance, offspring, adaptation, inhabited, ancestor, biodiversity, biome, breeding, characteristics, extinct, generation, maladaptation, mutation, natural selection, Palaeontology, species, theory, variation</i>

Chemistry – Materials - Knowledge

Year 1	Year 2 Use of Everyday Materials	Year 3	Year 4 States of Matter	Year 5 Properties and changes of materials	Year 6
Distinguish between an object and the material from which it is made			<p><i>Revisit difference between objects and materials (Y1)</i></p> <p>Compare and group materials together, according to whether they are solids, liquids or gases</p>	<p><i>Revisit grouping materials which are solids, liquids and gases (Y4)</i></p> <p>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</p>	
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	<i>Revisit the physical properties of everyday materials (Y1)</i>		<i>Revisit the physical properties of everyday materials (Y2)</i>	<i>Revisit the physical properties of everyday materials (Y2)</i>	

	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses		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	Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	
			Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	<p><i>Revisit evaporation and condensation (Y4)</i></p> <p>Know that some materials will dissolve in liquid to form a solution, and Describe how to recover a substance from 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>	
Compare and group together a variety of everyday materials on the basis of their simple physical properties.	<p><i>Revisit grouping materials on basis of physical properties (Y1)</i></p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>			<p><i>Revisit how solid objects can be changed (Y2)</i></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, and that this kind of change is not usually reversible, including changes</p>	

				associated with burning and the action of acid on bicarbonate of soda.	
<i>Object, material, wood, plastic, glass, metal, water, and rock, properties, physical, identify, hard, soft, stretchy, stiff, strong, weak, waterproof, absorb, water, ice, freeze, magnetic, non-magnetic,</i>	<i>Brick, paper, cardboard, shape, changed, twist/twisting, squash/squashing, bend/bending, stretch/stretching, rigid, flexible, waterproofing, resistant, absorbent, transparent/opaque, suitability</i>		<i>Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, condensation, temperature, water cycle, degrees Celsius °C, precipitation</i>	<i>Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material, recover</i>	

Chemistry - The Earth : (Rocks) - Knowledge

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		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.			
		<i>organic matter, rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil</i>			

Physics – Motion, Forces and Magnetism - Knowledge

Year 1	Year 2	Year 3 Forces and Magnets	Year 4	Year 5 Forces	Year 6
		Compare how things move on different surfaces		<p><i>Revisit how things move on different surfaces (Y3)</i></p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p>	
		<p><i>Revisit how some materials can be changed by squashing, bending, twisting and stretching (Everyday Materials Y2)</i></p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance</p>		<p><i>Revisit how some forces need contact between surfaces but others can act at a distance (Y3)</i></p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p>	

		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 material			
		describe magnets as having two poles			
		predict whether two magnets will attract or repel each other, depending on which poles are facing.			
		<i>Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole</i>		<i>Air resistance, water resistance, friction, surface, levers, pulleys, gears, gravity, Earth, mechanisms, simple machines, force meter, weight, fulcrum</i>	

Physics - Waves: Light - Knowledge

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		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			<p><i>Revisit how light is reflected from surfaces (Y3)</i></p> <p>Recognise that light appears to travel in straight lines</p>
		Recognise that light from the sun can be dangerous and that there are ways to protect their eyes			<p><i>Revisit the importance of protecting our eyes from sunlight (Y3)</i></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>
		Recognise that shadows are formed when the light from a light source is blocked by an opaque object			
		Find patterns in the way that the size of shadows change.			<p><i>Revisit how shadows are formed and how shadow size changes (Y3)</i></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>
		<i>Light, Light source, Dark, Absence of light, Transparent, Translucent, Opaque, Shiny, Matt, Surface, Shadow, Reflect, Mirror, Sunlight, Dangerous</i>			<i>Straight lines, Light rays, continuous line, cornea, optic nerve, retina, periscope, filter</i>

Physics - Waves: Sound - Knowledge

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			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 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		
			Recognise that sounds get fainter as the distance from the sound source increases.		
			<i>sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation</i>		

Physics – Electricity - Knowledge

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			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		<i>Revisit basic parts of a circuit and how electricity will only flow in a complete circuit (Y4)</i> Use recognised symbols when representing a simple circuit in a diagram
			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		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
			Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series 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
			Recognise some common conductors and insulators, and associate metals with being good conductors.		
			<i>Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol</i>		<i>circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage, current, resistance, electrons, lux meter, luminance</i>

Physics - Earth & Space - Knowledge

Year 1 Seasonal Changes	Year 2	Year 3	Year 4	Year 5 Earth and Space	Year 6
				<p><i>Revisit how magnets have two poles and that some forces need contact but can act at a distance (Forces and Magnets Y3)</i></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>Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies</p>				<p><i>Revisit how weather is associated with the seasons and day length (Y1)</i></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>	
<p><i>Weather (sunny, rainy, windy, snowy etc) Seasons (winter, summer, spring, autumn), Sun, sunrise, sunset, Day length, shadow, hemisphere, poles, equator</i></p>				<p><i>Earth, Sun, Moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, Spherical, Solar system, rotates, star, orbits, planets, axis</i></p>	