

Organisation of Knowledge	Working scientifically	Plants	Animals including humans	Everyday materials	Seasonal change
Relevant ELG	ELG: Listening, Attention and Understanding  - Make comments about what they have heard and ask questions to clarify their understanding.  ELG: Fine motor skills  - Use a range of small tools, including scissors, paint brushes and cutlery.  ELG: Building Relationships  - Work and play cooperatively and take turns with others.	<ul> <li>Explore the natural world around them, making observations and drawing pictures of plants and animals.</li> <li>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</li> <li>ELG: Speaking</li> <li>Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.</li> <li>ing</li> <li>ing</li> <li>ips</li> <li>ork and play</li> <li>operatively and e turns with</li> </ul>		making observations and drawing pictures of plants and animals.  - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.  - Participate in small group, class and one-to-one discussions, offering their own ideas,	
KS1 readiness objectives	To feel confident to answer simple questions about observable properties of objects and people, animals and plants around them To compare objects in their environment and talk about similarities and differences To ask questions about the world around them, and seek to find their own answers	To know what a plant is To know what a flower is To know where you see plants To describe different plants and flowers	To know what an animal is To recognise and name a variety of different animals To know the names of different body parts of humans and animals they have experience of	To recognise that different everyday objects are made from different materials To describe how different objects look and feel	To know about different types of weather To observe changes in trees and plants as the seasons progress



		Reception	KS1	LKS2	UKS2
	Asking •	Answer some simple scientific questions. Give a simple reason for their answer. Ask their own simple questions about the world around them.	Pupils should be taught to:  Ask simple questions and recognise that they can be answered in different ways.	Pupils should be taught to:  Ask relevant questions and use different types of scientific enquiries to answer them  Set up simple practical enquiries, comparative and fair tests	Pupils should be taught to:  Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
Scientifically	Measuring and recording	Begin to explain what they have found out. Show their work using pictures, labels and captions. Perform a simple test and name simple pieces of equipment. Learn how to handle and use pieces of equipment safely. Discuss similarities and differences	Pupils should be taught to:  Observe closely, using simple equipment Perform simple tests Gather and record data to help in answering questions	Pupils should be taught to:  Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  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	Pupils should be taught to:  Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate  Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
Working	Concluding	ils should be taught to: Identify things they observe Develop ideas for grouping	Pupils should be taught to:  Identify and classify  Use their observations and ideas to suggest answers to question	Pupils should be taught to:  Identify differences, similarities or changes related to simple scientific ideas and processes  Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  Use straightforward scientific evidence to answer questions or to support their findings	Pupils should be taught to:  Identify scientific evidence that has been used to support or refute ideas or arguments  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
	Evaluatin			Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Use test results to make predictions to set up further comparative and fair tests



	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	-identify foods that are grown and come from plants.  -identify basic features of a plant and what it may need to grow.  -observe different plants growing.	-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.	-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.  - identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)	- 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	-recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats)  - explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats)  -recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)	-describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)	-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. (Y6 - Living things and their habitats)  - give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)



	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals, including Humans	- describe what they can see, feel and hear when outside.  -name some parts of the human body.  -recognise that humans have similarities and differences.  -identify some animals from specific habitats.  - discuss why some animals are suited for different habitats  - recognise similarities and differences of animals in this country and in other countries.  - explore hibernation and its purpose.	- 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 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.	- 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  -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. (Y2 - Living things and their habitats)	- 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.	- 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	- describe the changes as humans develop to old age.  -describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats)  - describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)	- 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, including humans.  -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. (Y6 - Living things and their habitats)  -give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)



	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Living Things	identify the various stages of a simple life cycle e.g. human caterpillar/butterfly.  - identify the habitat of a minibeast and why they live there.	-identify and name a variety of common wild and garden plants (Y1 - Plants)  -identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)  -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)  -identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans)  - describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals, including humans)  - observe changes across the four seasons. (Y1 - Seasonal change)	- 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.  - notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals including humans)	- explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)	- 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.  - construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)	- 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.	- 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.  -recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (Y6 - Evolution and inheritance)  - identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Y6 - Evolution and inheritance)





	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Materials	- to identify some materials e.g. wood, plastic, fabric,  -to spot materials in the local environment.  -to describe how some materials feel e.g. bendy, stretchy, hard.  -to identify similarities and differences.  -to look at how materials react to water e.g. floating and sinking.	-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.	- 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.	- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 - Rocks)  - describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks)  - 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. (Y3 - Forces and magnets)	-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.  - recognise some common conductors and insulators, and associate metals with being good conductors. (Y4 - Electricity)	- 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 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	



	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Seasonal Changes	-to know that there are four seasons and name them to use some scientific words to describe their environment and link it to the season they are in to draw their own ideas about their own environment and things that they like to do in each season to describe the changes between each season and describe why some things belong in certain seasons.	-observe changes across the four seasons  - observe and describe weather associated with the seasons and how day length varies				-use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and space)	



	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		-distinguish between an	- identify and compare the	- compare and group			-recognise that living
		object and the material	suitability of a variety of	together different kinds of			things have changed over
		from which it is made. (Y1	everyday materials,	rocks on the basis of their			time and that fossils
		- Everyday materials)	including wood, metal,	appearance and simple			provide information about
		- identify and name a	plastic, glass, brick, rock,	physical properties			living things that inhabited
		variety of everyday	paper and cardboard for				the Earth millions of
		materials, including wood,	particular uses. (Y2 - Uses	- describe in simple terms			years ago. (Y6 - Evolution
		plastic, glass, metal,	of everyday materials)	how fossils are formed			and inheritance)
		water, and rock. (Y1 -		when things that have			
2		Everyday materials)		lived are trapped within			
KOCKS				rock			
2		- describe the simple					
		physical properties of a		- recognise that soils are			
_		variety of everyday		made from rocks and			
		materials. (Y1 - Everyday		organic matter.			
		materials)					
		- compare and group					
		together a variety of					
		everyday materials on the					
		basis of their simple					
		physical properties. (Y1 -					
		Everyday materials)					



	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		-identify, name, draw and		- recognise that they need		-compare and group	- recognise that light
		label the basic parts of the		light in order to see things		together everyday	appears to travel in
		human body and say		and that dark is the		materials on the basis of	straight lines
		which part of the body is		absence of light		their properties, including	
		associated with each				their hardness, solubility,	- use the idea that light
		sense. (Y1 - Animals,		- notice that light is		transparency, conductivity	travels in straight lines to
		including humans)		reflected from surfaces		(electrical and thermal),	explain that objects are
						and response to magnets.	seen because they give
		-describe the simple		- recognise that light from		(Y5 - Properties and	out or reflect light into the
		physical properties of a		the sun can be dangerous		changes of materials)	eye
=		variety of everyday		and that there are ways to			
Light		materials. (Y1 - Materials)		protect their eyes			- explain that we see
=							things because light
				- recognise that shadows			travels from light sources
				are formed when the light			to our eyes or from light
				from a light source is			sources to objects and
				blocked by a solid object			then to our eyes
				- find patterns in the way			- use the idea that light
				that the size of shadows			•
							travels in straight lines to explain why shadows have
				change.			' ' ' I
							the same shape as the
							objects that cast them.



	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	-to understand the		-find out how the shapes	- compare how things		- explain that unsupported	
	difference between		of solid objects made from	move on different surfaces		objects fall towards the	
	floating and sinking.		some materials can be			Earth because of the force	
			changed by squashing,	- notice that some forces		of gravity acting between	
			bending, twisting and	need contact between two		the Earth and the falling	
			stretching. (Y2 - Uses of	objects, but magnetic		object	
			everyday materials)	forces can act at a			
				distance		- identify the effects of air	
						resistance, water	
				- observe how magnets		resistance and friction,	
				attract or repel each other		that act between moving	
				and attract some materials		surfaces	
				and not others			
(0						- recognise that some	
Forces				- compare and group		mechanisms, including	
ည				together a variety of		levers, pulleys and gears,	
<u> </u>				everyday materials on the		allow a smaller force to	
LL				basis of whether they are		have a greater effect.	
				attracted to a magnet, and			
				identify some magnetic			
				materials			
				- describe magnets as			
				having two poles			
				That mig two poles			
				- predict whether two			
				magnets will attract or			
				repel each other,			
				depending on which poles			
				are facing.			



Topic	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	- to know we hear with	-identify, name, draw and			- identify how sounds are		
	our ears.	label the basic parts of			made, associating some		
		the human body and say			of them with something		
		which part of the body is			vibrating		
		associated with each					
		sense. (Y1 - Animals,			- recognise that		
		including humans)			vibrations from sounds		
					travel through a medium		
					to the ear		
_					- find patterns between		
2					the pitch of a sound and		
=					features of the object		
<u> </u>					that produced it - find		
Sound					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.		



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				- identify common appliances		- associate the brightness of a
				that run on electricity		lamp or the volume of a buzzer
						with the number and voltage
				- construct a simple series		of cells used in the circuit
				electrical circuit, identifying		
				and naming its basic parts,		- compare and give reasons
				including cells, wires, bulbs,		for variations in how
				switches and buzzers		components function,
						including the brightness of
				- identify whether or not a		bulbs, the loudness of buzzers
. <del></del>				lamp will light in a simple		and the on/off position of
Electricity				series circuit, based on		switches
.≓				whether or not the lamp is		
<b>.</b>				part of a complete loop with a		- use recognised symbols when
				battery		representing a simple circuit in
<del></del>						a diagram.
				- 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.		
				good conductors.		



	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Earth and Space		-observe changes across the four seasons. (Y1 – Seasonal changes)  -observe and describe weather associated with the seasons and how day length varies. (Y1 – Seasonal changes)				- 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.	





	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			-identify that most living	-describe in simple terms	-recognise that	-describe the life process	- recognise that living
			things live in habitats to	how fossils are formed	environments can change	of reproduction in some	things have changed over
8			which they are suited and	when things that have	and that this can	plants and animals. (Living	time and that fossils
			describe how different	lived are trapped within	sometimes pose dangers	things and their habitats -	provide information about
<u>0</u>			habitats provide for the	rock. (Y3 - Rocks)	to living things. (Y4 - Living	Y5)	living things that inhabited
≓			basic needs of different		things and their habitats)		the Earth millions of years
inheritance			kinds of animals and	-explore the part that			ago
þ			plants, and how they	flowers play in the life			
			depend on each other. (Y2	cycle of flowering plants,			- recognise that living
			- Living things and their	including pollination, seed			things produce offspring
nd			habitats)	formation and seed			of the same kind, but
ar				dispersal. (Y3 - Plants)			normally offspring vary
			-notice that animals,				and are not identical to
Evolution			including humans, have				their parents
Ħ			offspring which grow into				
<u> </u>			adults. (Y2 - Animals,				- identify how animals and
<u> </u>			including humans)				plants are adapted to suit
<b>&gt;</b>							their environment in
ш́ _							different ways and that
							adaptation may lead to
							evolution.