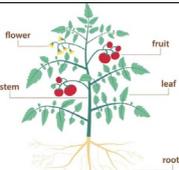
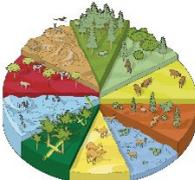
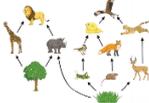
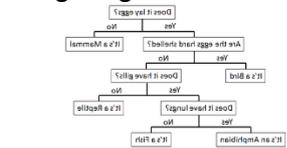
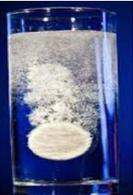
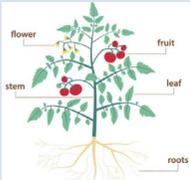
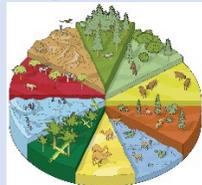


Key Stage 1						
AUTUMN TERM		SPRING TERM		SUMMER TERM		
AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2	
YEAR 1	 <p>Seasonal Change / Plants</p>	 <p>Animals including humans</p>		 <p>Everyday material</p>		
	<p>Seasonal change / plants (running throughout the year)</p>					
YEAR 2	 <p>Seasonal Change / Plants</p>	<p>Living things and their habitats</p> 		<p>Animals including humans</p> 	<p>Use of everyday materials</p> 	
	<p>Seasonal Change/ Plants (running throughout the year)</p>					
Key Stage 2						
LKS2 CYCLE A	<p>Animals including humans</p> 	<p>Rocks</p> 	<p>Light</p> 	<p>Forces and magnets</p> 	<p>Living things and their habitats</p> 	
	LKS2 CYCLE B	<p>Animals including humans</p> 	<p>Electricity</p> 	<p>Sound</p> 	<p>States of matter</p> 	<p>Plants</p> 
UKS2 CYCLE A		<p>Living things and their habitats</p> 	<p>Light</p> 	<p>Forces</p> 	<p>Electricity</p> 	<p>Properties of materials</p> 
	UKS2 CYCLE B	<p>Animals including humans</p> 	<p>Earth and space</p> 	<p>Forces</p> 	<p>Living things and their habitats</p> 	<p>Properties of material</p> 

YEAR 1							
AUTUMN 1		AUTUMN 2		SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Everyday material 		Plants 		Animals including humans 			
<b>Prior learning</b>		<p><b>Understanding of the World – EYFS</b></p> <p>In EYFS children should:</p> <ul style="list-style-type: none"> <li>• Make observations of plants.</li> <li>• Know some names of plants, trees and flowers.</li> <li>• May be able to name and describe different plants, trees and flowers.</li> <li>• Show some care for their world around them.</li> </ul>		<p><b>Understanding of the World – EYFS</b></p> <p>In EYFS children should:</p> <ul style="list-style-type: none"> <li>• Be able to identify different parts of their body.</li> <li>• Have some understanding of healthy food and the need for variety in their diets.</li> <li>• Be able to show care and concern for living things.</li> <li>• Know the effects exercise has on their bodies.</li> <li>• Have some understanding of growth and change.</li> <li>• Can talk about things they have observed including animals.</li> </ul>		<p><b>Understanding of the World – EYFS</b></p> <p>In EYFS children should:</p> <ul style="list-style-type: none"> <li>• Be able to identify different parts of their body.</li> <li>• Have some understanding of healthy food and the need for variety in their diets.</li> <li>• Be able to show care and concern for living things.</li> <li>• Know the effects exercise has on their bodies.</li> <li>• Have some understanding of growth and change.</li> <li>• Can talk about things they have observed including animals.</li> </ul>	
<b>Future learning</b>		<p>In Year 2 Children will:</p> <ul style="list-style-type: none"> <li>• Observe and describe how seeds and bulbs grow into mature plants.</li> <li>• Find out and describe how plants need water, light and warmth to grow and stay healthy.</li> </ul>		<p>In Year 2 children will:</p> <ul style="list-style-type: none"> <li>• Know that animals, including humans, have offspring which grow into adults.</li> <li>• Know the basic stages in a life cycle for animals, including humans.</li> <li>• Find out and describe the basic needs of animals, including humans, for survival (water, food and air).</li> <li>• Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul>			

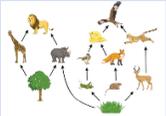
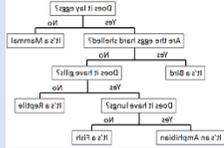
<p><b>Essential knowledge / National Curriculum Objectives</b></p>	<p>Pupils will learn that objects can be made of one or more materials, and will be taught to identify the different materials that compose an object e.g. wood, plastic, metal, etc. Pupils will investigate materials and be able to describe some of their properties e.g. reflective, hard, etc. Simple tests will highlight how dimensions/composition of some materials can affect some of the properties e.g. how bendy it is.</p>	<p>Pupils will be able to identify a variety of common plants (specifically found in the local area) by analysing its characteristics. Commonalities between these plants will be identified and allow pupils to group them based on these e.g. deciduous trees. The basic structure of a flowering plant will be embedded.</p> <ul style="list-style-type: none"> <li>• <i>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</i></li> <li>• <i>Identify and describe the basic structure of a variety of common flowering plants.</i></li> <li>• <i>Identify and name the roots, trunk, branches and leaves of trees.</i></li> </ul>	<p>Pupils will learn about the 5 different groups of animal vertebra - fish, amphibians, reptiles, birds and mammals and be able to name examples from each group. They will identify some of the different features/adaptations of animals e.g. wings, tails, ears etc. They will also learn of some animals feeding i.e. some animals eat other animals, some eat plants, some eat both. Pupils will learn to draw, label and identify which body part is associated with which sense, as well as discuss how human (and other animals) use these to investigate the world around them. Other common basic human body parts will also be identified and pupils will know that these vary from person to person e.g. eye colour.</p> <ul style="list-style-type: none"> <li>• <i>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</i></li> <li>• <i>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</i></li> </ul>
<p><b>Essential working scientifically skills</b></p>	<p>To identify and classify. To ask simple questions. To perform simple tests. To record simple data in order to answer a question.</p>	<p>To ask simple questions and recognise that they can be answered in different ways. To observe carefully using simple equipment. To use parts of the plant to identify and classify it.</p>	<p>To observe closely, using simple equipment. To record data in a table. To identify and name a variety of common animals that are birds, fish, amphibians, reptiles and mammals. To use secondary sources to find out more about animals (non-statutory).</p>
<p><b>Essential vocabulary</b></p>	<p>Wood, plastic, glass, metal, water, rock, brick, fabric, sand, paper, flour, butter, milk, soil, hard/soft, stretchy/not stretchy, shiny/dull, rough/smooth, bendy, transparent.</p>	<p>Trees - deciduous, evergreen, ash, birch, beech, rowan, oak, horse chestnut, willow, sycamore, pine, holly, etc. Wild flowering plants - daisy, dandelion, plantain, red clover, shepherd's purse, spear thistle, white deadnettle and yarrow. Parts of plants – roots, branch, trunk, stalk, leaf/leaves, flower, petal, stem, wild, garden, seeds, bulbs and twigs.</p>	<p>Birds, fish, amphibians, reptiles, mammals and invertebrates. Feathers, scales, gills, fins, hair, land, water, backbone, skeleton. Carnivores, herbivores, omnivores. Meat, plants. <i>Sight, hearing, touch, taste, smell, head, neck, ear, mouth, shoulder, hand, fingers, leg, foot, thumb, eye, nose, knee, toes, teeth, elbow.</i></p>

			Name of animals found on school ground and those which could be kept as pets.
<b>Essential experiences</b>	Repurposing of waste material.	Grow their own vegetables and eat them.	Go pond dipping.
<b>Influential figures</b>		Author & Botanist – Beatrix Potter	Activist – Steve Irwin Animal Conservationist - Chris Packham
<b>Linked texts</b>		Tree: Seasons Come, Seasons Go (Patricia Hegarty and Britta Teckentrup)  A Little Guide to Wild Flowers (Charlotte Voake)  The Things That I LOVE about TREES (Chris Butterworth)  Harry’s Hazelnut (Ruth Parsons)	One Year with Kipper (Mick Inkpen)  Snail Trail (Ruth Brown)  Superworm (Julia Donaldson & Axel Scheffler)

YEAR 2						
	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	<b>Animals including humans</b> 		<b>Use of everyday materials</b> 	<b>Plants</b> 	<b>Living things and their habitats</b> 	
<b>Prior learning</b>	Understanding of the World - EYFS		Understanding of the World - EYFS		Understanding of the World - EYFS	

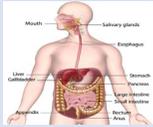
<b>Essential knowledge</b>	Pupils will learn that animals (including humans) have offspring which grow into adults. Pupils will also learn the importance of exercise and eating the right amount of different food groups to keep healthy.	Pupils will learn that materials are selected for the suitability of its properties for the task it is expected to perform e.g. a window is made of glass because it is waterproof and transparent. Simple tests and classification of materials will be used to identify suitable materials to perform a task.	Pupils will learn that plants grow from seeds or bulbs, and describe the process to full maturation of the plant. Through a series of investigations, pupils will be able to identify the criteria needed for plants to successfully grow and be healthy i.e. space, light, water, etc.	Pupils will learn that all objects are either living, dead, or have never been alive. They will 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. Pupils will be able to name a variety of plants and animals in their habitats, including microhabitats. They will be able to explain how a microhabitat may have different conditions to the wider habitat that it belongs to. Pupils will be able to produce simple food chains that illustrates their understanding that these are all initiated by plants before moving through the levels of consumers.
<b>Essential working scientifically skills</b>	To use observations to suggest answers to questions. To record data. To observe using simple equipment. To perform a simple test.	To ask simple questions and recognise that they can be answered in different ways. To gather and record data to help in answering questions. To perform simple tests.	To observe closely using simple equipment. To sort objects using observable features (non-statutory). To recognise that questions can be answered in a range of ways.	To ask simple questions and recognise that they can be answered in different ways. To observe closely. To gather and record data to help answer a question. To perform a simple test. To be able to record data in a bar chart.
<b>Essential vocabulary</b>	Offspring, baby, infant, adult. Growth, nutrition, water, respiration, healthy, grow, strong, energy. Hygiene, clean, wash, germs. Head, torso, arms, legs, feet, etc.	Wood, plastic, glass, metal, water, rock, brick, fabric, sand, paper, flour, butter, milk, soil, hard/soft, stretchy/not stretchy, shiny/dull, rough/smooth, bendy, transparent.	Parts of plants – roots, branch, trunk, stalk, leaf, flower, petal, seeds, bulbs and twigs. Needs of a plant – water, light, heat, temperature.	Invertebrates – snail, slug, woodlouse, spider, beetle, fly, etc Pond animals – pond skater, water slater, ramshorn snail, pond snail, leech, common frog, smooth newt, etc Food chain, producer, consumer, habitat, carnivore, omnivore, herbivore.
<b>Essential experiences</b>		Make own waterproof shelter for teddy.	Visit from a bee expert.	
<b>Influential figures</b>	Scientist – Mae Jemison	Engineer – Ole Kirk Christia		Scientist - Sir David Attenborough

LKS2 CYLCE A						
	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2

	<p><b>Animals including humans</b></p> 	<p><b>Rocks</b></p> 	<p><b>Light</b></p> 	<p><b>Forces and magnets</b></p> 	<p><b>Living things and their habitats</b></p> 
<p><b>Prior learning</b></p>	<p><b>Animals including humans – KS1</b></p>	<p><b>Everyday materials and Use of everyday materials – KS1</b></p>	<p><b>Seasonal changes and Everyday materials – KS1</b></p>	<p><b>Everyday materials and Use of everyday materials – KS1</b></p>	<p><b>Plants, Animals including humans, and Living things and their habitats – KS1</b></p>
<p><b>Essential knowledge</b></p>	<p>Pupils will learn that animals – unlike plants – must consume their food for nutrients and energy. Pupils will discover a range of food containing the different nutrients – carbohydrates (including sugars), protein, vitamins, minerals, fats, sugars and water and fibre that are needed by the body to stay healthy, and that a single piece of food will often provide a range of nutrients. Pupils will identify that humans, and other vertebrate animals, have skeletons and muscles which help them move and provide protection and support.</p>	<p>Pupils will learn that rocks are a neutrally occurring material and explore the different physical properties that different rocks possess e.g. chalk (limestone is soft), whereas marble (limestone) is exceptionally hard. Soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). The type of rock, size of rock pieces and the amount of organic matter affect the property of the soil. Pupils will be able to explain the formation of fossils i.e. formed millions of years ago when plants and animals died, they fell into an appropriate medium, became covered, and under great pressure over a</p>	<p>Pupils will recognise that dark is the absence of light, and that light is required for objects to be seen. Pupils will be able to illustrate how light moves from a source, is reflected off the surface and enters the eye. Shadows are formed on a surface when an opaque or translucent object is between a light source and the surface and blocks some of the light. Pupils will investigate the comparative distances an object, light source and surface has on the size of shadow. Pupils will recognise that looking directly into the sun is damaging to the eyes.</p>	<p>Pupils will explore the effects of magnets on other magnets and how they either attract or repel one another, dependent on their two poles. This force on one another acts at a distance and doesn't require contact. Pupils will investigate which everyday items are magnetic or non-magnetic and conclude which materials are magnetic based on if they are attracted to the magnet.</p>	<p>Pupils will be familiar with a large range of animals from a variety of habitats, and be able to group these based in a variety of ways. They will both use and create their own classification keys for identification of organisms found in their local and wider environment. Exploration of human and physical factors altering environments will highlight to pupils the impact this is having on different species across the globe.</p>

		long time the dissolving plant and animal matter is replaced by minerals.			
<b>Essential working scientifically skills</b>	To record using diagrams. To report on findings from enquiries. To use evidence to answer questions. To set up a comparative test.	To make careful observations. To set up simple comparative tests. To present information in a branching key.	To record findings using diagrams. To make systematic and careful observations and measurements. To record findings as a bar chart.	To set up a simple fair-test. To record findings in a bar chart. To use results to draw simple conclusions. To make systematic and careful observations.	To gather, record, classify and present data in a variety of ways to help in answering questions. To report on findings from enquiries, including oral and written explanations.
<b>Essential vocabulary</b>	Skeleton, bone, muscles, support, protect, spine, ribs, skull, voluntary and involuntary muscles. Sugars, carbohydrates, protein, vitamins, minerals, nutrition, nutrients.	Rocks, metamorphic, igneous, sedimentary, magma, volcano, sandy/chalk/clay, layers, pressure, heat, cycle, fossil, fossilisation.	Light, dark, shadow, transparent, translucent, opaque, light source, bioluminescent, hi-visibility, safety, reflect, mirror.	Force, push, pull, attract, repel, magnet, magnetic, poles, north pole, south pole, polarity, steel, iron, copper.	Classification, characteristic, adaptation, environment, environmental factors, human pressures/impact, species, organism, habitat, conservation, contamination, pollution, ecology, ecosystem, climate change.
<b>Essential experiences</b>					
<b>Influential figures</b>	Explorer – Vilhjalmur Stefansson	Scientist – Mary Anning	Scientist – Ibn al-Haytham		Activist – Greta Thunberg

LKS2 CYLCE B						
	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2

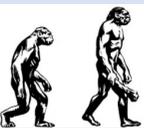
	<b>Animals including humans</b> 	<b>Electricity</b> 	<b>Sound</b> 	<b>Plants</b> 	<b>States of matter</b> 
<b>Prior learning</b>	<b>Animals including humans – KS1</b>	<b>Understanding of the World - EYFS</b>	<b>Understanding of the World – EYFS</b> <b>Animals including humans – KS1</b>	<b>Plants, and Living things and their habitats – KS1</b>	<b>Everyday materials, and Uses of everyday materials – KS1</b>
<b>Essential knowledge</b>	<p>Pupils will be able to describe the process by which digestion takes place starting with mastication in the mouth and resulting in expulsion of waste at the end. Pupils will be able to describe the function of the different parts of the digestive system including physical vs chemical elements. Pupils will explore the different types of teeth found in the human mouth and be able to explain the role of each type. Pupils will be able to study food chain to identify produced, predators and prey.</p>	<p>Pupils will identify common household items that run on electricity and be able to state which regularly use main electricity and those that may use batteries. They will construct electrical circuits using common output devices such as buzzes, lamps and motors and relate these to potential items found in their environment. Pupils will understand that a break in a circuit will prevent the output device from working but know that this is often desired and switches are often used to purposefully make and break circuits. Pupils will investigate conductive and insulating materials.</p>	<p>Pupils will be able to explain how sounds are made through vibrations and that these travel through a medium to their ear. Pupils will spot patterns between the pitch created by a source and similarities with other objects producing similar pitches. They will recognise how the volume of a sound can be altered through the strength of vibration but the pitch remains the same.</p>	<p>Pupils will identify the different functions of parts of flowering plants e.g. roots, stem/trunk, leaves and flower. They will discover the requirements for a plant to grow and live healthily e.g. quantity of air, light, water, etc and how these vary from plant to plant (adaptations of plants to habitat). Pupils will investigate the way in which water is transported within plants including describing the functions involved in transporting water and nutrients. They will also explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>Pupils will learn about the 3 different states of matter. A solid keeps its shape and has a fixed volume. A liquid has a fixed volume but changes in shape to fit the container. A liquid can be poured and keeps a level, horizontal surface. A gas fills all available space; it has no fixed shape or volume.. Melting is a state change from solid to liquid. Freezing is a state change from liquid to solid. The freezing point of water is 0°C. Boiling is a change of state from liquid to gas that happens when a liquid is heated to a specific temperature and bubbles of the gas can be seen in the liquid. Water boils when it is heated to 100°C. Evaporation is the same state change as boiling (liquid to gas), but it happens slowly at lower temperatures and only at the surface of the liquid. Evaporation happens more quickly if the temperature is higher, the liquid is spread out or it is windy. Condensation is the change back from a gas to a liquid caused by cooling. Water at the surface of seas, rivers etc. evaporates into water vapour (a gas). This rises, cools and condenses back into a liquid forming clouds. When too much water has condensed, the water droplets in the cloud get too heavy and fall back down as rain, snow,</p>

					sleet etc. and drain back into rivers etc. This is known as precipitation. This is the water cycle.
<b>Essential working scientifically skills</b>	To identify the correct type of enquiry to answer a question. To set up a simple test. To record findings using labelled diagrams. To use written explanations to report on findings from an enquiry.	To set up a simple practical enquiry. To use results to make predictions. To record findings using diagrams.	To use a scientific enquiry to answer a question. To set up a simple practical enquiry. To make systematic and careful measurements with a data logger. To report on findings from an enquiry.	To set up a simple practical enquiry. To make systematic and careful observations. To gather and record data. To use scientific evidence to answer questions or to support their findings.	To set up a fair test. To use results to draw simple conclusions. To use a data logger to take accurate measurements. To use a thermometer to take accurate measurements.
<b>Essential vocabulary</b>	Digestive system, oesophagus, stomach, acid, small intestine, protein, vitamin, mineral, fats, carbohydrate, energy, growth, repair. Saliva, teeth, incisors, canines, premolars, molars.	Electricity, appliance, circuit, series, component, battery, bulb (lamp), buzzer, crocodile clip, leads, wires, switch, motor, brighter, duller, quiet, loud, conductor, insulator.	Source, vibration, volume, pitch, audible, frequency, quiet, loud, low, high, instrument, energy, Hertz, echo, reflect, absorption, amplitude.	Roots, branch, trunk, stalk, leaf, flower, seeds, petal, stamen (anther + filament), carpel (stigma + style + ovary + ovule). Process, pollination, fertilisation, germination.	States of matter, solid, liquid, gas, melting, condensation, evaporation, solidifying, freezing. Water cycle, water vapour, steam, heating, cooling. Oxygen, carbon dioxide, methane, water, oil, rocks, etc.
<b>Essential experiences</b>					
<b>Influential figures</b>		Engineer – Elon Musk	Designer – Sir Jonathon Ive		

UKS2 CYCLE A						
	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	<b>Living things and their habitats</b> 	<b>Light</b> 	<b>Forces</b> 	<b>Electricity</b> 	<b>Properties of materials</b> 	<b>Animals including humans</b> 
<b>Prior learning</b>	Living things and their habitats – LKS2	Light – LKS2	Forces and magnets – LKS2	Electricity – LKS2	Use of everyday materials – KS1 Forces and magnets, and States of matter – LKS2	Animals including humans – LKS2
<b>Essential knowledge</b>	<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. and micro-organisms!</p> <p>group, classify and identify them using keys or other methods</p> <p>Living things can be formally grouped according to characteristics. Plants and animals are two main groups but there are other living things that do not fit</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>Light appears to travel in straight lines, and we see objects when light from them</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> <p>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</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>use simple apparatus to construct and control a series 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>describe how the circuit may be affected when changes are made to it</p> <p>use recognised symbols when representing a simple circuit in a diagram</p> <p>Adding more cells to a complete circuit will make a bulb brighter,</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> <p>know (identify and describe) 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 (describe how to) how mixtures (and solutions) might be separated, including through filtering, sieving and evaporating</p>	<p>Identify and name the main parts of the human circulatory system, and explain 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>The heart pumps blood in the blood vessels around to the lungs. Oxygen goes into the blood and carbon dioxide is removed. The blood goes back to the heart and is then pumped around the</p>

	<p>into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms. Plants can make their own food whereas animals cannot. Animals can be divided into two main groups: those that have backbones (vertebrates); and those that do not (invertebrates). Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Each group has common characteristics. Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms. Plants can be divided broadly into two main groups: flowering plants; and nonflowering plants.</p>	<p>goes into our eyes. The light may come directly from light sources, but for other objects some light must be reflected from the object into our eyes for the object to be seen. Objects that block light (are not fully transparent) will cause shadows. Because light travels in straight lines the shape of the shadow will be the same as the outline shape of the object</p>		<p>a motor spin faster or a buzzer make a louder sound. If you use a battery with a higher voltage, the same thing happens. Adding more bulbs to a circuit will make each bulb less bright. Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter. Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well. You can use recognised circuit symbols to draw simple circuit diagrams</p>		<p>body. Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed. As they are used, they produce carbon dioxide and other waste products. Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well our heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins.</p>
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<p><b>Essential working scientifically skills</b></p>	<p>To make a key to classify organisms. To identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>To use scientific evidence to support or refute on idea. To plan a scientific enquiry to answer a questions. To use test results to make predictions to set up further comparative tests. To plan a fair-test; recognising and controlling variables.</p>	<p>To identify scientific evidence that has been used to support or refute ideas or arguments. To take repeated accurate measurements using a stopwatch. To explain the degree of trust in results. To plan a fair-test; identifying the control variables.</p>	<p>To take repeat measurements of data with precision using a data-logger. To explain the degree of trust can be had in results. To plan a fair-test by recognising the control variables. To use predictions to set up fair tests. To use scientific diagrams.</p>	<p>To take accurate measurements using a data-logger. To measure accurately using a thermometer. To record data in a line graph. To report and present findings from enquiries, including conclusions, causal relationships and explanations.</p>	<p>To plan pattern-seeking enquiry. To report causal relationships. To record results using a line graph. To present findings from enquiries.</p>
<p><b>Essential vocabulary</b></p>	<p>Classification, vertebrate, invertebrate, flowering plant, non-flowering plant, characteristics, adaptations, genes. Kingdoms: animal, plant, 'micro-organism', Classes: amphibian, reptile, bird, mammal, fish.</p>	<p>Opaque, translucent, transparent, dark, shadow, block, absence of light, reflect, mirror, reflection, light source, sun, bioluminescent, refraction, spectrum, visible light.</p>	<p>Force, gravity, friction, air resistance, upthrust, weight, Newtons (N), particles, surface area, push, pull, balance, mass, grams.</p>	<p>Electricity, Volts, voltage, current, series, parallel, circuit, battery, bulb (lamp), bulb (lamp) holder, buzzer, crocodile clip, leads, motor, wires, switch, conductor, insulator, resistance, output.</p>	<p>Thermal, electrical, conductor, thermal insulator, sieve, filter, evaporate, condense, solvent, solution, solute, soluble, insoluble, solid, liquid, particles, suspensions.</p>	<p>Circulatory system, heart, blood, veins, arteries, pulse, clotting. Diet, balanced, vitamins, minerals, proteins, carbohydrates, sugars, fats. Drugs, caffeine, nicotine, alcohol, cannabis, cocaine, heroine.</p>
<p><b>Essential experiences</b></p>		<p>Create '<a href="#">models</a>' to help explain how light travels from source, to object, to eye.  To make objects 'disappear' and investigate total internal reflection (using a coin, a glass and water).</p>				
<p><b>Influential figures</b></p>	<p>Scientist – Rosaline Franklin</p>	<p>Scientist – Sir Isaac Newton Scientist – Ibn Al-Haytham</p>	<p>Scientist – Sir Isaac Newton</p>	<p>Engineer – William Kamkwamba</p>	<p>Scientist – Stephanie Kwolek</p>	

UKS2 CYLCE B						
	AUTUMN 1 Animals including humans 	AUTUMN 2 Earth and space 	SPRING 1 Forces 	SPRING 2 Living things and their habitats 	SUMMER 1 Properties of material 	SUMMER 2 Evolution and inheritance 
Prior learning	Animals including humans – KS1	Seasonal change – KS1	Forces and magnets – LKS2	Animals including humans – KS1 Plants – LKS2	Use of everyday materials – KS1 Forces and magnets, and States of matter – LKS2	Living things and their habitats, and Rocks – LKS2 Animals including humans – UKS2
Essential knowledge	Describe the changes as humans develop from birth to old age. When babies are young, they grow rapidly. They are very dependent on their parents. As they develop, they learn many skills. At puberty, a child's body changes and develops primary and secondary sexual characteristics. This enables the adult to reproduce. This needs to be taught alongside PSHE.	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 The Sun is a star. It is at the centre of our solar system. There are 8 planets (can choose to name them, but not	recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect A force causes an object to start moving, stop moving, speed up, slow down or change direction. Gravity is a force that acts at a distance. Everything is pulled to the Earth by gravity. This causes unsupported objects to fall. Air resistance, water resistance and friction are contact forces that act between moving	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. name locate and describe the functions of the main parts of plants, including those involved in reproduction As part of their life cycle, plants and animals reproduce. Most animals reproduce sexually. This involves two parents where the sperm from the male fertilises the female egg. Animals,	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. identify, with reasons, whether changes in materials are reversible or not give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday	recognise and describe that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago and evidence for evolution recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

		<p>essential). These travel around the Sun in fixed orbits. Earth takes 365¼ days to complete its orbit around the Sun. The Earth rotates (spins) on its axis every 24 hours. As Earth rotates half faces the Sun (day) and half is facing away from the Sun (night). As the Earth rotates, the Sun appears to move across the sky. The Moon orbits the Earth. It takes about 28 days to complete its orbit. The Sun, Earth and Moon are approximately spherical.</p>	<p>surfaces. The object may be moving through the air or water, or the air and water may be moving over a stationary object. A mechanism is a device that allows a small force to be increased to a larger force. The pay back is that it requires a greater movement. The small force moves a long distance and the resulting large force moves a small distance, e.g. a crowbar or bottle top remover. Pulleys, levers and gears are all mechanisms, also known as simple machines.</p>	<p>including humans, have offspring which grow into adults. In humans and some animals, these offspring will be born live, such as babies or kittens, and then grow into adults. In other animals, such as chickens or snakes, there may be eggs laid that hatch to young which then grow to adults. Some young undergo a further change before becoming adults e.g. caterpillars to butterflies. This is called a metamorphosis. Plants reproduce both sexually and asexually. Bulbs, tubers, runners and plantlets are examples of asexual plant reproduction which involves only one parent. Gardeners may force plants to reproduce asexually by taking cuttings. Sexual reproduction occurs</p>	<p>materials, including metals, wood and plastic. Justify use based on properties</p>	<p>All living things have offspring of the same kind, as features in the offspring are inherited from the parents. Due to sexual reproduction, the offspring are not identical to their parents and vary from each other. Plants and animals have characteristics that make them suited (adapted) to their environment. If the environment changes rapidly, some variations of a species may not suit the new environment and will die. If the environment changes slowly, animals and plants with variations that are best suited survive in greater numbers to reproduce and pass their characteristics on to their young. Over time, these inherited characteristics become more dominant within the</p>
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				through pollination, usually involving wind or insects		population. Over a very long period of time, these characteristics may be so different to how they were originally that a new species is created. Fossils give us evidence of what lived on the Earth millions of year ago and provide evidence to support the theory of evolution. More recently, scientists such as Darwin and Wallace observed how living things adapt to different environments to become distinct varieties with their own characteristics
<b>Essential working scientifically skills</b>	To communicate data using a scatter graph. To present conclusions. To use evidence to refute or support an idea. To report and present findings from enquiries, including conclusions, causal relationships and explanations.	To plan a scientific enquiry to answer a question. To report a presentation of an explanation. To recognise control variables when planning a fair-test.	To recognise control variables when planning a fair-test. To report and present findings from enquiries, including conclusions, causal relationships and explanations. To take accurate measurements.	To plan the correct enquiry to answer a question. To recognise which secondary sources will be most useful to their research (non-statutory). To use scientific diagrams and labels.	To recognise control variables when planning a fair-test. To evaluate an enquiry in terms of the amount of trust one can have in it. To report and present findings from enquiries, including conclusions, causal relationships and explanations.	To identify scientific evidence that has been used to support or refute ideas or arguments. To plan an enquiry that will answer a question. To present findings from an enquiry.
<b>Essential vocabulary</b>	Gestation, foetus, fertilisation, species,	Day, night, axis, rotate, solar system, star, sun,	Force, Newton meter, Newtons (N), push, pull,	Animals, amphibians, reptiles, birds,	Solid, liquid, gas, solvent, solution, solute,	Evolution, evolve, natural selection,

	offspring, characteristics, baby, toddler, adolescent, adult, elderly person, puberty, hormones.	planets, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, orbit, sphere Phases of the Moon, full moon, half moon, crescent moon, waxing, waning.	gravity, balance, mass, grams, mechanical devices, gears, levers, pulleys, springs.	mammals, insects, fish, egg, larva, pupa, nymph, adult, metamorphosis, petal, stamen (anther + filament), carpel (stigma + style + ovary + ovule), processes, pollination, fertilisation, germination	soluble, insoluble, particles, suspensions, reversible, irreversible, reaction, product, reactants, effervesce, smoke, acid, pH, oxidise.	survival, reproduction, offspring, parents, siblings, environment, variation, fossils, ammonites, belemnites, etc.
<b>Essential experiences</b>						
<b>Influential figures</b>	Scientist – Professor Eileen Ingham	Scientist – Brian Cox				Scientist – Charles Darwin