



Reception

Objectives

Understanding the World

ELG: 'The Natural World':

- Explore the natural world around them, making observations and drawing pictures of animals and plants;
- 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;
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

The early years curriculum is spread across 7 areas of learning as opposed to subject areas. The most relevant EYFS outcomes for science are taken from the area of learning 'Understanding the World'.

'Understanding the world' involves guiding children to make sense of their physical world and community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them- from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially and technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension. Science in Reception is introduced indirectly through cross-curricular activities that encourage every child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them. The key drivers are communication and language development (and outdoor learning).

Learning themes and 'Understanding the World' ELG linked learning

Autumn 1 Theme: Super Duper me, Super Duper you!	Autumn 2 Celebrations	Spring 1 People who help us	Spring 2 Wonderful wildlife	Summer 1 Traditional Tales	Summer 2 Explorers
Healthy eating Body parts	Autumn Season Hibernation	Exploring different materials and their properties Growing up – child to adult Care of living creatures	Spring Season Mini beasts – living creatures Life cycles – live chicks Planting and Growing	Planting and Growing continued Growing in different environments Creating using natural materials (i.e found in forest)	Exploring space Exploring the sea
Vocabulary					
face, hair, leg, knee, arm, elbow, back, toes, hands, fingers, nose, mouth, eye, ear, head, human, body, healthy	summer, spring, autumn, winter, season, sun, day, dark, light, night, moon, hot, cold, freeze	material, wood, plastic, glass, paper, rock, fabric, metal, shiny, hard, soft, rough, smooth	tree, trunk, branch, leaves, flowers, stem, petals, fruit, roots, bulb, seed, human,	grow, strong, weak, hard, soft, nature	Earth, moon, planet, space, sun star, float, sink



			animal, fish, birds, omnivore, carnivore, herbivore,		
Continuous provision - environment opportunities independent/adult supported During these example activities, adults will introduce vocabulary to enable children to talk about their observations and experience. They will pose open ended questions "how can we ..." "what would happen if ..." etc. to encourage exploration, prediction and understanding through the experience. Fine and gross motor skills are developed throughout.					
<ul style="list-style-type: none"> • 'Evil Pea' prison • Super hero vegetables • Vegetable writing – make, mark, write • Potato printing • Healthy smoothie making • Outdoor obstacle courses and dens • Doctor's surgery role play area • Light box and authentic x-ray slides • Exploring naming body parts using a full-size anatomical skeleton • Role play first aid 	<ul style="list-style-type: none"> • Cooking pumpkin soup • Leaf printing and bark rubbings • Exploring seasonable root vegetables and squashes • Art using nature e.g. conkers, leaves • Water and ice cube temperature exploration • Art textures using water • Wind vanes • Playdough rainbows • News Weather station role play area • Hibernation dens • Nature walks 	<ul style="list-style-type: none"> • Volunteer visitors- scientific careers • Farm visit – feeding and learning about care of animals • Creating a farm using different craft materials • Farm role play area • Visit from a doctor • Fire station visit • Reading opportunities through selected books 	<ul style="list-style-type: none"> • Live chicks raised from egg – daily observation and documentation • Exploring an egg using microscopes • Observational drawings of eggs and chicks • Mini beast workshop and hunt • Nature walks • Raising caterpillars to butterflies; observing metamorphosis • Butterfly art through symmetrical painting • Fossil exploration and Plaster of Paris excavations • Fizzing "hatching" dinosaur egg • Spring potion making using food colouring, petals, leaves and other natural items • Making a suncatcher 	<ul style="list-style-type: none"> • Beanstalk making • Outdoor planting of seeds, bulbs and tubers • Bridge-making – strength, shape and reinforcement • Building a house to withstand weather- "Huff and puff" experiment • Gingerbread man experiment- melting/dissolving • Healthy porridge making 	<ul style="list-style-type: none"> • Modes of transport- creating and big construction • Map making • Rocket making – junk modelling and big construction • Dark and light experiments using light boxes, torches and blackout dens • Shadow exploration using different light sources • Planet art using paint and bubbles • Tea staining art • Maritime Museum visit • Science Museum workshop
Key Skills					
Observe, curiosity, explore, ask questions, sort, notice similarities, differences, patterns & change (EYFS/DM/CoEL)					



Year 1					
Objectives					
Autumn 1 Animals, including humans –Me	Autumn 2 Everyday Materials	Spring 1 Seasonal Changes	Spring 2 Everyday Materials	Summer 1 Plants	Summer 2 Animals Including Humans - Animals
Vocabulary					
head, body, brain, pupil, ear, sound, tongue, taste	material, fabric, wood, plastic, metal, property, opaque, transparent	season, spring, summer, autumn, winter, hibernate, temperature, weather	strong, clay, brick, roof, slate, window pane, window frame, cotton	seed, plant, stem, petal, deciduous, evergreen, fruit, vegetable	fish, amphibian, reptile, mammal, bird, warm-blooded, cold-blooded, herbivore
Prior Learning					
<p>EYFS ELG: Understanding the World ‘The Natural World’:</p> <ul style="list-style-type: none"> Children will have an understanding of the natural world around them, and be able to make basic observations and drawings of animals and plants; Children will be able to identify some key similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and learnings in class; Children will be able to identify and understand some natural world processes and changes, including the seasons and changing states of matter. 					
Knowledge					
<ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body Say which body part is associated with each sense 	<ul style="list-style-type: none"> Distinguish between an object and the material it's made of Identify & name a variety of everyday materials, including wood, plastic, glass, metal, water and rock Compare & group together a variety of everyday materials Describe the physical properties of a variety of everyday materials 	<ul style="list-style-type: none"> Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies 	<ul style="list-style-type: none"> Distinguish between an object and the material it's made of Identify & name a variety of everyday materials, including wood, plastic, glass, metal, water and rock Compare & group together a variety of everyday materials Describe the physical properties of a variety of everyday materials 	<ul style="list-style-type: none"> Identify & name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen Identify & describe the basic structure of a variety of common plants (roots, stem/trunk, leaves and flowers) 	<ul style="list-style-type: none"> Identify & name a variety of common animals that are birds, fish, amphibians, reptiles and mammals Identify & name a variety of common animals that are carnivores, herbivores and omnivores Describe & compare the structure of a variety of common animals (birds, fish, amphibians, reptiles and mammals including pets)



Working Scientifically

- 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
- ideas to suggest answers to questions
- gathering and recording data to help in answering questions.



Year 2

Objectives

Autumn 1 Everyday Materials	Autumn 2 Animals, including humans- Growth	Spring 1 Living things and their habitats	Spring 2 Animals, including humans – Life cycles	Summer 1 Living things and their habitats- Habitats around the world	Summer 2 Plants
Vocabulary					
material, property, obstacle, construction, stretchy, elastic, force, bend	nutrition, healthy, protein, carbohydrates, dairy, fat, exercise, hygiene	reproduce, excrete, respire, habitat, microhabitat, survive, producer, consumer	life cycle, foetus, womb, offspring, reproduction, transformation, metamorphosis, froglet	organism, rainforest, endangered, biodiversity, ocean, ecosystem, desert, Arctic	photosynthesis, carbon dioxide, oxygen, glucose, pollination, germination, crop, forests
Prior Learning					
<ul style="list-style-type: none"> Distinguish between an object and the material from which it is made (Y1- Everyday Materials) Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, & rock (Y1) Describe the simple physical properties of a variety of everyday materials (Y1) Compare and group together a variety of everyday materials on the basis of their simple physical properties (Y1) 	<ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense (Y1—Animals, including humans) 	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans) 	<ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (Y1- Plants). 	<ul style="list-style-type: none"> Identify and describe the basic structure of a variety of common plants (roots, stem/trunk, leaves and flowers), including trees (Y1 - Plants).



Knowledge					
<ul style="list-style-type: none">Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular usesFind out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	<ul style="list-style-type: none">Notice that animals, including humans, have offspring which grow into adultsFind 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	<ul style="list-style-type: none">Explore and compare the differences between things that are living, dead, and things that have never been aliveIdentify and name a variety of plants and animals in their habitats, including micro-habitatsDescribe 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">Notice that animals, including humans, have offspring which grow into adults	<ul style="list-style-type: none">Explore and compare the differences between things that are living, dead, and things that have never been aliveIdentify 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 otherIdentify and name a variety of plants and animals in their habitats, including micro-habitatsDescribe 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">Observe and describe how seeds and bulbs grow into mature plantsFind out and describe how plants need water, light and a suitable temperature to grow and stay healthy
Working Scientifically					
<ul style="list-style-type: none">asking simple questions and recognising that they can be answered in different waysobserving closely, using simple equipmentperforming simple testsidentifying and classifyingusing their observations and ideas to suggest answers to questionsgathering and recording data to help in answering questions.					



Year 3					
Objectives					
Autumn 1 Scientific Enquiry	Autumn 2 Light	Spring 1 Forces and Magnets	Spring 2 Animals including humans	Summer 1 Plants	Summer 2 Rocks
Vocabulary					
investigation, prediction, plausible, record, data, method, control, equipment, enquiry, practical, conclusion, fair test	light reflect, vitamin D, ultraviolet rays, fluorescent, high visibility, shadow, ray, cast, position, shape, puppet	force, friction, motion, texture, magnet, attract, repel, magnetic field, non-contact force, magnetism, compass, orienteering	vitamin, mineral, nutrition label, balanced, endoskeleton, exoskeleton, radius, tibia, rib cage, spine, hamstrings, biceps	fertiliser, potassium, chlorophyll, photosynthesis, xylem, phloem, anther, filament, stoma, transpiration, pollen, nectar	igneous, intrusive igneous, magma, sedimentary, metamorphic, weathering, acid rain, erosion, fossil, decompose, fragments
Prior Learning					
<ul style="list-style-type: none"> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials) 	<ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 -Animals, including humans) Describe the simple physical properties of a variety of everyday materials. (Y2- Everyday Materials) 	<ul style="list-style-type: none"> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Everyday Materials) 	<ul style="list-style-type: none"> Notice that animals, including humans, have offspring, which grow into adults (Y2- Animals, including humans) <ul style="list-style-type: none"> Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) (Y2). <ul style="list-style-type: none"> Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene (Y2). 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) 	<ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow into mature plants (Y2- Plants). <ul style="list-style-type: none"> Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy (Y2). Identify and name a variety of plants and animals in their habitats, including microhabitats (Y2- Living things and their habitats) 	<ul style="list-style-type: none"> Explore and compare the differences between things that are living, dead, and things that have never been alive (Y2- Living things and their habitats) <ul style="list-style-type: none"> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (Y2- Everyday Materials)



Knowledge					
<ul style="list-style-type: none"> Skills of Working Scientifically (Science Disciplinary Knowledge) as below. 	<ul style="list-style-type: none"> 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. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an solid object. Find patterns in the way that the size of shadows change. 	<ul style="list-style-type: none"> Compare how things move on different surfaces. 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"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> compare and group together different kinds of rocks on the basis of their simple physical properties recognise that soils are made from rocks and organic matter describe in simple terms how fossils are formed when things that have lived are trapped within rock.
Working Scientifically (Science Disciplinary Knowledge)					
<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 using standard units, using a range of equipment, including thermometers and data loggers 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 on 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 improvement 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. 					



Year 4					
Objectives					
Autumn 1 States of Matter	Autumn 2 Animals, including humans	Spring 1 Sound	Spring 2 Living things and their habitats- Conservation	Summer 1 Living things and their habitats	Summer 2 Electricity
Vocabulary					
thermometer, melting point, freezing point, boiling point, solid, liquid, gas, evaporation, particles, condensation, water vapour, substance	digestive system, oesophagus, saliva, peristalsis, incisors, molars, enamel, fluoride, consumer, predator, tundra, hide	vibration, medium, source, energy, materials, reflect, volume, decibels, pitch, instruments, particles	migrate, monsoon, deforestation, biodiversity, emissions, pollution, pesticide, contaminate, drought, freshwater, marine sanctuaries, conservation	adapted, camouflage, coastal, grassland, classify, species, sub-group, classification key, region, blubber, ecosystem, oxygenised	electricity, batteries, circuit, voltage, current, bulb, conductor, insulator, switch, control, wind turbines, hydropower
Prior Learning					
<ul style="list-style-type: none"> Describe the simple physical properties of a variety of everyday materials (Y1 - Everyday Materials) Compare and group together a variety of everyday materials on the basis of their simple physical properties (Y1) 	<ul style="list-style-type: none"> 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) <ul style="list-style-type: none"> 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 (Y3 – Animals, including humans) Identify that humans and some other animals have skeletons and muscles for support, protection and movement (Y3) 	<ul style="list-style-type: none"> Describe the simple physical properties of a variety of everyday materials (Y1 - Everyday Materials) Compare and group together a variety of everyday materials on the basis of their simple physical properties (Y1) 	<ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals (Y1- Animals, including humans) <ul style="list-style-type: none"> 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 (Y2- Living things and their habitats) <ul style="list-style-type: none"> Identify and name a variety of plants and animals in their habitats, including microhabitats (Y2) Describe how animals obtain their food from plants and other animals, using the 	<ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals (Y1- Animals, including humans) <ul style="list-style-type: none"> 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 (Y2- Living things and their habitats) <ul style="list-style-type: none"> Identify and name a variety of plants and animals in their habitats, including microhabitats (Y2) Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and 	<ul style="list-style-type: none"> Describe the simple physical properties of a variety of everyday materials (Y1 - Everyday Materials) Compare and group together a variety of everyday materials on the basis of their simple physical properties (Y1)



			<i>idea of a simple food chain, and identify and name different sources of food (Y2)</i>	<i>identify and name different sources of food (Y2)</i>	
Knowledge					
<ul style="list-style-type: none"> To compare and group materials according to whether they are solid, liquid or gas To observe that some materials change state when they are heated or cooled To measure the temperature at which changes in state occur (in Celsius) To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 	<ul style="list-style-type: none"> To describe the simple functions of the basic parts of the digestive system in humans To identify the different types of teeth in humans and their functions To identify the differences between the teeth of carnivores and herbivores To construct and interpret a variety of food chains, identifying producers, predators and prey 	<ul style="list-style-type: none"> To identify how sounds are made, associating some of them with something vibrating To recognise that vibrations from sounds travel through a medium to the ear To find patterns between the pitch of a sound and features of the object that produced it To find patterns between the volume of a sound and the strength of the vibrations that produced it To recognise that sounds get fainter as the distance from the sound source increases 	<ul style="list-style-type: none"> To recognise that environment can change and that this can sometimes pose dangers to living things 	<ul style="list-style-type: none"> To recognise that living things can be grouped in a variety of ways To use classification keys to help group, identify and name a variety of living things in their local and wider environment. 	<ul style="list-style-type: none"> To identify common appliances that run on electricity To identify and name the basic parts of a simple series electrical circuit To construct a simple series electrical circuit To 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 To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit To recognise some common conductors, insulators, and to associate metals with being good conductors



Working Scientifically (Science Disciplinary Knowledge)

- 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 using standard units, using a range of equipment, including thermometers and data loggers
- 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 on 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 improvement 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.



Year 5					
Objectives					
Autumn 1 Earth and Space	Autumn 2 Properties of materials	Spring 1 Forces	Spring 2 Changes of materials	Summer 1 Animals, including humans	Summer 2 Living things and their Habitats
Vocabulary					
heliocentric, geocentric, solar system, astronomy, terrestrial planet, gas giant, axis, orbit, moon, phase, waxing waning	conductive, magnetic, thermal, conduction, hardness, force, dissolve, solute, solvent, substance, filtering, evaporation	gravity, Sir Isaac Newton, Galileo Galilei, parachute, air resistance, friction, water resistance, streamlined, buoyant, upthrust, Newton, lever, pulley	solute, solvent, reversible, evaporate, chemical change, effervescence, fair test, corrosion, combustion, extinguish, reaction, carbon dioxide	offspring, foetus, dependent, adolescent, puberty, gestation, pregnancy, toddler, prenatal, breeding, embryo, hormones	organism, naturalist, primatologist, metamorphosis, endangered, asexual, reproduction, fertilisation, placental mammal, monotreme
Prior Learning					
<ul style="list-style-type: none"> Observe and describe weather associated with the seasons and how day length varies (Y1- Seasonal Changes) Notice that light is reflected from surfaces (Y4- Light) Recognise that shadows are formed when the light from a light source is blocked by an opaque object (Y4) Compare and group materials together, according to whether they are solids, liquids or gases (Y4- States of matter) 	<ul style="list-style-type: none"> 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) Compare and group materials together, according to whether they are solids, liquids or gases (Y4- States of matter) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature (Y4). Recognise some common conductors and insulators, and associate metals 	<ul style="list-style-type: none"> Compare how things move on different surfaces (Y3- Forces) Notice that some forces need contact between two objects, but magnetic forces can act at a distance (Y3) 	<ul style="list-style-type: none"> Compare and group materials together, according to whether they are solids, liquids or gases (Y4- States of matter) 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 (Y4)) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature (Y4) Recognise some common conductors and 	<ul style="list-style-type: none"> Notice that animals, including humans, have offspring which grow into adults (Y2- Animals, including humans) Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Y2- Animals, including humans) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene (Y2) 	<ul style="list-style-type: none"> Notice that animals, including humans, have offspring which grow into adults (Y2- Animals, including humans) To recognise that environment can change and that this can sometimes pose dangers to living things (Y4- Living things and their habitats) To recognise that living things can be grouped in a variety of ways (Y4)



	<i>with being good conductor (Y4-Electricity)</i>		<i>insulators, and associate metals with being good conductor (Y4-Electricity)</i>		
Knowledge					
<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 and the apparent movement of the Sun across the sky.	<ul style="list-style-type: none">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.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">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, water resistance and friction that act between moving surfaces.Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	<ul style="list-style-type: none">Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.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.	<ul style="list-style-type: none">Describe the changes as humans develop to old age.	<ul style="list-style-type: none">To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.To describe the life process of reproduction in some plants and animals.
Working Scientifically (Science Disciplinary Knowledge)					
<ul style="list-style-type: none">Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessaryTaking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriateRecording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphsUsing test results to make predictions to set up further comparative and fair testsReporting and presenting 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 presentationsIdentifying scientific evidence that has been used to support or refute ideas or arguments					



Year 6					
Objectives					
Autumn 1 Electricity	Autumn 2 Scientific Enquiry - Looking after the Environment	Spring 1 Animals including humans	Spring 2 Evolution and inheritance	Summer 1 Living things and their habitats	Summer 2 Light
Vocabulary					
circuit, battery, electricity, resistor, variable resistor, dimmer switch, output, systematically, synchronised, signal, conductor, insulator	weather, global warming, recycle, biodegradable, net zero, greenhouse gases, industrial revolution, combustion, COP, conference, species, habitat	circulatory system, BPM, diet, pulse, oxygenated, deoxygenated, atrium, ventricle, vessel, valve, diffusion, osmosis	inherit, adaptation, epiphytes, fossil, Mary Anning, palaeontologist, ichthyosaurus, Charles Darwin, evolved, natural selection, ancestor, Homo sapiens	classification, microorganism, habitat, living organism, species, microscopic, ecosystem, kingdom, Linnaean system, cell	light, source, reflected, variable, angle, mirror, opaque, transparent, sunshade, rotate, optical, spectrum
Prior Learning					
<ul style="list-style-type: none"> Identify common appliances that run on electricity. (Y4 – Electricity) Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers (Y4) 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 (Y4) Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. (Y4) 	<ul style="list-style-type: none"> To recognise that environments can change and that this can sometimes pose dangers to living things (Y4- Living things and their habitats) Skills of Working Scientifically (Science Disciplinary Knowledge) (Y3- Scientific Enquiry) 	<ul style="list-style-type: none"> Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene (Y2- Animals, including humans) 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 (Y3 Animals, including humans) 	<ul style="list-style-type: none"> Describe in simple terms how fossils are formed when things that have lived are trapped within rock (Y3- Rocks) 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) 	<ul style="list-style-type: none"> 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) Recognise that environments can change and that this can sometime pose dangers to living things (Y4) Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird (Y5- Living things and their habitats) 	<ul style="list-style-type: none"> Recognise that they need light in order to see things and that dark is the absence of light (Y3- Light) Notice that light is reflected from surfaces (Y3) Recognise that shadows are formed when the light from a light source is blocked by an opaque object (Y3) 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. (Y5 - Properties and changes of materials)



<ul style="list-style-type: none">• Recognise some common conductors and insulators, and associate metals with being good conductors. (Y4)				<ul style="list-style-type: none">• Describe the life process of reproduction in some plants and animals (Y5)	
Knowledge					
<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.• 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.	<ul style="list-style-type: none">• Nature, the causes and impacts of climate change, and the importance of sustainability (DfE policy paper 'Sustainability and climate change: a strategy for the education and children's services systems')	<ul style="list-style-type: none">• 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.	<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 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.	<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.	<ul style="list-style-type: none">• Recognise 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 and then to our eyes.• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Working Scientifically (Science Disciplinary Knowledge)					
<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, taking repeat readings when appropriate• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs• Using test results to make predictions to set up further comparative and fair tests• Reporting and presenting 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• Identifying scientific evidence that has been used to support or refute ideas or arguments					