Science - Curriculum Overview

Year	Subject specific Vocabulary	'The Greats'	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	Autumn tree leaves acorn conker squirrel hedgehog season winter snow Ice freezing frost melt ice spring bulbs seeds daffodils bean roots leaves flower Summer magnetic non-magnetic float sink healthy unhealthy grow	**N/A**	**Understanding the world** - The Natural World • Use all their senses in hands-on exploration of natural materials • Explore collections of materials with similar and/or different properties • Talk about what they see, using a wide vocabulary. • Explore how things work • Plant seeds and care for growing plants • Understand the key features of the life cycle of a plant and an animal • Begin to understand the need to respect and care for the natural environment and all living things • Explore and talk about different forces they can feel • Talk about the differences between materials and changes they notice **PSED** - Managing self • Make healthy choices about food, drink, activity and tooth brushing					

Reception	**<u>Working Scientifically</u>** Questions Answers Equipment Measure Results Sort Group Test Describe Similar/similarities Different/differences **<u>Living Things (Animals)</u>**: Names of common animals in different regions e.g. polar bears Names of common pets e.g. dog Fur Tail Paws Beak Fin Life cycle Egg Hatch Embryo Habitat **<u>Living Things (Plants & Growing):</u>** Leaf Leaves Seed Roots Plant Petal Stem Sun Water Tree Names of locally found plants e.g. dandelion **<u>The Natural World:</u>** Spring Summer Autumn Winter Seasons Changes Cold Warm Weather Rain Sun Wind Snow Fog		**<u>Understanding the world</u>** – <u>The Natural World</u> • Explore the natural world around them • Describe what they see, hear and feel whilst outside • Recognise some environments that are different to the one in which they live • Understand the effect of changing seasons on the natural world around them **<u>PSED</u>** – <u>Managing self</u> • Know and talk about the different factors that support their overall health and wellbeing: regular physical activity, healthy eating, tooth brushing, sensible amounts of 'screen time', having a good sleep routine, being a safe pedestrian	**<u>PSED</u>** – <u>Managing self (ELG)</u> / **<u>PD</u>** – <u>Health (ELG)</u> • Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices **<u>Understanding the world</u>** <u>(ELG) - The Natural World</u> • 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.

National Curriculum Objectives	Key Stage 1 Year 1 Plants Pupils should be taught to: ♣ 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 Animals, including humans Pupils should be taught to: ♣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 Everyday materials Pupils should be taught to: ♣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 Seasonal changes Pupils should be taught to: ♣observe changes across the 4 seasons ♣observe and describe weather associated with the seasons and how day length varies **Year 2** Living things and their habitats Pupils should be taught to: ♣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 microhabitats ♣describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food **Plants** Pupils should be taught to:

	♣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 **Animals, including humans** Pupils should be taught to: ♣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 **Uses of everyday materials** Pupils should be taught to: ♣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 **Year 3** **Plants** Pupils should be taught to: ♣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 **Animals, including humans** Pupils should be taught to: ♣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 **Rocks** Pupils should be taught to: ♣compare and group together different kinds of rocks on the basis of their appearance and simple physical properties ♣describe in simple terms how fossils are formed when things that have lived are trapped within rock ♣recognise that soils are made from rocks and organic matter **Light** Pupils should be taught to: ♣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 opaque object ♣find patterns in the way that the size of shadows change **Forces and magnets** ♣compare how things move on different surfaces ♣notice that some forces need contact between 2 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 2 poles ♣predict whether 2 magnets will attract or repel each other, depending on which poles are facing **Year 4** **Living things and their habitats** Pupils should be taught to: ♣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 **Animals, including humans** Pupils should be taught to: ♣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 **States of matter** Pupils should be taught to: ♣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 **Sound** Pupils should be taught to: ♣identify how sounds are made, associating some of them with something vibrating ♣recognise that vibrations from sounds travel through a medium to the ear ♣find patterns between the pitch of a sound and features of the object that produced it ♣find patterns between the volume of a sound and the strength of the vibrations that produced it ♣recognise that sounds get fainter as the distance from the sound source increases

Electricity
Pupils should be taught to:

♣identify common appliances that run on electricity
♣construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
♣identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
♣recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
♣recognise some common conductors and insulators, and associate metals with being good conductors

Year 5
Living things and their habitats
Pupils should be taught to:

♣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

Animals, including humans
Pupils should be taught to:

♣describe the changes as humans develop to old age

Properties and changes of materials
Pupils should be taught to:

♣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

Earth and space
Pupils should be taught to:

♣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

Forces
Pupils should be taught to:

♣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

Year 6
Living things and their habitats
Pupils should be taught to:

♣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

Animals including humans
Pupils should be taught to:

♣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

Evolution and inheritance
Pupils should be taught to:

♣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

Light
Pupils should be taught to:

♣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

Electricity
Pupils should be taught to:

♣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					
Year 1	**<u>Animals Including Humans</u>** Alive Animal Different Human Living Non-living Plant Physical Feature Similar **<u>Changing seasons</u>** Autumn Winter Summer Spring Season Weather Observe Record Explore **<u>Everyday Materials</u>** Dark Glass Light Material Mirror Pane Reflect Reflection Shiny, Smooth **<u>Plants</u>**	Charles Darwin Albert Einstein	**<u>Animals Including Humans</u>** - To identify, name, draw & label the basic parts of the human body in the context of drawing & labelling a diagram of the body - To say which part of the body is associated with each sense in the context of drawing activities that use the sensory organs. - To perform simple tests in the context of investigating each of the five senses. - To gather & record data to help in answering questions in the context of collecting information to solve a puzzle. - To identify & name a variety of common animals including, fish, amphibians, reptiles, birds and mammals in the	**<u>Changing seasons</u>** -To observe changes across the 4 seasons in the context of the weather. -To observe and describe how day length varies by exploring the average number of hours of day light in autumn. -To observe and describe weather associated with the seasons by observing the weather in autumn/winter. -To gather and record data to help in answering questions by recording the weather, temperature, rainfall and wind	**<u>Everyday Materials</u>** -To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock by matching a material to its name. -To distinguish between an object and the material from which it is made by naming objects and identifying the material which they are made from. -To distinguish between an object and the material from which it is made by looking and touching different materials. -To describe the simple physical properties of a variety of everyday materials by testing different objects. -To observe closely by watching what happens to teddy. -To perform simple tests to find out which material would be suitable to make an umbrella from. -To use their observations and ideas to suggest answers to questions by deciding which materials would be suitable to make an umbrella from. -To compare and group together a variety of everyday materials on the basis of their simple physical properties by sorting objects.	**<u>Plants</u>** To identify and describe the basic structure of a variety of common flowering plants by planting a bean. - To ask simple questions and recognise that they can be answered in different ways in the context of considering what plants need to grow. - To identify and name a variety of common wild plants by going on a wild plant hunt. - To identify and name a variety of common garden plants in the context of drawing a garden featuring common garden plants. - To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees by identifying trees from their leaves. - To identify and classify by classifying leaves as deciduous or evergreen. - To identify and describe the basic structure of a variety of common flowering plants, including trees by making and labelling plant pictures. - To observe closely, using simple equipment in the context of observing the growth of bean plants. - To use their observations and ideas to suggest answers to questions by answering questions about what plants need to grow.

	Plant Common Wild Garden Plant Identify Classify		context of naming animals. - Asking simple questions & recognising that they can be answered in different ways in the context of generating criteria for sorting animals. - To describe & compare the structure of a variety of common animals (fish, amphibians, reptiles, birds & mammals including pets in the context of describing pictures of common animals. -To identify & name a variety of common animals that are carnivores, herbivores and omnivores in the context of recognising if animals are carnivores, herbivores or omnivores. - To identify and classify in the context of sorting animals into categories.	direction in autumn/winter -To observe changes across the 4 seasons by going on an Autumn/winter walk. -To observe and describe how day length varies in the context of autumn to winter. -To observe changes across the 4 seasons by looking at how trees and the clothes that we wear change from autumn to winter.		

Year 2	**<u>Animals including Humans</u>** Adult Baby Offspring Pregnancy Hatchling Mammal Amphibian Reptile Spawn Healthy Muscle Vitamin Mineral Hygiene Bacteria **<u>Everyday Materials</u>** Wood Metal Plastic Glass Brick Rock Paper Cardboard Gather Record Explore Squashing Bending Twisting, Stretching Solid **<u>Plants</u>** Plants Observe Seeds Bulbs Germinate Grow	Jane Goodall Steve Irwin	**<u>Animals including Humans</u>** -To notice that animals, including humans, have offspring which grow into adults, by describing the changes to animals as they grow. -To identify and classify, by matching animals and animal babies. -To notice that animals, including humans, have offspring which grow into adults, by learning about how humans grow and change. -To perform simple tests, by testing if children get faster as they get older. -To find out about and describe the basic needs of animals, including humans, for survival (water, food and air), by identifying the ways that different animals meet their basic needs. -To ask simple questions and recognise that they can be answered in different ways, by generating questions about a pet and researching answers. -To describe the importance for humans of eating the right amounts of different types of food, by exploring food groups. -Using their observations and ideas to suggest answers to questions, by suggesting improvements to their diet and designing their own healthy meals. -To describe the importance for humans of exercise, by finding out why humans need to exercise. -To gather and record data to help in answering questions, by recording the ways that exercise affects the body.	**<u>Uses of Everyday Materials</u>** -To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses, by identifying the uses of different materials. -To identify and classify the uses of everyday materials, in the context of the local area. -To gather and record data to help in answering questions, by exploring the purposes of different objects. -To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses, by exploring the purposes of different objects. -To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching, by changing the shape of objects. -To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching, in the context of recycling. -To find out about people who have developed new materials, by learning about John McAdam.	**<u>Plants</u>** -To observe closely using simple equipment by recording observations of a variety of plants in the local environment. -To observe and describe how seeds and bulbs grow into mature plants by planting seeds and bulbs. -To perform simple tests by setting up a comparative test to understand what plants need to germinate and grow. -To observe and describe how seeds and bulbs grow into mature plants by understanding the life cycle of plants. To use their observations and ideas to suggest answers to questions by giving ways we can tell that plants are living things. - To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy by comparing the growth of seedlings under different conditions.	**<u>Living things and their habitats.</u>** -To explore & compare the differences between things that are living, dead, & things that have never been alive by thinking about life processes. -To use their observations & ideas to suggest answers to questions by explaining how they know something is living, dead or has never been alive. -To identify & name a variety of plants & animals in their habitats, by mapping a habitat & identifying its inhabitants. - To identify, classify & sort objects into categories by sorting objects that are living, dead & have never been alive. - To identify & name a variety of plants and animals in their habitats, including microhabitats by identifying minibeasts in microhabitats. - To gather and record data to help in answering questions by investigating the preferred habitat of minibeasts. - To identify that most living things live in habitats to which

	Life Cycle Mature Seedlings, Environment Deciduous **<u>Living things and their habitats.</u>** Habitats Life Processes Inhabitants, Classify Sort Microhabitats Minibeast		-To describe the importance for humans of hygiene, by learning about good hygiene habits. -To observe closely, using simple equipment, by using hand lenses to observe their hands and drawing what they see.		- To gather and record data to help in answering questions by measuring the results of a comparative test. - To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy by explaining what conditions plants need to grow well. - To use observations and ideas to suggest answers to questions by using the results of tests to suggest good conditions for growing plants for food. - To observe and describe how seeds and bulbs grow into mature plants by comparing the growth of seeds and bulbs. - To observe closely using simple equipment by measuring and recording the growth of seeds and bulbs.	they are suited and describe how different habitats provide for the basic needs of different kinds of animals & plants, by researching habitats & animals that live in them. - To ask simple questions and recognise that they can be answered in different ways by asking and answering questions about a range of different habitats. - To identify that most living things live in habitats to which they are suited & describe how different habitats provide for the basic needs of different kinds of animals & plants, & how they depend on each other by considering the adaptations of animals, & how living things in a habitat depend on each other. - Describe how animals obtain their food from plants & other animals, using the idea of a simple food chain, and identify & name different sources of food by making a variety of food chains.

Year 3	**Animals including humans** Nutrition Nutrient Diet Skeleton Muscles **Forces and Magnets** Force Surface Magnetic force Attract Repel pole **Light** Reflection Light source Surface Shadow **Plants** Function Root Stem Enquiry Transported Life cycle Pollination Seed formation Seed dispersal Seed pollination Fertilisation **Rocks** Mary Anning Jurassic Coast Extinct Ichthyosaur Science	**Mary Anning** **Marie Curie**	**Animals including humans** -Identify that they cannot make their own food; they get nutrition from what they eat by comparing how plants and humans obtain food. -Identify that animals, including humans, need the right types of nutrition by examining food groups and nutrient groups. - Identify that animals, including humans, need the right amount of nutrition in the context of identifying differences and similarities related to simple scientific processes by grouping animals according to their diets. - Identify that humans and some other animals have skeletons by investigating skeleton types. - Identify that humans and some other animals have skeletons by identifying the parts of the skeleton. - Identify that humans and some other animals have skeletons for support, protection and movement, by focusing on skeleton types. - Identify that humans and some other animals have muscles for movement by examining how muscles work. -Setting up simple practical enquiries in the context of investigating pairs of muscles. -Recording findings using simple scientific language by writing the results of the practical investigation.	**Forces and Magnets** -To notice that some forces need contact between two objects by identifying the different types of forces acting on objects. -To compare how things move on different surfaces by investigating the speed of a toy car over different surfaces. -To notice that magnetic forces can act at a distance and attract some materials and not others by sorting materials. To compare and group materials according to whether they are magnetic by sorting materials. -To observe how magnets attract or repel each other and attract some materials and not others by investigating the strength of different magnets. -To describe magnets as having two poles and to predict whether two magnets will attract or repel each other,	**Light** -To recognise that we need light in order to see things and that dark is the absence of light by taking part in a 'feely bag' investigation. -To notice that light is reflected from surfaces by choosing the most reflective material for a new book bag. -To notice that light is reflected from surfaces by playing mirror games. -To recognise that light from the sun can be dangerous and that there are ways to protect our eyes by designing and advertising a pair of sunglasses or a sun hat. -To recognise that shadows are formed when the light from a light source is blocked by a solid object by investigating the best material	**Plants** -To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers by labelling the parts of a plant. -To explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) by investigating what plants need to grow well. -To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables by observing and recording plant growth. -To report on findings from enquiries, including oral and written explanations and presentations of results and conclusions by presenting findings to the class. -To investigate the way in which water is transported within plants by observing the transport of food colouring through a flower stem.	**Rocks** -Compare different kinds of rocks based on their appearance in the context of understanding the difference between natural and human-made rocks. -Making systematic and careful observations by examining different types of rocks. -Group together different kinds of rocks on the basis of their simple physical properties in the context of natural rocks. -Describe in simple terms how fossils are formed when things that have lived are trapped within rock by explaining the fossilisation process and by comparing fossils to the animals they belong to. -Identifying changes related to simple scientific ideas in the context of theories about fossils. (Mary Anning) -Recognise that soils are made from rocks and organic matter by explaining how soil is formed.

	Dinosaur Prehistoric Extinct Skeleton Fossil Pterosaur, Lyme Regis				depending on which poles are facing by making a compass to hunt for treasure. -To observe how magnets attract or repel each other and attract some materials and not others by making, playing and evaluating a magnetic game.	for curtains for a baby's bedroom. -To find patterns in the way that the size of shadows change by investigating what happens when you change the distance between the object and the light source.	-To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal by understanding pollination and fertilisation. -To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal by ordering and describing the stages of the life cycle of a flowering plant.	
Year 4	**<u>Animals including Humans</u>** Digestive system Enquiry Tooth decay Producers Predators Prey **<u>Electricity</u>** Generated Appliance Circuit Cell/s Wires Bulbs Switches Buzzers Loop	**David Attenborough** **Rosalind Franklin**	**<u>Animals including Humans</u>** -To describe the simple functions of the basic parts of the digestive system in humans in the context of identifying the parts of the digestive system. - To describe the simple functions of the basic parts of the digestive system in humans by explaining the functions of the different parts of	**<u>Electricity</u>** -To report on findings, including oral and written explanations in the context of preparing a presentation on how electricity is generated. -Identify common appliances that run on electricity by learning	**<u>States of Matter</u>** -To compare and group materials together, according to whether they are solids, liquids or gases by sorting and describing materials into solids, liquids and gases. -To compare and group materials together, according to whether they are solids, liquids or gases by investigating gases and their uses.	**<u>Sound</u>** -To identify how sounds are made, associating some of the with something vibrating, by identifying and explaining sound sources around school. -To identify how sounds are made, associating some of them with something vibrating, by performing a dramatized of	**<u>Living things and their habitats</u>** -To recognise that living things can be grouped in a variety of ways by sorting living things into a range of groups. -Gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions by using a range of methods to sort and group living things. - To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment by generating questions to sort vertebrates in classification key. -Identifying differences, similarities or changes related to simple scientific ideas and processes by identifying vertebrates by their similarities and differences. -To explore and use classification keys to help group, identify and name a variety of living things	

	Battery Conductor **<u>States of Matter</u>** Gas Liquid Solid Materials Temperature Celsius Sorting Describing Compare Group Investigating systematic **<u>Sound</u>** Vibrating Source Medium Pattern Pitch Fainter Absorbing Performance **<u>Living things and their habitats</u>** Vertebrates Similarities Differences Endangered Species Grouping Recording Classifying Gathering Presenting Classification		the digestive system. -To use straightforward scientific evidence to answer questions by reading an explanation text and answering questions. -To identify the different types of teeth in humans and their simple functions by learning about different types of teeth. -To identify differences, similarities or changes related to simple scientific ideas and processes by comparing human and animal teeth. -To ask relevant questions and use different types of scientific enquiries to answer them by distinguishing between scientific and non-scientific questions and choosing between types of scientific enquiry.	to distinguish between appliances that use and do not use electricity, the different types of electricity and identify how to stay safe when using electricity. -Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit,	-To observe that some materials change state when they are heated, cooled, and measure or research the temperature at which this happens in degrees Celsius by investigating how heating and cooling can change a material's state. -To observe that some materials change state when they are heated, cooled, and measure or research the temperature at which this happens in degrees Celsius by exploring how water can change its state to a solid, liquid or gas -To associate the rate of evaporation with temperature by investigating the effect of temperature on drying washing. -To make systematic, careful and accurate observations and measurements and report on finding from enquiries by displaying results and conclusions by investigate the	how sounds travel. -To find patterns between the volume of a sound and the strength of the vibration that produced it, by performing a dramatisation of how sound travels. -To recognise that vibrations from sounds travel through a medium to the ear, by exploring how high and low sounds are created. -To find patterns between the pitch of a sound and features of the object that produced it, by exploring and creating musical instruments and explaining how they change pitch. - To recognise that sound get fainter as the distance from the sound source increases, by exploring how sounds change over distance.	in their local and wider environment by creating classification keys. -Gathering recording, classifying and presenting data in a variety of ways to help in answering questions by creating tables and keys showing the characteristics of living things. -To recognise that environments can change and that this can sometimes pose danger to living things by identifying changes and dangers in the local habitat. -Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and table by recording observations on a map and in a table. -To recognise that environments can change and that this can sometimes pose dangers to living things by learning about environmental dangers and endangered species. -Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions by writing about and orally presenting findings from research.

			-To set up simple practical enquiries, comparative and fair tests by setting up an enquiry or test to understand what causes tooth decay. -To make systematic and careful observations by observing the changes that occur in their enquiry or test. -To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions by presenting findings, making predictions and raising questions about results. -To construct and interpret a variety of food chains, identifying producers, predators and prey by understanding food chains and the role of different plants and animals within them.	based on whether or not the lamp is part of a complete loop with a battery by visualising and testing circuits to see if the circuit is complete. -Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. -Recognise some common	effect of temperature on drying washing. - To identify the part played by evaporation and condensation in the water cycle by creating a model of the water cycle.	-To recognise that vibrations from sounds travel through a medium to the ear, by making string telephones. -To recognise that vibrations from sounds travel through a medium to the ear, by investigating the best material for absorbing sound. - To recognise that vibrations from sounds travel through a medium to the ear by making a musical instrument and explaining how it works. -To find patterns between the pitch of a sound and features of the object that produced it, by making a musical instrument and explaining how it works.	

				conductors and insulators, and associate metals with being good conductors by testing different materials as part of a circuit to see whether or not they conduct electricity. -Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit by creating circuits which contain a switch. -Construct a simple series electrical			

				circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. 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 in the context of making and investigating different switches.			

Year 5	**Animals including Humans** Describe Stages Development Bar Graph Line Graph Puberty Gestations Period Life Expectancy **Forces** Gravity Force Resistance Friction Mechanism **Properties and changes of materials** Hardness Transparency Magnet Sorting Classifying Comparative Fair test Thermal conductors Insulators Conductivity Dissolve Solution Solubility Separated Filtering Sieving Evaporating Reversible Irreversible **Earth and Space** Constellation	Carl Linnaeus Jane Goodall	**Animals including Humans** -Describe the changes as humans develop to old age by drawing a timeline to indicate stages in the growth and development of humans. -Describe the changes as humans to develop to old age in the context of the development of babies in their first year. -Record data and results of increasing complexity using bar and line graphs in the context of the growth of babies in height and/or weight during their first year after birth. -Describe the changes as humans develop to old age by comparing the changes that take place to boys and girls during puberty. -Describe the changes as humans develop to old age by understanding the changes that	**Forces** -To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object by identifying forces acting on objects. -To identify the effects of air resistance, water resistance and friction by identifying forces acting on objects. -To explain that unsupported objects falling towards the Earth because of the force of gravity acting between the Earth and the falling object by measuring the force of gravity pulling on objects.	**Properties and changes of materials** -To compare and group together everyday materials on the basis of their properties, including their hardness, transparency and response to magnets by sorting and classifying materials to their properties. -To give reasons, based on evidence from comparative and fair tests for the particular uses of everyday materials, including metals, wood and plastic by investigating thermal conductors and insulators. -To compare and group together everyday materials on the basis of their thermal conductivity by investigating thermal conductors and insulator. -To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic by investigating the	**Earth and space** -Describing the Sun, Earth and Moon as approximately spherical bodies by understanding how this knowledge has been attained. -Identifying scientific evidence that has been used to support or refute ideas or arguments in the context of how ideas changed from a flat earth view. -Describing the movement of the Earth, and other planets, relative to the Sun in the solar system by learning the order of the plants and how they move in the solar system. -Describe the movement of the Earth, and the planets, relative to the Sun in the solar system by examining the geocentric and heliocentric theories.	**Living things and their habitats** -To describe the life process of reproduction in some plants and animals exploring sexual reproduction in plants. -To describe the life cycle of a mammal by exploring the life cycles of mammals in different habitats. -To describe the life process of reproduction in some plants and animals by describing sexual reproduction in mammals. -To describe the life process of reproduction in some plants and animals by exploring Jane Goodall's work with chimpanzees. -To describe the differences in the life cycles of an amphibian and an insect by exploring complete and incomplete metamorphosis. -To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird by describing and comparing different life cycles, including birds.

	Eclipse Orbit Solar System Galaxy Spherical Geocentric Heliocentric **<u>Living things and their habitats</u>** Sexual reproduction Mammal Habitat Amphibian Metamorphosis. Life cycles		take place in old age. -Report findings from enquiries, including oral and written explanations of results in the context of the gestation period for animals. -Record data and results of increasing complexity using bar and line graphs, and models in the context of comparing gestation periods and life expectancies of animals. -Reporting and presenting findings from enquiries, including casual relationships by analyzing data on gestation periods and life expectancies of animals.	-To identify the effects of air resistance by investigating the best parachute to slow a person down. -To identify the effects of water resistance by creating and racing streamlined boats. -To identify the effects of friction by investigating brakes. -To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect by exploring and designing a simple mechanism.	best electrical conductors. -To know that some materials will dissolve in liquid to form a solution by investigating dissolving. -To compare and group together every day materials on the basis of their solubility by investigating dissolving. -To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating by separating different mixtures. -To demonstrate that dissolving, mixing and changes by separating different mixtures. -To describe how to recover a substance from a solution by separating different mixtures. -To explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including	-Identifying scientific evidence that has been used to support or refute ideas or arguments in the context of the shift from heliocentric models of the solar system to geocentric models. -Using the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky by examining why the sun appears to move and the arguments for the Earth's rotation. -Identifying scientific evidence that has been used to support or refute ideas or arguments in the context of the evidence for the Earth's rotation. -Using the idea of the Earth's rotation to	

					changes associated with burning and the action of acid on bicarbonate of soda by identifying and observing irreversible chemical changes.	explain day and night and the apparent movement of the Sun across the sky by predicting night and day in different places on Earth. -Reporting and presenting findings from enquiries, including conclusions, in oral and written forms such as displays and other presentations in the context of investigating night and day.		
Year 6	**<u>Animals including Humans</u>** Circulatory system Blood vessels Lifestyle Variables Repeat Enquiry Pulse Variable Drugs Smoking alcohol **<u>Electricity</u>** Electricity Circuit Symbol Volt	**Charles Darwin** **Stephen Hawking**	**<u>Animals including Humans</u>** -To identify and name the main parts of the human circulatory system by recalling prior knowledge of systems in the human body and labelling a diagram. - To describe the functions of the heart, blood vessels and blood by investigating how the different parts of the	**<u>Electricity</u>** -Identifying scientific evidence that has been used to support or refute ideas or arguments in the context of the major discoveries made by scientists in the field of electricity. -Use recognised symbols when representing a	**<u>Light</u>** - To recognise that light appears to travel in straight lines by creating a model of light travelling. -To 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 by creating a model of light travelling. -To 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 by creating a light documentary. -To recognise that light appears to travel in straight lines by investigating the angles of incidence and reflection.		**<u>Evolution and Inheritance</u>** -Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents in the context of inheritance. -Identify how animals and plants are adapted to suit their environment in different ways in the context of environmental variation.	**<u>Living things and their habitats</u>** -To give reasons for classifying plants and animals based on specific characteristics in the context of sorting and grouping animals for a zoo. -To 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

	Buzzer Component **Light** Reflect Sources Incidence Reflection Periscope **Evolution and Inheritance** Offspring Identical Inheritance Adapted Evolution Darwin Wallace Fossils Inhabit **Living things and their habitats** Microorganisms Linnaean System Mammal Reptile Amphibians Arachnids Annelids Crustaceans Echinoderms Molluscs		circulatory system work. - To recognise the impact of diet and exercise on the way their bodies function by describing the effects of a healthy lifestyle. - To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurement with increasing accuracy and precision, taking repeat readings when appropriate by creating an enquiry that compares and categorises different forms of exercise and by taking accurate pulse measurements to gather data. - To record data and results of increasing complexity using classification keys, tables, scatter graphs, bar and line graphs.	simple circuit in a diagram by observing and explaining the effect of different volts in a circuit. -Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit by observing and explaining the effect of different volts in a 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. -Recording data and results of increasing complexity using scientific diagrams and	-To 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 by creating a periscope and explaining how it works. -To 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 by creating a periscope and explaining how it works.	- Identifying scientific evidence that has been used to support or refute ideas or arguments; Identify how adaptation may lead to evolution by examining the theories of evolution constructed by Darwin and Wallace. -Identifying scientific evidence that has been used to support or refute ideas or arguments; Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago in the context of the evolution of plants and animals. -Identifying scientific evidence that has been used to support or refute ideas or arguments; Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago in the context of the evolution of human beings.	animals by finding out about the Linnaean System of classification. -To 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 by identifying the characteristics of mammals, birds, insects, reptiles, amphibians, fish, arachnids, annelids crustaceans, echinoderms and molluscs. -To give reasons for classifying plants and animals based on specific characteristics by exploring unusual creatures and designing their own curious creature. -To describe how living things are classified into broad groups according to common observable characteristics based on similarities and differences, including micro-organisms, plants and animals by exploring helpful and

			-To report findings from enquiries, including conclusions and degree of trust in results, in written forms by reporting and presenting the findings of their enquiry. - To recognise the impact of drugs on the way their bodies function in the context of drugs and alcohol. - To identify scientific evidence that has been used to support or refute ideas or arguments in the context of changing attitudes to smoking.	labels, classification keys, tables, scatter graphs. Bar and line graphs. -Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations by conducting an investigation, presenting and report findings on the effect of wire length on the brightness of bulbs or the loudness of buzzers. -Compare and give reasons for variations in how components		-Identify how adaptation may lead to evolution by examining the advantages and disadvantages of specific adaptations and the role of human intervention in the process of evolution.	harmful micro-organisms. -To 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 by grouping organisms found in local habitat. -To give reasons for classifying plants and animals based on specific characteristics by creating a field guide to the organisms found in the local habitat.

				function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. - Using test results to make predictions to set up further comparative and fair tests by planning and conducting a further investigation.			