Curriculum Overview **Years F2-6** **Subject: Science 2023-2024**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
			FS2			
Unit title/strand	**The Natural World**	**Creating with materials**	**Physical development**	**Speaking**	**The Natural World**	**The Natural World**
Knowledge and Skills (to happen continuously through the year via Adult led and child-initiated opportunities)	Explore the natural world around them, making observations and drawing pictures of animals and plants; -	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function; - Share their creations, explaining the process they have used; - Make use of props and materials when role playing characters in narratives and stories.	Negotiate space and obstacles safely, with consideration for themselves and others; - Demonstrate strength, balance and coordination when playing; - Move energetically, such as running, jumping, dancing, hopping, skipping and climbing.	Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary; - Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate; - Express their ideas and feelings about their experiences using full sentences, including use of past, present, and future tenses and making use of conjunctions, with modelling and support from their teacher.	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.
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Forest Taught within the children's mainstream class.						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
			Year 1			
History/ Geography unit	**Growing up then and now**	**Out and About**	**Queens of the Ages**	**Great Britain**	**Full Steam Ahead**	**I do love to be beside the seaside**
Unit title/strand	**Everyday materials**	**Seasonal changes – revisited termly**	**Animals including humans**		**Plants**	

Assessment sheet	SA1	SA2	SA3	SA4
Scientist study	**Chester Greenwood-Earmuffs**	**Holly Green-Meteorologist**	**Chris Packham-Animal Conservationist Local environment**	**Beatrix Potter-Author & Botanist**
Knowledge	To know the difference between an object and the material from which it is made To be able to name a variety of everyday materials To know the simple physical properties of a variety of everyday materials To be able to compare and group together a variety of everyday materials	To be able to observe changes across the four seasons To be able to make links and describe weather associated with the seasons and how day length varies.	To be able to identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals To be able to understand the language of carnivores, herbivores and omnivores To be able to describe and compare the structure of a variety of common animals. To be able to identify parts of the human body and make links to senses.	To be able to identify and name a variety of common wild and garden plants, including trees To be able to identify and describe the basic structure of common flowering plants, including trees.
Skills	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	Describe weather associated with the seasons and how day length varies Observe changes across the four seasons Observe weather associated with the seasons and how day length varies	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 Identify and name, the basic parts of the human body and say which part of the body is associated with each sense. Describe the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Draw and label the basic parts of the human body and say which part of the body is associated with each sense Investigate and group animals according to what they eat	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify the basic structure of a variety of common flowering plants, including trees. Describe the basic structure of a variety of common flowering plants, including trees. Observe the growth of flowers and vegetables they have planted Compare and contrast familiar plants Investigate how plants have changed over time

	Investigate what is the best material for a particular purpose e.g. waterproof coat					
Key Vocabulary	*Sink, float, smooth, bumpy, stretch, shiny, dull, stiff* *Plastic, glass, wood, metal, fabric, waterproof, absorbent, opaque, transparent*	*Autumn, Summer, Spring, Winter, day, night, evening, afternoon, morning, noon, midnight*	*Mammals, amphibians, reptiles, birds, fish, carnivores, herbivores, omnivores, shoulder, ear (hear), eyes (sight), lips, mouth, tongue (taste), nose (smell), heart, skin (touch/ feel), hands, finger, bones, toes, lips, back., leg, hair, foot, arm*		*deciduous, evergreen, branches, trunk, root, leaf, blossom, bulb, seed, bud, flower, stem*	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 2						
History/ Geography unit	**London's Burning!**	**Where are we?**	**Infinity and Beyond**	**The Big Wide World**	**How we travel**	**Fieldwork!**
Unit title/strand	**Uses of everyday materials**	**Animals including humans**		Plants	**Living things and their habitats**	
Assessment sheet	**SA1**	**SA2**		SA4	**SA3**	
Scientist study	**Charles Mackintosh- Waterproof coat**	**Florence Nightingale- Pioneer of modern nursing in GB**		**Agnes Arber – botanist**	**Rachel Carson- Marine Pollution**	
Knowledge	To be able to identify and compare the suitability of a variety of everyday materials, for particular uses.	To be able to notice that animals, including humans, have offspring which grow into adults To be able to research and describe the basic needs of animals, including humans, for survival (water, food, air) To be able to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.		To be able to observe and describe how seeds and bulbs grow into mature plants. To be able to investigate how plants need water, light and a suitable temperature to grow and stay healthy	To be able to explore and compare the differences between things that are living, dead, and things that have never been alive To be able to identify that most living things live in habitats to which they are suited To be able to understand how animals and their habitats depend on each other To be able to identify and name a variety of plants and animals in their habitats	
Skills	Find out how the shapes of solid objects made from some materials can by changed by squashing, bending, twisting and stretching	Identify the basic needs of animals, including humans, for survival Describe the basic needs of animals, including humans, for survival		Identify suitable temperatures for plants to grow and stay healthy. Describe how seeds and bulbs grow into mature plants.	Identify that most living things live in habitats to which they are suited Identify a variety of plants and animals in their habitats Describe the conditions in different habitats and micro-habitats and how the plants and animals are affected	

	Observe and classify different materials based on their uses Compare the suitability of a variety of everyday materials, for particular uses. Compare everyday items found in and around school and at home Investigate the suitability of a variety of everyday materials, for particular uses.	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Describe how animals obtain their food from plants and other animals, using a simple food chain Research and describe the basic needs of animals, including humans, for survival Notice that animals, including humans, have offspring which grow into adults Label different types of food Investigate the process of reproduction and growth in animals		Observe how seeds and bulbs grow into mature plants over time. Compare different plants to show the need for water and light and what happens when these are withdrawn Investigate how plants need water, oxygen and warmth Predict suitable temperatures for plants to grow and stay healthy.	Research how animals and their habitats depend on each other Compare the differences between things that are living, dead, and things that have never been alive Compare animals in familiar and unfamiliar habitats Name a variety of plants and animals in their habitats Investigate the differences between things that are living, dead, and things that have never been alive	
Key Vocabulary	*squashy, absorbent, opaque, brittle, rigid, transparent, rough, soft, bendy, waterproof,*	***Survival, offspring, hygiene, nutrition, reproduction***		*Deciduous, evergreen, branches, trunk, root, leaf, blossom, bulb, seed, bud, flower, stem, water, light, temperature, germination, reproduction*	***Habitats, micro-habitats, food chain, shelter, conditions***	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 3						
History/ Geography unit	**Walk Like an Egyptian**	**What a disaster!**	**Britain through the ages**		**From Pole to Pole**	**The Hills are alive**
Unit title/strand	**Animals including humans**	**Rocks**	**Forces Isaac Newton- Gravity (pull and Push)**	**Plants**		**Light**
Assessment sheet	**SA1**	**SA2**	**SA3**	**SA4**		**SA5**
Scientist study	**Wilhelm Rontgen - X rays**	**Mary Anning- Fossil hunter**	**Henry Ford- Cars**	**Joseph Banks- Botanist**		**Ibn al-Haytham -Light and our Eyes**
Knowledge	To be able to identify that animals, including humans, need the right	To be able to compare and group together different kinds of rocks on the basis of their	To be able to compare how things, move on different surfaces	To be able to identify and describe the functions of different parts of flowering plants		To be able to recognise that they need light in order to

	types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat To be able to identify that humans and some other animals have skeletons and muscles for support, protection and movement.	appearance and simple physical properties To be able to describe in simple terms how fossils are formed To be able to recognise that soils are made from rocks and organic matter.	To be able to notice that some forces need contact between two objects, but magnetic forces can act at a distance To be able to observe how magnets, attract or repel each other and attract some materials and not others To be able to 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 To be able to describe magnets as having two poles To be able to predict whether two magnets will attract or repel each other	To be able to explore the requirements of plants for life and growth and how they vary from plant to plant To be able to investigate the way in which water is transported within plants To be able to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	see things and that dark is the absence of light To be able to notice that light is reflected from surfaces To be able to recognise that light from the sun can be dangerous and that there are ways to protect their eyes To be able to recognise that shadows are formed when the light from a light source is blocked by a solid object To be able to find patterns in the way that the size of shadows change.
Skills	Identify that animals, including humans, need the right types and amount of nutrition Identify that humans and some animals have skeletons and muscles for support, protection and movement. Research that some animals cannot make their own food; they get nutrition from what they eat	Identify 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 Research and discuss different things linked to fossils (cross-curricular link to geography-volcanoes) Observe the buildings in the local environment to see the change over time and different rocks used to construct (cross-curricular link with geography)	Identify that some forces need contact between two objects, but magnetic forces can act at a distance Describe magnets as having two poles Research how magnets are used in everyday items and suggest creative uses for different strengths of magnets Observe how magnets attract or repel each other and attract some materials and not others	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers Identify that plants make their own food Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal 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 Observe the different stages of plant life cycles over a period of time. Compare the different factors that affect plant growth eg the amount of light, fertiliser.	Identify that they need light in order to see things and that dark is the absence of light Describe the reflection of light off surfaces (including mirrors, matte, shiny) Research why the sun could be dangerous for your eyes Observe patterns in the way that the size of shadows change. Compare ways to protect your eyes from light

	Research the different food groups Observe and compare movements (focusing on muscle groups) Compare and contrast diets of animals and humans Label human and animals skeletons (bones) Investigate how different parts of the body have special functions	Compare and group together different kinds of rocks (including those in the locality) on the basis of appearance and simple physical properties Classify rocks according to whether they have grains or crystals Investigate what happens when rocks rub together or what changes occur when they are put into water Predict how soil is formed due to the underlying rock type	Compare how things move on different surfaces 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 Investigate how far things will move on different surfaces, gather and record data Investigate the strengths of different magnets Predict whether two magnets will attract or repel each other, depending on which poles are facing.	Investigate the way in which water is transported within plants eg white carnation experiment		Investigate how shadows are formed when the light from a light source is blocked by a solid object Predict the length of shadows over time
Key Vocabulary	*Nutrition, hinge, socket and ball, nutrients, skeleton, muscles, support, protect, movement, vertebrates, exoskeleton, endoskeleton, carbohydrates, fats, proteins, vitamins and minerals, fibre, water*	*Fossils, organic matter, erosion, minerals, microorganisms, sedimentary, metamorphic or igneous*	*Magnetic field, north and south pole, repel, attract, force, magnetism,*	*Root, stem, leaves, flowers, carpel/ pistil, style, petal, stigma, anther, stamen, filament, sepal, ovary, eggs/ovules, air, light, water, nutrients, soil, transportation, pollination, seed formation, seed dispersal, chlorophyll, photosynthesis*		*Reflection, reflective surfaces, shadow, light source, emit, reflect, opaque, translucent and transparent*
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 4						
History/ Geography unit	**It's all Greek to me**	**Greece is the word!**	**Ruthless Romans**		**Rumble in the Jungle**	**Over the hills are far away**
Unit title/strand	**Animals including humans**	**Living things and their habitats**	**Sound**		**Electricity**	**States of matter**
Assessment sheet	**SA1**	**SA2**	**SA3**		**SA4**	**SA5**

Scientist study	Ivan Pavlov- Digestive System Mechanisms	George Cuvier – Palaeontology, fossils and natural history	Alexander Graham Bell -Invented the telephone	Thomas Edison- Lightbulb	Anders Celsius - Temperature Scale
Knowledge	To be able to describe the simple functions of the basic parts of the digestive system in humans To be able to identify the different types of teeth in humans and their simple functions To be able to construct and interpret a variety of food chains, identifying producers, predators and prey.	To be able to recognise that living things can be grouped in a variety of ways To be able to explore and use classification keys to help group, identify and name a variety of living things To be able to recognise that environments can change and that this can sometimes pose dangers to living things.	To be able to identify how sounds are made, associating some of them with something vibrating To be able to recognise that vibrations from sounds, travel through a medium to the ear To be able to find patterns between the pitch of a sound and features of the object that produced it To be able to find patterns between the volume of a sound and the strength of the vibrations that produced it To be able to recognise that sounds get fainter as the distance from the sound source increases	To be able to identify common appliances that run on electricity To be able to construct a simple series electrical circuit, identifying and naming its basic parts To be able to identify whether or not a lamp will light in a simple series circuit, based on whether the lamp is part of a complete loop with a battery To be able 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 be able to recognise some common conductors and insulators, and associated metals with being good conductors	To be able to compare and group materials, according to whether they are solid, liquid or gases To be able to 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 To be able to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature
Skills	Identify the different types of teeth in humans and their simple functions Describe the simple functions of the basic parts of the digestive system in humans Observe how food and drink can damage teeth (white egg investigation)	Recognise that living things (including those in the locality) can be grouped in a variety of ways Research examples of human impact (positive and negative) on the human environment (link to Geography) Observe that environments can change throughout the year and	Identify how sounds are made, associating some of them with something vibrating Research a variety of different materials for sound proofing Observe the vibrations from sounds travelling through a medium to the ear (eg. Different levels of water in a bottle or rice on a drum) Observe patterns between the pitch of a sound and features of the object that produced it	Identify whether or not a lamp will light in a simple series circuit Research about precautions for working safely with electricity Observe that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees

	Compare the teeth of carnivores and herbivores Label the food's journey through the body (the digestive system) Construct and interpret a variety of food chains, identifying producers, predators and prey.	that this can sometimes pose dangers to living things. Recognise that living things (including those in the locality) can be grouped in a variety of ways Investigate and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Compare a variety of different instruments and explore the pitch and volume (eg. Homework task- if time poor) (cross-curricular link- music) Investigate sounds getting fainter as the distance from the sound source increases Predict the volume of a sound and the strength of the vibrations that produced it		simple series circuit (observe brightness) Compare common appliances that run on electricity Construct a simple series circuit, identifying/naming its basic parts, including cell, wire, bulb, switch and buzzer Draw the circuit as a pictorial representation (not necessarily using conventional circuit symbols) Investigate how to use their circuits to create simple devices Predict common conductors and insulators, and associate metals with being good conductors (following an investigation task)	Celsius (°C) (cross-curricular link to Maths) Compare and group materials together, according to whether they are solids, liquids or gases and label how the molecules are formed in each state. Compare and group materials together, according to whether they are solids, liquids or gases and **label** how the molecules are formed in each state. Investigate a variety of everyday materials and develop simple descriptions of the states of matter Predict and record evaporation rates of everyday materials (eg. puddle in a playground or washing on a line)
Key Vocabulary	*large intestine, organ, function, maintain, oesophagus, stomach, small intestine, large intestine, saliva, stomach, nutrients, bloodstream, undigested, incisors, canines, Pre-molars, molars, primary consumer, producer, secondary consumer*	*Interdependence, conservation, similarities, differences, mammals, fish, species, kingdoms, characteristics, diverse, animals, plants, fungi, prokaryotes and protista*	*Pitch, vibrations, tone, frequency*		*Components, voltage, batteries, series circuit, parallel circuit, current, short circuit, circuit, resistance, conduct, insulate*	*Solid, liquid, gases, evaporation, condensation, particles*
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 5						

History/ Geography unit	Savage Saxons	What a wonderful world	Victorious Vikings	Go with the flow		The World at War
Unit title/strand	Living things and their habitats	Earth and Space	Properties and changing materials		Forces	Animals including humans
Assessment sheet	SA1	SA2	SA3		SA4	SA5
Scientist study	Sir David Attenborough- Animal Behaviourist	Stephen Hawking- Black Holes Neil Armstrong- First man on the Moon	CHOOSE ONE – Becky Schroeder - fluorescence material Spencer Silver, Arthur Fry and Alan Amron - Post-It Notes Ruth Benerito - Wrinkle-Free Cotton		Galileo Galilei - Gravity and Acceleration Archimedes of Syracuse- Levers	Louis Pasteur- Vaccination
Knowledge	To be able to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird To be able to describe the life process of reproduction in some plants and animals.	To be able to describe the movement of the Earth, and other planets, relative to the Sun in the solar system To be able to describe the movement of the Moon relative to the Earth To be able to describe the Sun, Earth and Moon as approximately spherical bodies To be able to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	To be able to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity, and response to magnets To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution To be able to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating To be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials To be able to demonstrate that dissolving, mixing and changes of state are reversible changes To be able to explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible		To be able to explain that unsupported objects fall towards the Earth because of the force of gravity To be able to identify the effects of air resistance, water resistance and friction To be able to recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	To be able to describe the changes as humans develop to old age.
Skills	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Research that the Sun is a star at the centre of our solar	Identify that some materials will dissolve in liquid to form a solution Describe how to recover a substance from a solution- evaporation Research chemists who have created new materials for example. Spencer Silver and Ruth Benerito		Identify the effects of air resistance, water resistance and friction, that act between moving surfaces - Research about how scientists, for example,	Describe the changes as humans develop to old age Researching the gestation periods of other animals and comparing them with humans

	Describe the life process of reproduction in some plants and animals. Find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. Observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. Compare life-cycles of plants and animals in a local environment and with plants animals around the world Label different parts of the plant Find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals Raise questions about the local environment throughout the year	system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006). Observe the movement of the Moon relative to the Earth (over a month with a moon diary) Observe the Sun, Earth and Moon as approximately spherical bodies Compare that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones). Label a diagram to show the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	Research and discuss the creation of new materials such as polymers, super-sticky and super-thin materials. Observe that dissolving, mixing and changes of state are reversible changes (cross- curricular link DT with cooking) Observe 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, cooking such as the cooking of bread or cakes. 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 Compare the uses of every day materials based of evidence (including metals, wood and plastics) from comparative and fair tests Label reversible and irreversible changes using a Carroll diagrams or classification keys (cross-curricular link Maths) Investigate the knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Investigate which material would be the most effective for…. Eg. Thermal conductors, insulators or darkness (incl. observe and predict)	Galileo Galilei and Isaac Newton helped to develop the theory of gravity Observe that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect Compare and contrast the effects of products that you design/make that use levers, pulleys and gears (cross-curricular link DT) Label the different forces (gravity, water resistance, air resistance, wind and up thrust) acting on an object Investigate the effects of friction on movement and find out how it slows or stops moving objects Investigate that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Exploring the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall.	Recording the length and mass of a baby as it grows Learn about the changes experienced in puberty Draw a timeline to indicate stages in the growth and development of humans Investigate changes (height and age) within the school Predict future growth using results from scatter graph (cross-curricular link to maths)
Key Vocabulary	*Metamorphosis, reproduction, species, fertilisation, larval, characteristics, inherited, organism, generations, DNA,*	*Solar system, orbiting, sustain life, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, revolution, leap year, axis, crust, core, mantle, plates, fault lines, molten rock, magma,*	*Evaporating, condensation, changing state, solidification, filtering, melting, sieving, dissolving, reversible, irreversible, chemical changes, physical changes, reaction, molecules, permeable, viscosity, density, buoyancy, conduct, insulate, transparent, translucent, opaque, magnetism, compressed, volume,*	*Gravity, air resistance, friction, gravitational pull, Newton meter, mass, tension, water resistance, pulleys, gears, levers*	*Foetus, toddler, teenager, adulthood, pensioner, ovum, life cycle, reproduction, metamorphosis*

	environment, Genes, evolve	*erosion, lunar, eclipse, gravity, solar, tide*				
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 6						
History/ Geography unit	**Catastrophic Cold War**	**Let's go Green!**	**Off with their heads**	**Mysterious Mayans**	**I want to live in America**	
Unit title/strand	**Living things and their habitats**	**Animals including humans**	**Evolution and inheritance**	**Electricity**	**Light**	**Science sessions at Abbey Park Physics**
Assessment sheet	**SA1**	**SA2**	**SA3**	**SA4**	**SA5**	
Scientist study	Carl Linnaeus – Standard system of classification	**William Harvey – Blook circulation and the function of the heart as a pump**	**Charles Darwin- Evolution**	**William Kamkwamba – brought electricity to his village in Malawi from reading books about wind energy** **Film – The Boy who harnessed the wind (Netflix)**	**Percy Shaw - The Cats Eye**	
Knowledge	To be able to describe how living things are classified into broad groups according to common observable characteristics To be able to give reasons for classifying plants and animals based on specific characteristics	To be able to identify and name the main parts of the human circulatory system To be able to recognise the impact of diet, exercise, drugs and lifestyle on the way their body's function To be able to describe the ways in which nutrients and water are transported within animals, including humans	To be able to recognise that living things have changed over time and that fossils provide information To be able to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents To be able to identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	To be able to recognise that light appears to travel in straight lines To be able to use the idea that light travels in straight lines to explain how objects are seen To be able to explain how we see things because they give out or reflect light into the eye To be able to use the idea that light travels in straight lines to explain why shadows have the same shape as the object that cast them	To be able to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit To be able to compare and give reasons for variations in how components function To be able to use recognised symbols when representing a simple circuit in a diagram	

Skills	Identify reasons for classifying plants and animals based on specific characteristics. Identify that broad grouping, such as micro-organisms, plants and animals can be subdivided 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 Research about significance of the work of scientists such as Carl Linnaeus, a pioneer of classification. Classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). Predict reasons for classifying plants and animals based on specific characteristics.	Describe the ways in which nutrients and water are transported within animals, including humans. Research questions to understand how the circulatory system enables the body to function. Research the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health. Label the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood (build on prior learning in years 3 and 4 of skeletal, muscular and digestive system) Investigate how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body. Predict the impact of diet, exercise, drugs and lifestyle on the way their bodies function	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Identify that living things produce offspring of the same kind but normally offspring vary and are not identical to their parents Describe how characteristics are passed from parents to their offspring, i.e. different breeds of dogs, and what happens when, for example, Labradors are crossed with poodles Research about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution. Observe that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Compare adaptations animals make over time to increase their survival rate in a particular environment. For example. Giraffe's neck over time Investigate the advantages and disadvantages of	Identify how we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Describe how we see things or that we see things because light travels from light sources to our eyes or light sources to objects and then to our eyes. Observe that light appears to travel in straight lines Observe how light travels in straight lines to explain why shadows have the same shape as the objects that cast them and how that varies at different times of the day. Investigate the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Investigate phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur) Predict where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works.	Identify the link between the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Research the necessary precautions needed for working safely with electricity Research and learn how to represent a simple circuit in a diagram using recognised symbols - 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 Label a diagram using recognised symbols when representing a simple circuit Investigate and construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors Predict what will happen as you make changes to a circuit one component at a time (Cross-curricular – DT Morse code boxes, Christmas light)	

			specific adaptations. For example. Two feet rather than four, long or short beak, brightly coloured or scented flowers, gills or lungs. (Cross-curricular links Maths graphing)	Predict how light behaves including light sources, reflection and shadows and discuss what happens.		
Key Vocabulary	*Diversity, classify, common characteristics, conservation, organisms, animals, plants, fungi, prokaryote and Protoctista, kingdoms*	*Heart, pulse, blood vessels, arteries, oxygen, veins, carbon dioxide, capillaries, respiration, organs, digestion, Nutrients, mouth, oesophagus, stomach, small intestine, large intestine, chemicals in saliva, stomach, particles, nutrients, absorbed, bloodstream, undigested matter,*	*Igneous, sedimentary, metamorphic, fossils, evolution, organism, adaptation, habitat, survive, climate, evolution, natural selection, offspring, mutation, ancestor, diverse, generation, adaptions,*	*Refection, energy, axis, solar eclipse, lunar eclipse, light source, reflection, shadows, straight lines*	*Brightness, loudness, circuit, components, symbol, buzzer, bulb, switches, voltage, electrons, conductors, resistor, series circuit, parallel circuit*	