



Science

at South Kirkby Academy

At SKA our vision is to give children a Science curriculum which enables them to explore and discover the world around them, confidently, so that they have a deeper understanding of the world we live in. To achieve this it involves exciting, practical hands on experiences that encourage curiosity and questioning. Our aim is that these stimulating and challenging experiences help children secure and extend their scientific knowledge and vocabulary. We believe that these opportunities will ensure that our children are confident, life-long learners who will explore the world around them.

Implementation In their weekly science lessons children learn about new concepts (from various sources including books, videos, ICT sources, etc.), research famous scientists and discoveries and ask scientific questions about the world around them. Each unit of study also has planned opportunities for children to work scientifically through investigations and experiments, to develop their scientific skills and deepen their understanding of the scientific concepts taught. This also provides opportunities for them to be inquisitive, ask questions and discover things for themselves. Children are encouraged to apply their skills in maths, such as collecting, presenting and analysing data (e.g. tally charts, graphs and charts) during experiments and investigations. Key vocabulary for each unit is displayed and used in science lessons. Through these lessons, we intend to inspire pupils to develop a love of science and help them understand how it shapes the world around them. All pupils are supported to access science at SKA. Children are able to develop their skills despite any barriers they may face. Teachers and plan and scaffold accordingly to support all learners.

Impact The successful approach to the teaching of science at South Kirkby Academy will result in a fun, engaging, high quality science education, that provides children with the foundations for understanding the world that they can take with them once they complete their primary education. Formative assessment is used as the main tool for assessing the impact of Science at South Kirkby Academy as it allows for misconceptions and gaps to be addressed more immediately rather than building on insecure scientific foundations.

By the time they leave South Kirkby Academy in Year 6, we expect our children to:

- *demonstrate a love of science work and an interest in further study and work in this field*
- *retain knowledge that is pertinent to Science with a real-life context.*
- *be able to question ideas and reflect on knowledge.*
- *be able to articulate their understanding of scientific concepts and be able to reason scientifically using rich language linked to science.*
- *Demonstrate mathematical skills through their work, organising, recording and interpreting results.*
- *work collaboratively and practically to investigate and experiment.*
- *Reason scientifically by following a line of enquiry, using their knowledge of relationships and generalisations, and justify their ideas.*



The Journey of Science



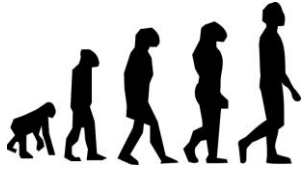
KS3



Assessment Point

Y6 Spring

Light
Evolution and Inheritance



Y6 Autumn

Classification of Living Things
Electricity



Y5

Y5 Spring

Materials
Circle of Life

Y6 Summer
Healthy Bodies



Y5 Summer

Growing Up and Growing Old



Y5 Autumn

Space
Forces



Y4 Spring

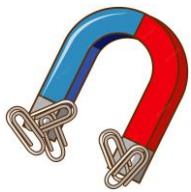
Teeth and Digestion
Living things



Y4 Summer

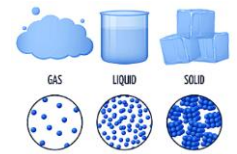
Sound
Water Cycle

Y4 Autumn
States of Matter
Electricity



Y3 Spring

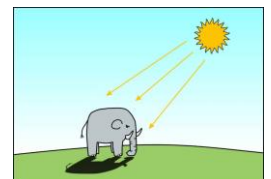
Forces and Magnets
Food and Our Bodies



Y4

Y3 Summer

Light and Shadows



Y3 Autumn

Rocks, Soils and Fossils
Plants

Y3



KS1



Science

Progression Document

Year	Unit Title	Progression of Skills	Key Knowledge (5 Questions)	Key Vocabulary
3	Rocks, soils and fossils	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Can children name some types of rock and give physical features of each? • Can children explain how a fossil is formed? • Can children explain that soils are made from rocks and also contain living/dead matter? • Can children compare and group together different kinds of rocks on the basis of their appearance and simple physical properties? • Can children identify differences, similarities or changes related to simple scientific ideas and processes? 	rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, soil, types of soil (e.g. peaty, sandy, chalk, clay)
	Food and our bodies	<ul style="list-style-type: none"> • Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food – they get nutrition from what they eat. • Identify that humans and some other animals have skeletons and muscles for support, protection and movement • Name the nutrients found in food • State that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients 	<ul style="list-style-type: none"> • Can children name the nutrients found in food • Can children state that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients? • Can children 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 • Can children identify that humans and some other animals have skeletons and muscles for support, protection and movement? • Can children gather, record, classify and present data in a variety of ways to help in answering questions? 	Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine
	Forces and Magnets	<ul style="list-style-type: none"> • Compare how things move on different surfaces. • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. 	<ul style="list-style-type: none"> • Can children give examples of objects moving differently on different surfaces? • Can children show how the poles of magnets attract and repel? 	Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, attract, repel, magnetic material, iron,

	<ul style="list-style-type: none"> • Observe how magnets attract or repel each other and attract some materials and not others. • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials. • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing. 	<ul style="list-style-type: none"> • Can children give examples of which objects need forces to touch, and which objects can action without rouching? • Can children describe how magnets attract and repel? • Can children make predictions on which materials will attract to magnets and which will not? 	steel, poles, friction, surface, north, south
Key Scientists: William Gilbert, Andre Marie Ampere		Linked Texts: The Iron man by Ted Hughes, Mrs Armitage: Queen of the Road by Quentin Blake and Mr Archimedes’ Bath by Pamela Allen	
Plants	<ul style="list-style-type: none"> • Identify and describe the functions of different parts of flowering plants: roots; stem/trunk; leaves; and flowers. • Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • Investigate the way in which water is transported within plants. • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	<ul style="list-style-type: none"> • Can children explain the function of the parts of a flowering plant? • Can children describe the life cycle of flowering plants, including pollination, seed formation, seed dispersal, and germination? • Can children give different methods of pollination and seed dispersal, including examples? • Can children set up simple practical enquiries, comparative and fair tests? • Can children explain the way in which water is transported within plants. 	photosynthesis, pollen, insect/wind pollination, male, female, seed formation, dispersal, air, nutrients, minerals, soil, absorb, transport, carbon dioxide, oxygen
Key Scientists: Jan Ingenhousz, Joseph Banks		Linked Text: The Hidden Forest by Jeanie Baker George and Flora’s Secret Graden by Jo Elworthy	
Light and Shadow	<ul style="list-style-type: none"> • Recognise that they need light in order to see things, and that dark is the absence of light. • Notice that light is reflected from surfaces. • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • Recognise that shadows are formed when the light from a light source is blocked by an opaque object. • Find patterns in the way that the size of shadows change. 	<ul style="list-style-type: none"> • Can children describe how we see objects in light and can describe dark as the absence of light • Can children state that it is dangerous to view the sun directly and state precautions used to view the sun, for example in eclipses? • Can children define transparent, translucent and opaque? • Can children describe how shadows are formed? • Can children recognise that light is reflected from surfaces? 	light, light source, Sun, sunlight, dangerous

	<p>Scientific enquiry skills</p> <ul style="list-style-type: none"> • The children consider their prior knowledge when asking questions. They independently use a range of question stems. • Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They recognise when • The children make systematic and careful observations. • They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements. • Children select from a range of practical resources to gather evidence to answer questions generated by themselves or the teacher. • Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence. • Children interpret their data to generate simple comparative statements based on their evidence. They begin to identify naturally occurring patterns and causal relationships. • Draw conclusions based on their evidence and current subject knowledge. • Identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. • Children use their evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface. • Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry. • They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary. 			
4	States of matter and the water cycle	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Can children create a concept map, including arrows linking the key vocabulary? • Can children name properties of solids, liquids and gases? • Can children give everyday examples of melting and freezing? • Can children give everyday examples of evaporation and condensation? • Can children describe the water cycle? 	solid, liquid, gas, heating, cooling, state change, melting, freezing, melting point, boiling, boiling point, evaporation, condensation, temperature, water cycle
	Teeth and Eating (Animals including humans)	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Can children sequence the main parts of the digestive system? • Can children draw the main parts of the digestive system onto a human outline? • Can children describe what happens in each part of the digestive system? • Can children point to the three different types of teeth in their mouth and talk about their shape and what they are used for? • Can children name producers, predators and prey within a habitat? 	Digestive system, digestion, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain

	Living things and their habitats	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Can children name living things living in a range of habitats, giving the key features that helped them to identify them? • Can give examples of how an environment may change both naturally and due to human impact? • Can children name living things living in a range of habitats, giving the key features that helped them to identify them? • Can children give examples of how an environment may change both naturally and due to human impact? • Can children present their learning about changes to the environment in different ways? • Can children use classification keys to identify unknown plants and animals? 	Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate
	Sound	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Can children name sound sources and state that sounds are produced by the vibration of the object? • Can children state that sounds travel through different mediums such as air, water, metal? • Can children give examples to demonstrate how the pitch of a sound are linked to the features of the object that produced it? • Can children give examples of how to change the volume of a sound e.g. increase the size of vibrations by hitting or blowing harder? • Can children give examples to demonstrate that sounds get fainter as the distance from the sound source increases? 	Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation
	Electricity	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Can children name the components in a circuit? • Can children make electric circuits? • Can children control a circuit using a switch? • Can children name some metals that are conductors? • Can children name materials that are insulators? 	Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor,

		<p>the lamp is part of a complete loop with a battery.</p> <ul style="list-style-type: none"> • 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. 		insulator, metal, non-metal, symbol
	Scientific enquiry skills			
	<ul style="list-style-type: none"> • The children consider their prior knowledge when asking questions. They independently use a range of question stems. • Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They recognise when • The children make systematic and careful observations. • They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements. • Children select from a range of practical resources to gather evidence to answer questions generated by themselves or the teacher. • Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence. • Children interpret their data to generate simple comparative statements based on their evidence. They begin to identify naturally occurring patterns and causal relationships. • Draw conclusions based on their evidence and current subject knowledge. • Identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. • Children use their evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface. • Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry. • They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary. 			
5	Space	<ul style="list-style-type: none"> • Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. • Describe the movement of the Moon relative to the Earth. • Describe the Sun, Earth and Moon as approximately spherical bodies. • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. 	<ul style="list-style-type: none"> • Can children show, using diagrams, the movement of the Earth and Moon? • Can children explain the movement of the Earth and Moon? • Can children show using diagrams the rotation of the Earth and how this causes day and night? • Can children explain what causes day and night? • Can children describe the arguments and evidence used by scientists in the past such as Copernicus or Galileo? 	Sun, Moon, Earth, planets (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, Solar System, rotate, star, orbit
	Forces	<ul style="list-style-type: none"> • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. 	<ul style="list-style-type: none"> • Can children demonstrate the effect of gravity acting on an unsupported object? • Can children give examples of friction, water resistance and air resistance? 	Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears

	<ul style="list-style-type: none"> • Identify the effects of air resistance, water resistance and friction that act between moving surfaces. • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 	<ul style="list-style-type: none"> • Can children give examples of when it is beneficial to have high or low friction, water resistance and air resistance? • Can children demonstrate how pulleys, levers and gears work? • Can explain the results of their investigations in terms of the force, showing a good understanding that as the object tries to move through the water or air or across the surface the particles in the water, air or on the surface slow it down? 	
Materials	<ul style="list-style-type: none"> • Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • 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. 	<ul style="list-style-type: none"> • Can children use understanding of properties to explain everyday uses of materials, for example, how bricks, wood, glass and metals are used in buildings? • Can children explain what dissolving means, giving examples? • Can children name equipment used for filtering and sieving? • Can children use knowledge of liquids, gases and solids to suggest how materials can be recovered from solutions or mixtures by evaporation, filtering or sieving? • Can children describe some simple reversible and non-reversible changes to materials, giving examples? 	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material
Living Things and their Habitats	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Can children draw the life cycle of a range of animals identifying similarities and differences between the life cycles? • Can children explain the difference between sexual and asexual reproduction and give examples of how plants reproduce in both ways? • Can children identify patterns in life cycles? 	life cycle, reproduction, sexual, fertilises, asexual, pollination, dispersal, cell, male, female, pregnancy, mammal, metamorphosis, amphibian, insect, bird, egg, embryo, plant

		<ul style="list-style-type: none"> • Can children compare two or more animal life cycles they have studied? • Can children explain how a range of plants reproduce asexually? 	
Key Scientists: David Attenborough, James Brodie		Key Texts: The Land of Never believe by Norman Messenger and Mummy laid an egg by Babette Cole	
Growing up and growing old	<ul style="list-style-type: none"> • Describe the changes as humans develop to old age. 	<ul style="list-style-type: none"> • Can children explain the changes that takes place in boys and girls during puberty? • Can children explain how a baby changes physically as it grows, and also what it is able to do? • Can children present information about the changes occurring during puberty as an information leaflet for other Y5 children or answers to 'problem page questions'? 	Foetus, Embryo, Uterus, Gestation, Toddler, Adolescent, Elderly, Growth, Development, Puberty, Menstruation
Scientific enquiry skills			
<ul style="list-style-type: none"> • Given a wide range of resources children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They recognise how secondary sources can be used to answer questions that cannot be answered through practical work. • Children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample. • Children select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale. • During an enquiry, they make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching); in order to get accurate data (closer to the true value). • Children present the same data in different ways in order to help with answering the question. • Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer. • Children talk about how their scientific ideas change due to new evidence that they have gathered. • In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge. • Evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used. • Identify any limitations that reduce the trust they have in their data. • Communicate their findings to an audience using relevant scientific language and illustrations. • Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests. 			

6	Light	<ul style="list-style-type: none"> • Recognise that light appears to travel in straight lines. • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 	<ul style="list-style-type: none"> • Can describe, with diagrams or models as appropriate, how light travels in straight lines either from sources or reflected from other objects into our eyes? • Can children predict and explain, with diagrams or models as appropriate, how the shape of shadows can be varied • Can children 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? • Can children 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? • Can children use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them? 	light, light source, Sun, sunlight, dangerous, straight lines, light rays
	Electricity	<ul style="list-style-type: none"> • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. • Use recognised symbols when representing a simple circuit in a diagram. 	<ul style="list-style-type: none"> • Can children make electric circuits and demonstrate how variation in the working of particular components, such as the brightness of bulbs, can be changed by increasing or decreasing the number of cells or using cells of different voltages? • Can children draw circuit diagrams of a range of simple series circuits using recognised symbols? • Can children incorporate a switch into a circuit to turn it on and off? • Can children change cells and components in a circuit to achieve a specific effect? 	Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage
	Classification	<ul style="list-style-type: none"> • Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. • Give reasons for classifying plants and animals based on specific characteristics. 	<ul style="list-style-type: none"> • Can children give examples of animals in the five vertebrate groups and some of the invertebrate groups? • Can children give the key characteristics of the five vertebrate groups and some invertebrate groups? • Can children compare the characteristics of animals in different groups? • Can children use classification materials to identify unknown plants and animals? 	vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, warm-blooded, cold-blooded, insects, spiders, snails, worms, flowering, non-flowering, mosses, ferns, conifers

		<ul style="list-style-type: none"> • Can children create classification keys for plants and animals? • Can children give a number of characteristics that explain why an animal belongs to a particular group? 	
Evolution and inheritance	<ul style="list-style-type: none"> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 	<ul style="list-style-type: none"> • Can children explain the process of evolution? • Can children give examples of how plants and animals are suited to an environment? • Can children give examples of how an animal or plant has evolved over time e.g. penguin, peppered moth? • Can children give examples of fossil evidence that can be used to support the theory of evolution? • Can children identify characteristics that will make a plant or animal suited or not suited to a particular habitat, therefore able to pass on their characteristics? 	offspring, reproduction, vary, characteristics, suited, adaptation, environment, inherited, species, evolve, evolution, Charles Darwin, fossils, genetics, variation, survival of the fittest
Key Scientists: Charles Darwin, Alfred Russel Wallace, Jane Goodall		Link Texts: One Smart Fish by Christopher Wormell, The Mollybird by Jules Pottle, Our Family Tree by Lisa Westburg Peters	
Healthy bodies	<ul style="list-style-type: none"> • Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. • Describe the ways in which nutrients and water are transported within animals, including humans. 	<ul style="list-style-type: none"> • Can children draw a diagram of the circulatory system and label the parts and annotate it to show what the parts do? • Can children explain the key functions of parts of the circulatory system? • Can children use subject knowledge about the heart whilst writing conclusions for investigations? • Can children explain both the positive and negative effects of diet, exercise, drugs and lifestyle on the body? • Can children present information e.g. in a health leaflet describing impact of drugs and lifestyle on the body? 	Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle
Scientific enquiry skills			
<ul style="list-style-type: none"> • Given a wide range of resources children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They recognise how secondary sources can be used to answer questions that cannot be answered through practical work. 			

- Children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample.
- Children select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale.
- During an enquiry, they make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching); in order to get accurate data (closer to the true value).
- Children present the same data in different ways in order to help with answering the question.
- Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer.
- Children talk about how their scientific ideas change due to new evidence that they have gathered.
- In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge.
- Evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used.
- Identify any limitations that reduce the trust they have in their data.
- Communicate their findings to an audience using relevant scientific language and illustrations.
- Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.