BRINDLE GREGSON LANE

Our World of Learning in Science

Love learning and inspire each other to thrive in the world.

Language and Literacy

First Hand Learning

My World and Me

Our world of learning in Science - EYFS

Early Years Foundation Stage	
Knowledge and Understanding of the World **Ages & Stages - Reception** 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.	**ELG The Natural World** Explore the natural world around them, making observations and drawing pictures of animals and plants; - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Intent	Implementation	Impact
Science teaching and learning at Brindle Gregson Lane Primary School stimulates children's curiosity in finding out why things happen the way they do and will equip them with the knowledge required to understand the uses and implications of science, today and in the future on a personal, national and global level. The curriculum is designed to ensure that children are able to acquire key scientific knowledge through practical experiences; using equipment, conducting experiments, building arguments and explaining concepts confidently. The children are immersed in scientific vocabulary, which aids children's knowledge and understanding. We intend to provide all children with a broad and balanced science curriculum. **Aims:** To develop a positive attitude towards science and an awareness of its fascination An understanding of science through a process of enquiry and investigation Confidence and competence in scientific knowledge, concepts and skills An ability to reason, predict, think logically and to work sympathetically and accurately An ability to communicate scientifically The initiative to work both independently and in cooperation with others The ability and understanding to use and apply science across the curriculum and real life.	Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Working Scientifically is given priority in planning and delivery of Science lessons. Through Science, children have the opportunity to question, compare, investigate, research, draw conclusions, classify, observe and make use of specific scientific resources and tools. Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of, 'The National Curriculum programmes of study for Science 2014' and, 'Understanding of the World' in the Early Years Foundation Stage. Science teaching at Brindle Gregson Lane Primary School involves adapting and extending the curriculum to match all pupils' needs. Science is taught as discrete units and lessons and where possible, links are made with wider curriculum areas. The Science curriculum is progressive with opportunity for building on knowledge acquired in previous year groups. Memorable knowledge and skills have been identified for each of the units to provide progressive acquisition of knowledge. This is supported by the use of 'sticky vocabulary and sticky knowledge' which are displayed on science working walls and subject specific knowledge organisers. Teachers regularly refer to this knowledge and key vocabulary with meanings so that it 'sticks'. This enables children to readily apply knowledge and vocabulary to their written verbal communication of skills.	The successful approach to the teaching of science at Brindle Gregson Lane Primary School will result in a fun, engaging, high quality science education that provides children with the foundations for understanding the world. Assessment at Brindle Gregson Lane Primary School is teacher based and formed using formal strategies (e.g. periodic year group assessment tasks, quizzes) and informal strategies (Use of concept maps, verbal/written outcomes, reflection tasks/presentations). Formative assessment is used as the main tool for assessing the impact of Science at Brindle Gregson Lane as it allows for misconceptions and gaps to be addressed more immediately rather than building on insecure scientific foundations. Children at Brindle Gregson School will: ▪ 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. ▪ work collaboratively and practically to investigate and experiment. ▪ achieve age related expectations in Science at the end of their cohort year.

Our world of learning in Science - Year One

Year 1				
National Curriculum Objectives	<u>Plants</u> - 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.	<u>Animals</u> -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)	<u>Human body and senses</u> -Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	<u>Materials</u> -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.
Key Vocabulary	common wild plants garden plants, tree, deciduous, evergreen, trunk, branches, leaf, root, plant, leaf, bud, flowers, blossom, petals, root, stem, fruit, vegetables, bulb, seed	common animals, fish, amphibians, reptiles, birds, mammals, pets, carnivores, meat, cat, dog, lion, tiger, fox, shark, killer whale, eagle, hawk, snake, herbivores, plants, cow	Human, hear, neck, Arms, elbows, legs, Knees, face, ears, Eyes, hair, Mouth, teeth	metal , wood, plastic, glass, metal, water, rock, properties, hard, soft, stretch, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, brick, paper, fabrics, elastic, foil
Woking Scientifically	▪ Observing closely, perhaps using magnifying glasses. ▪ Comparing and contrasting familiar plants. ▪ Describing how they were able to identify and group them, and ▪ Drawing diagrams showing the parts of different plants including trees. ▪ Keeping records of how plants have changed over time, for example the leaves falling off trees and buds opening. ▪ Comparing and contrasting what they have found out about different plants.	▪ by using their observations to: ▪ Compare and contrast animals at first hand or through videos and photographs. ▪ Describing how they identify and group them. ▪ Grouping animals according to what they eat. ▪ Using their senses.	▪ by using their observations to: ▪ Compare and contrast animals (humans) at first hand or through videos and photographs. ▪ Using their senses to compare different textures, sounds and smells.	▪ performing simple tests to explore questions, for example: ▪ -'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'
Year 1 on-going unit throughout the	<u>Seasonal changes</u> -Observe changes across the four seasons - Observe and describe weather associated with the seasons and how day length variety	<u>Seasonal Changes – Key Vocabulary</u> Season, spring, summer, autumn, winter, weather, hot/ warm, cool/ cold, sun/ sunny, cloud/ cloudy, wind/ windy, rain/ rainy snow/ snowing, hail/ hailing, sleet, frost, fog/ mist, ice/ icy, rainbow, thunder, lightning, storm, light/ dark, day/ night		

Our world of learning in Science - Year Two

Year 2				
National Curriculum Objectives	<u>Plants</u> -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.	<u>Animals Including Humans</u> -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.	<u>Living things and Habitats</u> -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.	<u>Materials</u> -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.
Key Vocabulary	Water, light suitable temperature, grow, healthy, germination, reproduction	Offspring, grow Adults, nutrition Reproduce, survival Water, food, air Exercise, hygiene, egg-chick-chicken, egg-caterpillar-pupa-butterfly, spawn-tadpole-frog, lamb-sheep, baby-toddler-child-teenager-adult	Living, dead, never alive, habitats, micro-habitats, food, food chain, sun-grass-cow-human, alive, healthy, logs, leaf, litter, stony path, under bushes, Shelter, seashore, woodland, ocean, rainforest, conditions, hot/ warm/ cold, dry/ damp/ wet, bright/ shade/ dark	Water, light suitable temperature, grow, healthy, germination, reproduction
Working Scientifically	▪ Observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or ▪ Observing similar plants at different stages of growth; ▪ Setting up a comparative test to show that plants need light and water to stay healthy.	▪ Observing, through video or first-hand observation and measurement, how different animals grow; ▪ Asking questions about what things animals need for survival suggesting ways to find answers to their questions. ▪ Observing, through video or first-hand observation and measurement, how humans grow. ▪ Recording their findings using charts. ▪ Asking questions about what things animals [humans]. need for survival and what humans need to stay healthy. ▪ Suggesting ways to find answers to their questions.	▪ Sorting and classifying things as to whether they are living, dead or were never alive. ▪ Recording their findings using charts ▪ Describing how they decided where to place things, ▪ Exploring questions such as: 'Is a flame alive? Is a deciduous tree dead in winter?' ▪ Talking about ways of answering their questions. ▪ Constructing a simple food chain that includes humans (e.g. grass, cow, human); ▪ Describing the conditions in different habitats and micro-habitats (under log, on stony path, under bushes); ▪ Finding out how the conditions affect the number and type(s) of plants and animals that live there.	▪ Comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); ▪ Observing closely, ▪ Identifying and classifying the uses of different materials, and ▪ Recording their observations. ▪ Thinking about unusual and creative uses for everyday materials.

Our world of learning in Science - Year Three

Year 3					
National Curriculum Objectives	Light -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.	Animals Including Humans -Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat -Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Rocks -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	Plants 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.	Forces and magnets -Compare how things move on different surfaces notice that some forces need contact between two objects, but magnetic forces can act at a distance -Observe how magnets attract or repel each other and attract some materials and not others -Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials -Describe magnets as having two poles -Predict whether two magnets will attract or repel each other, depending on which poles are facing.
Key Vocabulary	Light, see, dark, reflect, Reflective, surface, Natural, star, Sun, Moon, artificial, torch, Candle, lamp, translucent, transparent	Nutrition, vitamins, minerals, fat, pr Carbohydrates, fibre, Water, diet **skeletons** – support, protection **skulls** – brain **ribs** – heart, lungs joint **muscles**- movement, pull, contract relax	Rock, stone, pebble, Boulder, soil, fossil, Grains, crystals, hard/ soft, texture, absorb water, marble, chalk, granite, sandstone, slate, sandy soil, clay soil, chalky soil, peat	**structure** – flowering plants, roots, stem/ trunk, leaves, flowers **function** – nutrition, support, reproduction, makes own food **requirements for life and growth** – air, light, water, nutrients from the soil, room to grow, fertiliser **life cycle -** flowers pollination, seed formation, seed dispersal	Force, push, pull, open, surface, magnet, magnetic, attract, repel, magnetic poles, north, south, metal, iron, steel
Working Scientifically	Looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.	Comparing and contrasting the diets of different animals (including their pets). Decide ways of grouping them according to what they eat. Researching different food groups and how they keep us healthy. Designing meals based on what they find out. Identifying and grouping animals with and without skeletons. Observing and comparing their movement. Exploring ideas about what would happen if humans did not have skeletons.	Observing rocks, including those used in buildings and gravestones. Exploring how and why they might have changed over time. Using a hand lens or microscope to help them. Identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. Research and discuss the different kinds of living things whose fossils are found in sedimentary rock. Explore how fossils are formed. Explore different soils. Identify similarities and differences between them. Investigate what happens when rocks are rubbed together or what changes occur when they are in water. Raise and answer questions about the way soils are formed.	Comparing the effect of different factors on plant growth, for example the amount of light, the amount of fertiliser; Discovering how seeds are formed by Observing the different stages of plant cycles over a period of time; Looking for patterns in the structure of fruits that relate to how the seeds are dispersed. Observing how water is transported in plants, for example, by putting cut, white carnations into coloured water. Observing how water travels up the stem to the flowers.	Comparing how different things move and grouping them. Raising questions and carrying out tests to find out how far things move on different surfaces. Gathering and recording data to find answers to their questions. Exploring the strengths of different magnets and finding a fair way to compare them. Sorting materials into those that are magnetic and those that are not. Looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another. Identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.

Our world of learning in Science - Year Four

Year 4					
National Curriculum Objectives	<u>Electricity</u> -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.	<u>Sound</u> -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.	<u>States of matter</u> -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.	<u>Living things and their Habitats –</u> -Construct and interpret a variety of food chains, identifying producers, predators and prey. -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.	<u>Teeth & Digestion –</u> -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
Key Vocabulary	Appliances, electricity electrical circuit, cell, wire, bulb, buzzer danger, electrical safety sign, insulators, wood, rubber, plastic, glass, conductors, metal, water, switch, open, closed, components plug, motor, mains	Sound, sound source, noise, vibrate, travel, solid, liquid, gas, pitch, tune, high, low, volume, loud, quiet, fainter, muffle, vibrations, insulation, Instrument, percussion, Strings, brass, woodwind, tuned, instrument	Solid, liquid, gas, air, oxygen, powder, grain/ granular, crystals, ice/ water/ steam, water, vapour, heated/ heating, cooled/ cooling, temperature, degrees Celsius, melt, Freeze, solidify, melting point, molten, boil	Environment, flowering non-flowering, plants, animals, vertebrate danger, **invertebrates-** snails, slugs, worms, spiders, insects **vertebrates-** fish, amphibians, reptiles, birds, mammals **plants –** flowering plants, non-flowering plants population, development, litter, deforestation, carnivore, herbivore, omnivore, brush, floss, food chain, Sun, producers, prey, predators	human digestive system, mouth **tongue**-mixes, moistens, saliva teeth: **incisors**- cutting, slicing **canines**- ripping, tearing **molars**-chewing, grinding oesophagus, transports, stomach, acid, enzymes, small intestine, large intestine

Our world of learning in Science - Year Four

Working Scientifically	▪ Observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.	▪ Finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. ▪ They might make ear muffs from a variety of different materials to investigate which provides the best insulation against sound. ▪ They could make and play their own instruments by using what they have found out about pitch and volume. ▪ Additional suggestion from Lancashire for working scientifically opportunities which enhance learning and support using ICT across the curriculum ▪ This unit provides an ideal opportunity for using data logging equipment to detect/measure and compare sounds.	▪ Grouping and classifying a variety of different materials. ▪ Exploring the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). ▪ Researching the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. ▪ Observing and recording evaporation over a period of time, such as a puddle in the playground or washing on a line. ▪ Investigating the effect of temperature on washing drying or snowmen melting. ▪ Additional suggestion from Lancashire for working scientifically opportunities which enhance learning and support using ICT. ▪ This unit provides an ideal opportunity for using data logging equipment to detect/measure and compare temperatures.	▪ Using and making simple guides or keys [sorting, grouping, comparing, classifying] to explore and identify local plants and animals. ▪ Making a guide [sorting, grouping, comparing, classifying] to local living things. ▪ Raising and answering questions based on their observations of animals. ▪ What they have found out about other animals that they have researched.	▪ Comparing the teeth of carnivores and herbivores. ▪ Suggesting reasons for differences. ▪ Finding out what damages teeth and how to look after them. ▪ Drawing and discussing their ideas about the digestive system. ▪ Comparing them with models or images.

Our world of learning in Science - Year Five

Year 5					
National Curriculum Objectives	<u>Forces</u> -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.	<u>Earth and Space</u> -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.	<u>Materials – Properties</u> -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	<u>Materials – Reversible/Irreversible changes</u> -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.	<u>Living things and their Habitats</u> -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. -Describe the changes as humans develop to old age.
Key Vocabulary	Fall, gravity, force, air resistance, water, resistance, friction, moving surfaces, mechanisms, levers, pulleys, gears, magnetic force, magnet, attract	Earth, planets, Sun, solar system, Moon, celestial body, sphere/ spherical, rotate/ rotation, spin, night and day, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, 'dwarf', planet, orbit, revolve, geocentric model, heliocentric model, shadow clocks, sundials, astronomical clocks	Properties, hardness, solubility, transparency, conductive, response to magnets, dissolve, liquid, solution, solute, separate, separating, solids, liquids, gases, filtering, sieving, evaporating, mixing, evaporation, filtering, sieving, melting, conductivity, insulation, chemical, opaque, translucent, rusting, residue, condensing	Solid, liquid, gas, air, oxygen, powder, grain/ granular, crystals, ice/ water/ steam, water vapour, heated/ heating, cooled/ cooling, temperature, degrees, Celsius, melt, freeze, solidify, melting point, molten, reversible changes, irreversible,	Fall, gravity, force, air resistance, water, resistance, friction, moving surfaces, mechanisms, levers, pulleys, gears, magnetic force, magnet, attract

Our world of learning in Science - Year Five

Working Scientifically	▪ Exploring falling paper cones or cup-cake cases. ▪ Designing and making [exploring] a variety of parachutes. ▪ Carrying out fair tests to determine which designs are the most effective. ▪ Exploring resistance in water by making and testing boats of different shapes. ▪ Design and make artefacts that use simple levers, pulleys, gears and/or springs and explore their effects.	▪ Comparing the time of day at different places on the Earth through internet links and direct communication. ▪ Creating simple models of the solar system. ▪ Constructing simple shadow clocks and sundials, calibrated to show midday and the start and end of the school day. ▪ Finding out why some people think that structures such as Stonehenge might have been used as astronomical clocks.	▪ Carry out tests to answer questions such as 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains?' ▪ Compare materials in order to make a switch in a circuit.	▪ Observing and comparing the changes that take place, for example, when burning different materials or baking bread or cakes. ▪ Researching and discussing how chemical changes have an impact on our lives, for example cooking. ▪ Discuss [research] the creative use of new materials such as polymers, super-sticky and super-thin materials.	▪ Observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times). ▪ Asking pertinent questions. ▪ Suggesting reasons for similarities & differences. ▪ They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. ▪ Observe changes in an animal over a period of time (for example, by hatching and rearing chicks). ▪ Comparing how different animals reproduce and grow. Researching the gestation periods other animals and comparing them with humans. ▪ By finding out and recording the length and mass of a baby as it grows

Our world of learning in Science - Year Six

	Year 6				
National Curriculum Objectives	<u>Light</u> -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.	<u>Electricity</u> -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.	<u>Evolution and Inheritance</u> -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.	<u>Living things and their Habitats</u> -Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals -Give reasons for classifying plants and animals based on specific characteristics.	<u>Animals Including Humans</u> -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.
Key Vocabulary	Light, travels, straight, reflect, reflection, light source, object, shadows, mirrors, periscope, rainbow, filters	Appliances, electrical circuit, complete circuit, circuit diagram, circuit symbol, components, cell, battery, positive/ negative, terminal, connection, loose connection, short circuit, wire, crocodile, clip, bulb, brightness, switch, buzzer, volume, motor, conductor, insulator, voltage, current, resistance, danger, series circuit	Evolution, suited/ suitable, adapted/ adaptation, offspring, characteristics, vary/ variation, inherit/ inheritance, fossils	Organism, micro-organism, fungus, mushrooms, classification keys, environment, fish, amphibians, reptiles, birds, mammals, vertebrates, invertebrates	circulatory system, heart, blood, blood vessels, pumps, oxygen, carbon dioxide, lungs, nutrients, water, diet, exercise, drugs, lifestyle

Our world of learning in Science - Year Six

Working Scientifically	▪ Deciding [observe/explore] 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. ▪ Investigating the relationship between light sources, objects and shadows by using shadow puppets. ▪ Extend their experience [explore and observe] of light by looking at a range of 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	▪ Systematically identifying the effect of changing one [thing] component at a time in a circuit. ▪ Designing and making a set of traffic lights, a burglar alarm or some other useful circuit.	▪ Observing and raising questions about local animals and how they are adapted to the environment. ▪ Comparing how some living things adapt to survive in extreme conditions, e.g. cactuses, penguins and camels. ▪ Analysing the advantages and disadvantages of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.	▪ Using classification systems and keys. ▪ Identifying some animals and plants in the immediate environment. ▪ Researching unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.	▪ Exploring the work of scientists. ▪ Scientific research about the relationship between diet, exercise, drugs, lifestyle and health. ▪ Observing/Measuring changes to breathing, heart beat and or pulse rates after exercise.