

WEST TOWN LANE ACADEMY

Science Curriculum



Intent	Science teaching at West Town Lane Academy aims to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes as well as an understanding of the uses and implications of science, today and for the future. At West Town Lane Academy science is taught in half termly units. Throughout the units, the children will acquire and develop key knowledge, as well as the application of scientific enquiry skills. We ensure that the skills of working scientifically are developed throughout children's time at school so that they can apply their knowledge of science when using equipment, conducting experiments, debating different points of view and explaining concepts confidently. Specialist scientific vocabulary is taught and effective questioning is implemented to encourage children to communicate their ideas. The challenging concepts taught are reinforced by focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. This model allows the children to reflect and build upon their prior knowledge and increases their curiosity and enthusiasm for science whilst embedding this procedural knowledge into the long-term memory. We use the Rising Stars scheme of work to support our planning.
Implementation	How is the science curriculum in the school organised? Science follows a clear and comprehensive scheme of work aligned with the National Curriculum and EYFS framework. This begins in our Nursery class and follows children through to year 6. The scheme is adventurous and provides the children the opportunity to achieve our school values. Respect, Adventure, Determination, Achievement and Resilience. Our whole school approach to the teaching and learning of science involves the following; • At West Town Lane Academy, Science is taught in half termly units which are based on the National Curriculum <i>Programmes of Study</i>. Lessons are then delivered weekly. Where appropriate, and beneficial to learning, links are made between Science and other curriculum areas and enquiries. Wherever possible, links are made to the local environment and our community. The sequence of lessons for each unit carefully plans for progression and depth, as well as opportunities for revisiting previously gained knowledge and applying previously taught skills. Each lesson begins with a recap of prior learning. • Planning involves teachers creating engaging lessons, involving high-quality resources to support the understanding of conceptual knowledge. • We have carefully selected leading Scientists within various fields or occupations and children will study one of these each new term, to bring their learning to life and give them context to how their Scientific learning may be used in the wider world. • Teachers use precise questioning in class to monitor conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning to ensure all children make progress. • The <i>Working Scientifically</i> skills are embedded into lessons to ensure these skills are being developed and new vocabulary and challenging concepts are introduced through direct teaching.

	• Teachers use practical demonstrations to show the children how to use scientific equipment and the various <i>Working Scientifically</i> skills. • Teachers whenever possible take advantage of our wonderful outdoor space for deeper learning opportunities to help the children develop their understanding of their surroundings. • We offer a wide range of extra-curricular activities, visits and visitors to complement our broad and balanced curriculum. These are purposeful and link with the knowledge being taught in class.
Impact	What is the impact of the Science curriculum at the school? We measure the impact of our curriculum through the following methods: • A reflection on standards achieved against the planned outcomes (skills progression maps) • Use of effective formative assessment • Pupil voice • Retrieval questioning and activities to track pupil progress • Evidence of high-quality work in books • Evidence of high-quality planning • Teachers use Insight to monitor progress and identify target pupils
Provision for bottom 20%	• Key vocabulary printed out for children to refer to • Support sheets given to scaffold writing tasks • Practical work to ensure concrete examples for children • Mixed ability pairs/trios/ groups for practical work or discussion tasks • Workshops and visitors to ensure tangible examples of how science is relevant in the world

Science curriculum progression Year 1

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Boost	Who Am I? (NC-Animals, including humans) Science Enquiry: What Am I?	Polar Places (NC-Animals, including humans; Everyday materials)	Holiday (NC-Animals, including humans; Everyday materials)	Celebrations (NC-Animals, including humans)	(Seasonal changes)	On Safari AND Plants and animals where we live (NC-Living things and their habitats)
Influential figure/occupation	Working in a hospital and Linda Buck	Verena Mohaut and her polar patrols	Veterinarian Jane Goodall	Charles Macintosh	Working as a weather reporter/meteorologist and George James Symons	Horticulture and botanist Carl Linnaeus
Working Scientifically	- Asking simple questions and recognising that they can be answered in different ways - Observing closely, using simple equipment Performing simple tests - Identifying and classifying - Using their observations and ideas to suggest answers to questions - Gathering and recording data to help in answering questions					
Skills & knowledge	Children will learn: <i>About the basic parts of the human body and explore their five senses.</i>	Children will learn: <i>Children plan an expedition to the polar regions, learning about properties of different materials, and a range of living things in the polar regions.</i>	Children will learn: <i>Children will plan what they need to pack for a holiday, and explore the different animals they might encounter at the seaside and the human impact on the environment.</i>	Children will learn: <i>Children use the theme of celebrations to explore a number of curriculum areas, including everyday materials, plants and light.</i>	Children will learn: <i>Children will observe, compare and discuss changes in the weather and the seasons.</i>	Children will learn: <i>To explore invertebrates and other plants and animals in the local area.</i>
	Identify, name, draw and label the basic parts of the human body. Say which part of the body is associated with each sense. The enquiry focus this term is Science. Children will learn about their senses, healthy living and the impact of exercise on their bodies. Children learn what the body is made up of (muscles, bones) and how the body grows (comparing children and adults).	Identify and name a variety of animals including fish, amphibians, reptiles, birds and mammals. Identify and name common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals. Describe the simple properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple properties.	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 or omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	Say which part of the body is associated with each sense. 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. Identify and describe the basic structure of a variety of	Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies.	<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 (including humans)</u> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.

			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.	common plants, including trees.		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).
Vocabulary	- human - Sight, hearing, taste, touch, smell - eyes - backbone - tongue - ears - head	- adventurer - Antarctic - habitat - carnivore - herbivore - omnivore - freeze - weather	- marine biologist - beach - sunscreen - protect - turtles - limpet - pollution	- light - illuminate - shadow - sound - translucent - transparent - opaque - reflect	- spring - summer - autumn - winter - rainy - sunny - cold - rainbow	<u>On Safari:</u> - insect - thorax - antennae - vertebrate - invertebrate - food chain - exoskeleton <u>Plants and animals:</u> - amphibian - mammal - reptile - stem - leaves - buds - tree
Special events/trips/visitors	Nurse visit			Science week		WSM trip
Cross-curricular opportunities	English: Funny Bones text (T4W) English: Senses walk D&T: Planning and making a healthy meal (wrap) Maths: Data collection-favourite food/eye colour etc	Maths: Temperature – use comparative language Geography: Map skills, cardinal directions		D&T: Designing and making a musical instrument	D&T: Weather vane English: Weather report Computing: Green screen weather report Maths: Rain collection and comparative measure	
	English: Children should use scientific vocabulary when observing, discussing, reviewing and recording. Maths: Children should apply their Mathematics skills when observing, discussing, reviewing and recording.					

Science curriculum progression Year 2

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Boost	Squash, bend, twist and stretch (NC-Uses of everyday materials)	Material monster (NC-Uses of everyday materials)	Healthy me (NC-Animals, including humans)	Our local environment (NC-Living Things and their Habitats, Plants)	Young gardeners (NC-Plants)	Little master chefs (NC-Animals, including humans) Science Enquiry: What can we do to look after ourselves and our planet?
Influential figure	Charles Macintosh	Working as an engineer or designer	Joe Wicks and his work on health, fitness and eating well	David Attenborough	Horticulture and Sir Tim Smit (Eden Project)	Greta Thunberg
Working Scientifically	- Asking simple questions and recognising that they can be answered in different ways - Observing closely, using simple equipment Performing simple tests					

	- Identifying and classifying - Using their observations and ideas to suggest answers to questions - Gathering and recording data to help in answering questions					
Skills & knowledge	Children will learn: Children explore how the shapes of objects can be changed by squashing, bending, twisting and stretching. In doing this they raise questions, perform simple tests, and gather and record data.	Children will learn: This unit explores the properties and uses of everyday materials, set in the context of meeting, talking to and feeding the Materials Monster.	Children will learn: In this unit, children explore the importance of exercise, diet and good hygiene, building on the Who am I? unit in Year 1.	Children will learn: This unit brings together study of living things, habitats and growing plants and is strongly focused on outdoor learning and investigations.	Children will learn: This unit brings together study of living things, habitats and growing plants and is strongly focused on outdoor learning and investigations.	Children will learn: This unit explores food, including making healthy food choices, and cooking various different foods The enquiry focus this term is Science. Children will learn about strategies to enable individuals to look after our planet. E.g., recycling, energy saving etc and the significant individuals who contribute to this movement (Greta Thunberg).
	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	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 micro-habitats 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.	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.	Find out about and describe the basic needs of humans for survival (water, food and air). Describe the importance for humans of eating the right amounts of different types of food, and hygiene. Observe and describe how seeds and bulbs grow into mature plants. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
Special events/trips/visitors			Forest trip	Science week		

Science curriculum progression Year 3

	Term 1	Term 2	Term 3	Term 4	Term 5 and 6
Boost	Rocks, soils and fossils (NC - Rocks)	Food and our bodies (NC-Animals, including humans)	Light and shadows (NC- Light)	How does your garden grow (NC-Plants)	Forces and Magnets (NC-Forces and magnets)
Influential figure	Mary Anning Geologists (link to Cheddar Gorge)	Marie M Daly and her work on foods and the heart	Thomas Edison and Nick Holonyak Jr	Eva Cane and her study of Bees	Isaac Newton
Working Scientifically	- Asking relevant questions and using different types of scientific enquiries to answer them - Setting up simple practical enquiries, comparative and fair tests - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions				

	- Identifying differences, similarities or changes related to simple scientific ideas and processes - Using straightforward scientific evidence to answer questions or to support their findings				
Skills & knowledge	Children will learn: Children explore the properties and uses of rocks, the rock family, soils and finally fossils.	Children will learn: Children look at where animals get food from and why it is important, and skeletons, muscles and joints.	Children will learn: Children learn about the wonders of light, including reflections and shadows.	Children will learn: Children learn about the different parts of plants, what plants need to live, water transportation in plants and pollination.	Children will learn: Children explore magnets and their uses, and what makes magnetic poles special, along with the idea that some forces such as magnetic force can act without contact – unlike pushes and pulls, which require direct contact.
	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.	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..	Recognise that we 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 the eyes. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the sizes of shadows change.	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.	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.
Vocabulary	- fossil - paleontology - granite - marble - limestone - magma - sedimentary - igneous	- nutrients - protein - carbohydrate - joint - muscle - exoskeleton - biceps - triceps	- light source - shadow - shiny - translucent - transparent - reflect	- anther - carpel - filament - ovary - ovule - pollen - sepal - stamen - stigma - style	- repel - attract - pole - magnetic - prediction - friction - Pushes - Pull
Special events/trips/ visitors	Stone Henge trip	Student Doctor visit		Science week	
Cross-curricular opportunities	History: Enquiry focus on Stone Age to iron Age, including a study of and visit to Stone Henge.	DT: Design and make: Sewing - a Kit bag for PE English: Quest / journey story about being kidnappes. Discussion text about zoos	History: Ancient Greece and the influence of Theatre. How does this link with light and shadow? Art: Creating theatre masks.		Present your results in tables and charts. Use Ted Hughes' The Iron Man (novel and film) as

	English: Read non-fiction texts about rocks and soils. Comprehend key facts.		Maths: The relationship between length and different shadows.		starting points for sessions. Use non-fiction to research information on magnets. Use key vocabulary.
	English: Children should use scientific vocabulary when observing, discussing, reviewing and recording. Maths: Children should apply their Mathematics skills when observing, discussing, reviewing and recording.				

Science curriculum progression Year 4

	Term 1	Term 2	Term 3 & 4	Term 5	Term 6
Boost	What's that sound? (NC-Sound)	Power it up (NC-Electricity)	Looking at states (NC-States of matter)	Living things (NC-Living things and their habitats)	Teeth and eating (NC-Humans and other animals)
Influential figure	Working in the music industry. Why is it important to understand sound? Alexander Graham Bell	Thomas Edison's lightbulb	Lord Kelvin	Rachel Carson and her work on harmful chemicals in our Oceans	Working in dentistry
Working Scientifically	- Asking relevant questions and using different types of scientific enquiries to answer them - Setting up simple practical enquiries, comparative and fair tests - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions - Identifying differences, similarities or changes related to simple scientific ideas and processes - Using straightforward scientific evidence to answer questions or to support their findings				
Skills & knowledge	Children will learn: <i>Children will already know many things about sound, even without any formal teaching of it. They will encounter how sounds are made on a variety of instruments and how they can be changed in volume, pitch and over distance. They will explore making sounds on a range of objects that aren't instruments, in order to investigate how sounds are created to make music.</i>	Children will learn: <i>Children revisit some uses of electricity and the importance of safety before constructing simple circuits, and understanding how to change a circuit by changing its components.</i>	Children will learn: <i>Children will compare and group materials together, according to whether they are solids, liquids or gases. They will observe that some materials change state when heated or cooled, and they will identify the part played by evaporation and condensation in the water cycle.</i>	Children will learn: <i>To recognise that living things can be grouped in a variety of ways. They explore and use keys to identify and name a variety of living things. Finally, they look at how changes to habitats can pose dangers to living things.</i>	Children will learn: <i>Children learn about digestion and different types of teeth, before moving on to explore deadly predators and their prey, in their exploration of food chains. They work scientifically throughout, using enquiry, practical experiments and hands-on research to answer questions and investigate how we eat, why we eat and what we eat.</i>

	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.	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.	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.	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.	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.
Vocabulary	• pitch • sound source • vibration • voolume	• battery • bulb • insulator • terminals • conductor • mains	• liquid • boiling point • melting point • freezing point • condensing • evaporation • thermometer	• amphibian • bird • mammal • fish • reptile • insect • vertebrate • invertebrate • flowering plant	• canine • molar • incisor • oesophagus • stomach • Small intestine • Large intestine • enamel
Special events/trips/visitors			Science week		Dentist visit
Cross-curricular opportunities					DT: Designing and making a Spanish dish. Maths: Statistics-data collection. Positional language-teeth brushing instructions.

	English: Children should use scientific vocabulary when observing, discussing, reviewing and recording. Maths: Children should apply their Mathematics skills when observing, discussing, reviewing and recording.
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Science curriculum progression Year 5

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
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Rising Stars Unit	Material World (NC-Properties and changes of Materials)	Amazing changes (NC-Properties and changes of Materials)	Let's get moving (NC-Forces)	Out of this world (NC-Earth and space)	Circle of life (NC-All living things and their habitats)	Growing up and growing old (NC-Animals, including humans)
Influential figure	Stephanie Kwolek	Heston Blumethal and how science underpins his cookery	Professor Brian Cox	Stephen Hawking & Mae Carol Jemison's flight into space	Becoming a Zoologist and David Attenborough	Marie Maynard Daly and Alexander Fleming
Working Scientifically	- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Using test results to make predictions to set up further comparative and fair tests - Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations - Identifying scientific evidence that has been used to support or refute ideas or arguments					
Skills & knowledge	Children will learn: <i>The children learn about materials and how they change. First they test properties of materials before looking at how materials dissolve, what a solution is and evaporation. Finally, children compare reversible and irreversible changes.</i>	Children will learn: <i>The children learn about materials, how they change and which changes are reversible and irreversible. The unit concludes by looking at how these properties are applied in the real world.</i>	Children will learn: About forces and machines. They start with the force of gravity then study friction forces, including air and water resistance, before investigating how simple machines work.	Children will learn: <i>Starting with the Solar System, children look next at how ideas about space have changed over time before they explore what causes us to experience night and day on Earth.</i>	Children will learn: <i>Children look at the life cycles of various species including mammals, amphibians, fish and birds. They also look at and describe the life process of reproduction in plants and animals.</i>	Children will learn: <i>Children look at and describe the changes as humans develop to old age. Pupils draw a timeline to indicate stages in the growth and development of humans and learn about the changes experienced in puberty.</i>
	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.	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.	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.	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.	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.	Describe the changes as humans develop to old age

Science curriculum progression Year 6

	Term 1	Term 2	Term 3	Term 4	Term 5 & 6
Boost	Healthy Bodies (NC-Animals, including humans)	Classifying living things (NC-Living things and their habitats)	Electricity (NC-Electricity)	Light (NC-Light)	Evolution (NC-Evolution and inheritance) Science Enquiry: How do animals and plants adapt to suit their environment?
Influential figure	Charles R Drew and his work on blood banks during WWII	Carl Linnaeus' work on classification of organisms	Working as an electrician	Isaac Newton and his work on the prism effect	Charles Darwin and the theory of evolution
Working Scientifically	- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Using test results to make predictions to set up further comparative and fair tests - Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations - Identifying scientific evidence that has been used to support or refute ideas or arguments				
Skills & knowledge	Children will learn: Children build on learning from Years 3 and 4 about the main body parts and internal organs. It considers life processes that are internal to the body, such as the circulatory system. The impact of lifestyle on bodies, particularly of humans, is also considered. Scientists are continually finding out what is good and bad for us, and their ideas do change as more research is carried out.	Children will learn: Children build on their learning about grouping living things in Year 4 by looking at the classification system in more detail and developing their knowledge by looking at fungi and bacteria. Children also look at the work of Carl Linnaeus, the scientist who first made important the function of naming and classifying to 'identify' organisms.	Children will learn: This unit builds on the Year 4 work on electricity, taking it into the scientific use of symbols for components in a circuit, as well as considering the effect in more detail of changing components in a circuit.	Children will learn: Children will learn the concept of light travelling in straight lines. It starts by looking at beams of light and how light travels to enable children to understand how we see things. This understanding is then applied to the production of shadows and starts to look at how light is reflected. The unit then takes the learning into the realm of coloured light and rainbows, using scientific skills to raise and answer questions.	Children will learn: Building on what they learned about fossils in Year 3, children find out more about how living things have changed over time. They are introduced to the idea that characteristics are passed from parent to their offspring, but that they are not exactly the same. They should also appreciate that variation over time can make animals more or less likely to survive in particular environments (adaptation). Children look at evolution and Charles' Darwin's theory of natural selection, as well as palaeontologist Mary Anning's work with fossils.
	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 how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.	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.	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.	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

	Describe the ways in which nutrients and water are transported within animals, including humans.	Give reasons for classifying plants and animals based on specific characteristics.	Use recognised symbols when representing a simple circuit in a diagram.	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.	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.
Special events/trips/visitors				Gorge Walking Science week	
Vocabulary	• addiction • Blood • Exercise • Lungs • Heart • Oxygen • Pulse • Respiration	• amphibian • bacteria • bird • fauna • fermentation • fish • flora • genus • insect • invertebrate • mammal • microbe • organisms • reptile • species • vertebrate	• battery • blow • cell • complete • component • electrons • electricity • filament • fuse	• cornea • lens • pupil • rainbow • reflection • symmetry	• adaptation: • dinosaur: • evolution: • fossil: • inherited • natural selection • prehistoric • variety
Cross-curricular opportunities					History: Mary Anning, Charles Darwin, dinosaurs Geography: Work with fossils PSHE: Changing me Art: Accurate observational drawings of animals
English: Children should use scientific vocabulary when observing, discussing, reviewing and recording. Maths: Children should apply their Mathematics skills when observing, discussing, reviewing and recording.					