

SCIENCE WHOLE SCHOOL OVERVIEW



Love, Care, Share...
Love learning as friends;
Care for our community as
neighbours;
Share our faith in Jesus as disciples.



St. Ethelbert's RCP

Whole School Overview for Science

SCIENCE STATEMENT OF INTENT

At St. Ethelbert's Primary School, we aim to give our children a strong understanding of God's world, whilst developing the subject-specific knowledge and skills to help them to think scientifically; to gain an understanding of scientific processes and an understanding of the uses and implications of Science today and for the future. Our science curriculum is progressive and inclusive for ALL children.

Scientific enquiry skills are developed throughout each topic and these are re-examined and embedded throughout their time at school. For example, Light is taught in Year 3 and studied again in further detail in Year 6. This model allows children to build upon their prior knowledge whilst increasing their enthusiasm and confidence for the topics, embedding this information into their long-term memory.

All children are encouraged to develop and use a range of skills including reading, observations, planning and investigations, as well as being encouraged to question the world around them and become independent learners in exploring possible answers for their scientific-based questions.

Subject-specific vocabulary for each topic is taught, built up and reinforced throughout the Key Stages. Effective questioning to explore ideas is encouraged, with enquiries focussing on the key features of scientific enquiry so that pupils learn to use a variety of approaches to answer scientific questions.

PREVIOUSLY COVERED IN EYFS

WORKING SCIENTIFICALLY

- To feel confident to answer simple questions about observable properties of objects and people, animals and plants around them.
- To compare objects in their environment and talk about similarities and differences.
- To ask questions about the world around them, and seek to find their own answers.

KEY KNOWLEDGE & SKILLS

- To know what a plant and a flower is, where you may see them and describe different plants and flowers.
- To know what an animal is, name different animals and know the names of body parts of humans and different animals they have experience of.
- To recognise that different everyday objects are made from different materials and to describe how they look and feel.

- To know about different types of weather and observe seasonal changes in trees and plants.

KS1 National Curriculum: Working Scientifically

Pupils should be taught to:

- ask simple questions and recognising that they can be answered in different ways
- observe closely, using simple equipment
- perform simple tests
- identify and classify
- use their observations and ideas to suggest answers to questions
- gather and record data to help in answering questions

YEAR 1

Autumn Term	Spring Term	Summer Term
UNIT: Animals, Including Humans	UNIT: Plants	UNIT: Materials
KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:
In this unit, pupils name some parts of the human body. They learn about the senses and which part of the body is associated with each sense. They carry out an investigation which challenges each sensory area. Pupils learn the names of some common animals and can identify animals that are carnivores, herbivores and omnivores.	In this unit, pupils will label a basic plant. They investigate which plants grow in which places and why. They observe, sketch and collect a variety of plants and flowers with adult supervision. Pupils will have an opportunity to investigate the following questions: <ul style="list-style-type: none"> • Which tree has the biggest leaves? • How do my plants change each week? 	In this unit, pupils observe a variety of items made using everyday materials and begin to be able to distinguish between object and material. The pupils are able to see and feel a variety of everyday materials and choose words to describe their properties. Pupils will sort a range of objects and materials according to their properties.
KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE
<ul style="list-style-type: none"> • Know how to draw and label some more tricky body parts – chin, neck, shoulders, elbows, knees, chest • Know that I use my eyes to see, my ears to hear, my tongue to taste, my nose to smell and my ears to hear • Know some common animals – shark, lizard, duck, goat, newt • Know an animal that eats meat is called a carnivore (shark), an animal that eats plants is called a herbivore (goat) and an animal that 	<ul style="list-style-type: none"> • Know that a seed or bulb needs to be planted in soil to grow. • Know that sunflowers and pansies are garden plants and that dandelions and nettles are wild plants. • Know that deciduous trees lose their leaves in winter (oak and rowan) and evergreen trees keep their leaves all year round (holly and conifer) 	<ul style="list-style-type: none"> • Know the names of everyday materials: wood, plastic, glass, metal, water & rock • Name different objects made using the same material: door, water bottle, window, radiator, altar • Know some of the physical properties of everyday materials: hard, soft, smooth, rough, transparent & opaque • Know that materials can be sorted by their physical properties.

eats both meat and plants is called an omnivore (duck)

- Know the basic structure of common plants and trees – seed/bulb, root, stem, leaf, flower & petal

Throughout the year

UNIT: Seasonal Changes

KEY KNOWLEDGE & SKILLS:

In this unit, which will run throughout the year, pupils will observe changes across the seasons in the different contexts. They will:

- Observe how the day length varies from Autumn, through Winter and Spring and into Summer.
- Observe and describe how the weather changes in each season
- Collect and record data about the weather in each season.
- Use exploratory walks to observe changes in nature between the seasons, including temperature.
- Pupils will learn how to stay safe in the sun by avoiding exposure, applying sun cream and covering up.

KEY STICKY KNOWLEDGE

- Know that the weather starts to get warmer in Spring and that Summer is the hottest season. In Autumn, the weather starts to get colder and Winter is the coldest season.
- Know that in Winter, night time is longer and day time is shorter and in Summer, night time is shorter and day time is longer.
- Know that plants grow faster in Spring and Summer and slower in Autumn and Winter.
- Know hedgehogs hibernate, birds migrate and Exmoor ponies grow very thick coats to help them to survive in the Winter.
- Know that it is not safe to look at the sun – even when wearing sunglasses.

Year 2

Autumn Term

Spring Term

Summer Term

UNIT: Animals Including Humans

UNIT: Living Things and Their Habitats

UNIT: Plants

KEY KNOWLEDGE & SKILLS:

KEY KNOWLEDGE & SKILLS:

KEY KNOWLEDGE & SKILLS:

In this unit, pupils learn that animals and humans have babies that grow into adults. They are visited in class by a baby and a dog to discuss life cycles and to experience first-hand what basic needs each has.

In this unit, pupils will learn which objects are living, dead or have never been alive. They study world, local and microhabitats and how some animals have become adapted to the habitat where they live. Pupils look at where an animal's food comes from, in the context of food chains, and how this source links into a variety of different food chains

In this unit, pupils will observe plants and record what they see. They will have the opportunity to plant seeds/bulbs, care for them and observe how they grow. Pupils will study the lifecycle of a flower, using the language: seed, germinate, shoot, stem, leaf, flower, die and disperse. Through experimentation, pupils will investigate the things plants need to grow and be healthy.

KEY STICKY KNOWLEDGE

KEY STICKY KNOWLEDGE

KEY STICKY KNOWLEDGE

- Animals, including humans, have offspring that grow into adults.
- Some animals give birth to live young (humans and dogs) and some lay eggs (birds and crocodiles).
- Animals, including humans, need air, food and water to survive.
- To be healthy, humans need to eat lots of different of foods, have lots of exercise and to keep clean washing.
- Humans need shelter and love to grow into happy adults.

- Know living things can do all 7 life processes. Dead things can no longer do all 7 life processes and things that have never lived, have never been able to do all 7 life processes.
- Plants make their own food using water and sunlight
- Animals get their food from plants and other animals.
- A habitat is the natural environment in which an animal or plant lives. A microhabitat is a very small habitat.
- Know that some animals (fish and frogs) and some plants (reeds and water lilies) live in a habitat, like a river.
- Know some animals (woodlice and worms) live in a microhabitat, like under a stone.
- Know that a food chain always starts with a plant and shows where an animal gets its food from.

- The parts of a plant are: root, stem, leaves and flower.
- Seeds and bulbs need water and a suitable temperature to germinate.
- Plants get water from the soil using their roots.
- Plants make their own food in their leaves using sunlight and water.
- A seed germinates to produce a shoot, then a stem, leaves and a flower. The flower produces seeds to grow a new plant.

UNIT: Uses of everyday Materials

KEY KNOWLEDGE & SKILLS:

In this unit, pupils learn to identify, classify and record the uses of everyday materials. They find out how some solid objects can change shape by squashing, bending, twisting and stretching, and how these properties affect their suitability to perform certain jobs Pupils will discover that the fact that some objects can change shape, makes them suitable for recycling. The pupils will find out that John McAdam invented a strong material that is very hardwearing and is used to surface our roads.

KEY STICKY KNOWLEDGE

- Some materials can be used for making lots of different things – metal for coins, chair legs and cars.

- Some objects can be made from lots of different materials – spoons can be made from metal, wood or plastic
- Some materials cannot be used to make some objects – paper for cups, glass for tools.
- Some objects can change shape by bending (pipe cleaner), twisting (drinks can), squashing (playdough) and stretching (elastic band).
- John McAdam invented a material called tarmac, which is used for roads and pavements.

Lower KS2 National Curriculum: Working Scientifically

Pupils should be taught to:

- 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.

Year 3

Autumn Term	Spring Term	Summer Term
UNIT: Rocks	UNIT: Animals Including Humans	UNIT: Light and Dark
KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:
In this unit, pupils will compare and group different kinds of rocks, making systematic observations based on their appearance, including the difference between natural and man-made rocks. They will study the work of palaeontologist, Mary Anning, and understand the process of fossil formation. They will make observations of soil, recognising that it is made from rocks and organic matter. They	In this unit, pupils will identify that humans and animals cannot make their own food and will understand that they need the right amount and type of nutrition to be healthy. They will learn the consequences of eating the wrong amount of nutrients. The pupils will observe how different animals including humans have different types of skeletons	In this unit, pupils will take part in a 'feely bag' investigation to discover that we need light in order to see. They will play mirror games to find out that light is reflected from some surfaces more than others. The pupils will design a pair of sunglasses or a sun hat that would protect them from the sun's harmful rays. They will investigate how shadows

<p>will be given the opportunity to investigate the permeability of different soils, reporting and presenting their findings to the class.</p>	<p>and will identify how different parts of the skeleton have different roles. They will have the opportunity to set simple enquiries to investigate how pairs of muscles work and how they contribute to movement.</p>	<p>are formed and can change size depending upon the distance of the object from the light source.</p>
<p>KEY STICKY KNOWLEDGE</p>	<p>KEY STICKY KNOWLEDGE</p>	<p>KEY STICKY KNOWLEDGE</p>
<ul style="list-style-type: none"> • Know the names of 3 types of rocks and identify their features – igneous (formed when molten lava cools), sedimentary (formed by layer upon layer of rock that's has been pressed together), metamorphic (formed when either igneous or sedimentary rock has been heated and cooled by magma) • Know that bones are any piece of the hard whitish tissue that makes up the skeleton in animals including humans and fossils are the preserved remains or traces of a dead organism. • Know that a palaeontologist studies fossils. • Know that Mary Anning discovered the first fossils of an ichthyosaur, a plesiosaur and a pterosaur. • Know that the 4 processes of soil formation are: additions, losses, translocations and transformations 	<ul style="list-style-type: none"> • Know that animals obtain food from plants and other animals and plants make their own food. • Know that there are 7 types of nutrient and 5 food groups. Most foods contain more than 1 nutrient. • Know the names of 3 different types of skeleton - endoskeleton, exoskeleton, hydrostatic skeleton • Know the names of the main bones in the body. • Know that muscles allow movement by working in pairs. As one contracts, the other relaxes. 	<ul style="list-style-type: none"> • Know that dark is caused by the absence of light. • Know that the sun, a candle and a torch are sources of light. • Know that light is reflected from surfaces and that mirrors are good reflectors. • Know that light from the sun can be dangerous and how to protect ourselves. • Know that shadows are formed when light is blocked by a solid object and the closer the object to the light source, the bigger the shadow.
<p>UNIT: Forces and Magnets</p>	<p>UNIT: Plants</p>	
<p>KEY KNOWLEDGE & SKILLS:</p>	<p>KEY KNOWLEDGE & SKILLS:</p>	
<p>In this unit, pupils will notice that some forces need to make contact between two objects and when there is a push or a pull acting on an object. They will investigate the effects of friction on the speed of a toy car. They will investigate the action of magnetic forces on different materials and compare and groups materials according to their magnetic properties. They will make a game to help understand that magnets have two poles and to observe how some attract or repel each other.</p>	<p>In this unit, pupils will be given the opportunity to observe flowering plants and will identify the different parts. They will set up an experiment to discover the requirements of plants for life and growth and record their findings over time in charts and tables. They will investigate how water is transported in plants and explore the part that flowers play in fertilisation and pollination. They will order and describe the stages of the life cycle of a flowering plant.</p>	

KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE	
<ul style="list-style-type: none"> • Know whether a force is a push or a pull. • Know that friction is a force that holds back the movement of an object. • Know that there are different types of magnet- bar magnet, horseshoe magnet and ring magnet. • Know that magnets attract some materials (iron, nickel and cobalt) and not others-non-magnetic- (wood, plastic and aluminium). • Know that a compass always points north-south. 	<ul style="list-style-type: none"> • Know the names and functions of the different parts of a flowering plant - roots, stem/trunk, leaves and flowers. • Know that plants need air, water, warmth, light and nutrients to grow well. • Know that the function of the stem is to support the plant and to transport water. • Name the different parts of a flower: petals, stamens, stigma, style & ovary. • Know and order the stages in the life cycle of a flowering plant: germination-pollination-seed formation-seed dispersal. 	

Year 4

Autumn Term	Spring Term	Summer Term
UNIT: Animals Including Humans	UNIT: Electricity	UNIT: Living Things and their Habitats
KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:
In this unit, pupils will learn the names of the basic parts and simple functions of the digestive system. They will identify the different types of teeth in humans and their functions. They will be given the opportunity to investigate the causes and effects of tooth decay.	In this unit, pupils will use scientific evidence to learn about how and why electricity occurs. They will distinguish between appliances that use and do not use electricity, the different types of electricity and identify how to stay safe when using electricity. By visualising and testing circuits to see if the circuit is complete, pupils will identify whether or not a lamp will light. They will test different materials as part of a circuit to see whether or not they conduct electricity and create circuits containing a switch, reporting on their findings using oral and written methods.	In this unit, pupils will use a range of methods to sort and group a range of living things and sort vertebrates by using classification keys and observing similarities and differences. Pupils will use classification keys to identify invertebrates then create their own classification key and show characteristics in a table. Pupils will take part in a nature walk to identify changes and dangers in the local habitat and present their findings on a map. They will then use the internet and information books to find out about environmental dangers to endangered species.
KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE
<ul style="list-style-type: none"> • Know that the mouth, tongue, teeth, oesophagus, stomach and small and large intestine are involved in the human digestive system. 	<ul style="list-style-type: none"> • Know which objects are conductors (iron and steel) and which are insulators (plastic and wood). • Identify machines which need electricity to work – phone/tablet and microwave. 	<ul style="list-style-type: none"> • Know how to group organisms in different ways (plants into flowering & non-flowering and animals into vertebrates and invertebrates) • Know that a vertebrate has a spine and an invertebrate doesn't

<ul style="list-style-type: none"> • Know that incisors bite and cut food, canines tear and rip food, premolars hold and crush food and molars grind food. • Know that a food chain starts with a plant and shows the transfer of energy between organisms. • Know a food chain may contain a producer (plant), prey (caterpillar) and predator (bird) 	<ul style="list-style-type: none"> • Construct a simple circuit and draw it, labelling cells, wires, bulbs, switches and buzzers. • Know that, in a circuit, a lamp needs to be part of a complete loop with a battery for it to light. • Know that an electrical switch works by opening and closing a circuit. 	<ul style="list-style-type: none"> • Know how to group vertebrates into mammal, fish, reptile, bird and amphibian. • Know and use a classification key to sort animals according to their characteristics (omnivore/carnivore/herbivore, number of legs). • Know how a changing environment can be dangerous to animals – deforestation for orang-utans.
UNIT: Sound	UNIT: States of Matter	
KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:	
<p>In this unit, pupils will identify how sounds are made by identifying and explaining sound sources around school. They will perform a dramatisation of how sound travels to identify how sounds are made, find patterns between volume and strength of vibration and recognise that sound travels through the air to the ear. They will use and make musical instruments to explore how high and low sounds are created and explore how they can change pitch. Making string telephones will help them to investigate how sounds change over distance.</p>	<p>In this unit, pupils will compare and group materials together, according to whether they are solids, liquids or gases. They will investigate how some materials change state when they are heated or cooled. Pupils will describe the different stages of the water cycle, including evaporation and condensation.</p>	
KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE	
<ul style="list-style-type: none"> • Know that sounds are caused by vibrations and louder sounds have bigger vibrations. • Know that sound travels through solids, liquids and gases as a wave, vibrating the particles as it travels. • Know that the pitch of a sound is how high or low it is and the volume of a sound is how loud or quiet it is. • Know that a louder sound is made from stronger vibrations • Know that sounds get fainter (quieter) as the distance from the source increases 	<ul style="list-style-type: none"> • Know how to group substances according to whether they are a solid, liquid or gas. • Know that some materials change state when they are heated or cooled (water changes to a gas when heated and a solid when cooled). • Know the freezing point of water is 0°C and the melting point of wax is 50°C • Know that the water cycle involves evaporation and condensation • Know that the rate of evaporation gets faster when the temperature increases. 	

Upper KS2 National Curriculum: Working Scientifically

Pupils should be taught to:

- 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 a 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

Year 5

Autumn Term	Spring Term	Summer Term
UNIT: Properties and Changes of Materials	UNIT: Animals Including Humans	UNIT: Forces
KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:
<p>In this unit, pupils will compare and group together everyday materials based upon their properties, including hardness, transparency and response to magnets. They will use comparative and fair tests for uses of materials including metals, wood and plastic, including their thermal conductivity and insulation abilities, giving reasons for their findings. They will investigate which of the materials are the best electrical conductors by seeing which bulb shines brightest in a circuit.</p> <p>Pupils will be given the opportunity to use their knowledge of solids, liquids and gases to decide how mixtures might be separated by sieving, filtering and evaporating. They will also demonstrate that dissolving, mixing and changes of state are reversible changes. They will recognise that some changes result in a new material forming, which is not usually reversible. Examples of this are burning and the effect of acid on bicarbonate of soda.</p>	<p>In this unit, pupils will create a timeline to show the growth and development of humans to old age. They will use data, in the form of a line graph, to record, the growth of babies' height/weight during their first year, collecting data from a recognised source. Pupils will compare the changes between boys and girls during puberty and understand the changes that take place in old age. They will compare gestation periods for animals with their life expectancy, suggesting reasons for their findings.</p>	<p>In this unit, pupils will explain that unsupported objects fall towards the earth due to the force of gravity and will use Newton metres to measure the force of gravity pulling on objects. Pupils will be given the opportunity to identify the effects of air resistance (by investigating the best parachute to slow a person down), water resistance (by creating and racing streamlined boats) and friction (by investigating brakes). They will recognise that some mechanisms allow a smaller force to have a greater effect by exploring and designing a simple mechanism.</p>

KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE
<ul style="list-style-type: none"> • Know everyday materials and describe their properties using hardness, transparency and response to magnets. • Know which everyday materials are thermal and electrical conductors and insulators. • Know which everyday materials are soluble or insoluble in water. • Know how to separate mixtures. • Know some changes that are irreversible. 	<ul style="list-style-type: none"> • Know the stages of human development. • Know and understand of how babies grow in height. • Know the main changes that occur during puberty. • Know the main changes that take place in old age. • Know how to compare and present data using line graphs 	<ul style="list-style-type: none"> • Know that forces are pushes and pulls. • Know that gravity is a force that pulls objects down. • Know about Isaac Newton's discoveries. • Know about the effects of friction, including air and water resistance, on moving objects. • Know that different mechanisms, such as levers, pulleys and gears, allow a smaller force to have a greater effect.
UNIT: Living Things and their Habitats	UNIT: Earth and Space	
KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:	
<p>In this unit, pupils will learn the process of pollination (sexual reproduction) in plants and that some plants reproduce asexually. They will explore the life cycle and the process of sexual reproduction in a mammal. They will compare and describe the differences in the life cycles of an amphibian, a mammal, a bird and an amphibian.</p>	<p>In this unit, pupils will learn how scientific evidence has been used to show that the Sun, Earth and Moon are spherical. They will learn the order of the planets and how they move in the solar system. Pupils will examine scientific theories which describe how the planets move relative to the sun. They will examine why the sun appears to move and use the idea of the Earth's rotation to explain day and night in different places on the Earth. They will also learn how the moon orbits the Earth and the cycle it follows.</p>	
KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE	
<ul style="list-style-type: none"> • Know how a plant is pollinated • Know that some plants reproduce asexually. • Know the stages in the process of sexual reproduction. • Know one difference between sexual and asexual reproduction. • Know the stages of the life cycles of mammals, birds, insects and amphibians. 	<ul style="list-style-type: none"> • Know the names of the planets in the solar system, with support. • Know how the planets orbit the Sun. • Know how night and day occur. • Know that night and day occur at different times in different places on Earth. • Know that the Moon orbits the Earth, not the Sun, and its cycle. 	
Year 6		
Autumn Term	Spring Term	Summer Term

UNIT: Living Things and their Habitats	UNIT: Animals including Humans	UNIT: Light
KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:
In this unit, pupils will sort and group animals based on their features, using examples as a guide. They will learn how Carl Linnaeus developed a classification system and use it to animals into given groups based on certain characteristics. They will design a creature with a specific set of characteristics, using prompts and a word grid. Pupils will learn the names of types of microorganism and set up an investigation into harmful microorganisms. They will then create a microorganism using given characteristics.	In this unit, pupils will be given the opportunity to identify the parts of the circulatory system and explain the main functions of the heart, lungs and blood vessels. They will learn how the digestive system breaks down nutrients and how drugs and alcohol can impact negatively on the body. Pupils will explain what constitutes a healthy lifestyle, take accurate measures of the pulse rate, record the results and write a report which includes a conclusion.	In this unit, pupils will learn that light travels in straight lines and understand how light enables us to see by creating a periscope and explaining how it works. They will explore how refraction changes the direction in which light travels and discover how a prism changes a ray of light. They will investigate how light enables us to see colours and perform a shadow puppet show about Isaac Newton's discoveries to demonstrate how shadows have the same shape as the object that casts them.
KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE
<ul style="list-style-type: none"> • Know how to sort and group animals, plants and microorganisms, based on their characteristics. • Know that the scientist, Carl Linnaeus, developed a classification system. • Know why living things are placed in one group and not another. • Know the names of different microorganisms. • Know that some microorganisms are harmful. 	<ul style="list-style-type: none"> • Know the main parts of the circulatory system. • Know the main functions of the heart, lungs and blood vessels in the circulatory system. • Know how the digestive system breaks down nutrients. • Know what a healthy lifestyle looks like. • Know what effect drugs and alcohol have on the body. 	<ul style="list-style-type: none"> • Know that light travels in straight lines. • Know that we can see objects because they give out light or reflect light into the eye. • Know that shadows, of the same shape as the object, are formed when objects block out light. • Know that Isaac Newton made discoveries about light and colour. • Know the colours of the spectrum.
UNIT: Evolution and Inheritance	UNIT: Electricity	
KEY KNOWLEDGE & SKILLS:	KEY KNOWLEDGE & SKILLS:	
In this unit, pupils will learn that living things produce offspring of the same kind and they are not identical to their parents. They will examine the theories of evolution constructed by Darwin and Wallace and discover that plants and animals are adapted to suit their environment in different ways. Pupils will be given the opportunity to examine scientific evidence which supports the argument that living things have changed over time and identify how adaptation may lead to evolution.	In this unit, pupils will be given the opportunity to explore major discoveries made by scientists in the field of electricity. They will use recognised symbols in a circuit diagram and observe the effect of different volts in a circuit. They will understand that the brightness of a bulb is affected by the voltage in a circuit and carry out an investigation to understand how various components function, reporting their findings and presenting data.	

KEY STICKY KNOWLEDGE	KEY STICKY KNOWLEDGE	
<ul style="list-style-type: none">• Know how to identify inherited traits and adaptive traits.• Know that adaptations are random mutations.• Know that by examining fossils, we can find evidence supporting the idea of evolution.• Know and identify the difference between selective and cross-breeding.• Know that adaptations can result in both advantages and disadvantages.	<ul style="list-style-type: none">• Know how our understanding of electricity has changed over time.• Know and explain how major discoveries led to the widespread use of electricity.• Know the main circuit symbols and use these when drawing circuit diagrams• Know how to draw circuit diagrams using the correct symbols and label the voltage correctly.• Know the effect of increasing or decreasing the voltage on different parts of a circuit	