WESTON ST MARY C OF E PRIMARY SCHOOL

SCIENCE CURRICULUM OVERVIEW 2025-26 CYCLE B

	AUTUMN A	AUTUMN B	SPRING A	SPRING B	SUMMER A	SUMMER B	EARLY LEARNING GOAL
Reception	**The Natural World**						
	Begin to comment and asks questions about aspects of their familiar world such as the place where they live or the natural world Begin to understand the effect their behaviour can have on the environment	Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world Begin to understand the effect their behaviour can have on the environment Talks about the features of their own immediate environment and how environments might vary from one another	Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them. Developing an understanding of growth, decay and changes over time Shows care and concern for living things and the environment Looks closely at similarities, differences, patterns and change in nature Makes observations of animals and plants and explains why some things occur, and talks about changes Use all their senses in hands-on exploration of natural materials. Talk about what they see, using a wide vocabulary. Plant seeds and care for growing plants.	Knows about similarities and differences in relation to places, objects, materials and living things	Talks about the features of their own immediate environment and how environments might vary from one another Makes observations of animals and plants and explains why some things occur, and talks about changes 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 Begin to understand the need to respect and care for the natural environment and all living things. Draw information from a simple map.	Understand the effect their behaviour can have on the environment 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. Understand the key features of the life cycle of a plant and an animal. Draw information from a simple map.	**<u>The natural world</u>** Children at the expected level of development will: - 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.

Year 1/2	AUTUMN A	AUTUMN B	SPRING A	SPRING B	SUMMER A	SUMMER B
	The Human Body	**Living Things in their Environments**	**Electricity**	**Plants**	**Materials and Matter**	**Astronomy**
Overview	1. The skeletal and muscular systems, exercise 2. Digestive system and healthy eating 3. Circulatory system, preventing illness 4. germs and disease, 5. Animals and their offspring	1. Habitats: rainforest, desert, meadow and underground habitats. 2. Food chains 3. Oceans and undersea habitats 4. Deep ocean habitats 5. Habitat destruction and damage.	1. Circuits 2. Conductive and non-conductive materials 3. Safety rules.	1. Seeds and bulbs 2. Plants and water 3. Light 4. Temperature 5. Healthy plants	1. Comparing materials 2. Changing materials 3. Concepts of atoms 4. Matter, solids, liquids, gases, measurements	1. Our solar system 2. Orbit and rotation 3. Sun, moon, planets, stars 4. Constellations
Working Scientifically Criteria	• Asking simple questions asking simple questions and recognising that they can be answered in different ways • Identifying and classifying • Using their observations and ideas to suggest answers to questions • Gathering and recording data to answer questions	• Using their observations and ideas to suggest answers to questions • Identifying and classifying • Gathering and recording data to help in answering questions • Observing closely, using simple equipment • Asking simple questions and recognising that they can be answered in different ways	• 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	• 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	• 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	• Asking simple questions and recognising that they can be answered in different ways • Identifying and classifying • Using their observations and ideas to suggest answers to questions
Vocabulary	Skeleton Joint Muscles Digest Red blood cell Arteries Veins Germs Edward Jenner Louis Pasteur	Alive Dead Habitat Microhabitat Adaptation Food chain Producer Consumer	Electricity Electrical current Electrical shock Circuit Battery Light bulb Switch Wire Conductor Insulator	Plant Root Stem Leaves Seeds Seedling Bulb Germinate Crops	Matter Solid Liquid Atoms Materials Properties Transparent Opaque	Solar system Planets Orbit Rotate Moon Reflect Waxing Waning Constellation
Why this, why now?	Building on their understanding of the human body and senses from cycle A, this year children will look at some systems that operate within our bodies, including the skeletal system, the muscular system, the digestive system and the circulatory system. In this unit, children will have their first look at our digestive system, something they will return to in greater detail in Year 3/4.	Living things and their environments builds on the Year 1/2 cycle A unit, Animals and their Needs. Here, children studied animals and learned that they cannot create their own food, like plants, and must eat other animals or plants to survive. Children are introduced to the disciplinary concept of interdependence; a concept that will be returned to throughout the curriculum as children build their	This unit is a non-statutory unit that we have included in our curriculum in order to teach knowledge that pupils will build upon when they study electricity in Year 3/4. We felt that following the National Curriculum and not teaching electricity until Year 3/4 would miss an opportunity to build some understanding in Key Stage One. We also feel that doing this will avoid cognitive overload when pupils come to	This unit builds directly from the Year 1/2 cycle A unit 'Plants'. Children will look again at what plants are and what they need to grow. In this unit, children will look in more detail at seeds and bulbs. They will learn that germination is the process where a seed begins to grow and changes into a seedling. Children will spend some time comparing plants that receive light and water and those that don't. They will understand that healthy	This unit builds on directly from Year 1/2 Cycle A – Materials and Magnets. Here, pupils learned about the names of everyday materials. They began to consider simple properties of everyday materials and learned about John Dunlop and his work on developing a suitable material for wheels. This unit offers another opportunity to reinforce the names and uses of every day materials, developing the conceptual understanding that all materials are used for a	This unit has been included in our curriculum in addition to the National Curriculum content. It gives pupils an introduction to this fascinating branch of science, before they are required to do so by the National Curriculum in Year 5/6. This unit builds important understanding that scientists learn from each other to make new discoveries. This avoids pupils building a

		understanding over time. Children will learn how habitats provide for basic needs of animals and how the living things within a habitat depend on each other. Simple food chains are introduced in this unit and this knowledge will be built upon later in Year 4 – Ecology.	study this area of science in KS2. This unit introduces electricity, what we use it for, how it behaves and how we must use it safely. Pupils will understand that scientists use symbols to represent components of a circuit. This links to their understanding of using symbols on a map in geography.	plants need light and water to grow. In this unit children will build on their understanding of plants as food from cycle A and will look at how farmers grow plants as crops, which are then harvested and transported to shops. They will consider where the food we eat comes from. Finally, children will show what they have learned by explaining how bulbs and seeds work, using scientific drawing and/or diagrams in their writing to support their answer. This unit will provide foundational prior learning for the Year 3/4 Unit Plants.	purpose based on their properties.	misconception that scientists discover things in a vacuum, just one day stumbling upon new knowledge, and reinforces the idea that scientists are experts who have studied the work of people who came before them. This important disciplinary knowledge will help pupils to recognise the discipline of science and the many branches that lie within it. Pupils will be introduced to the planets of our solar system and will begin to understand orbit and rotation. They will begin to understand why there is life on earth, but not similar life on other planets. Teachers will demonstrate how light from the sun gives us day, and how the rotation of the earth gives us night. Pupils will revisit this later in Year 5/6. They will then study the phases of the moon, recognising that although our view of the moon changes throughout the phases, the moon itself does not change shape.
Key End Points	• Animals need water, food and air to survive. • Our skeleton is made up of bones. • Our muscles help us to move. • Digestion means breaking down the food we eat. • Our bodies take things (nutrients) we need out of the food we eat. • The heart is a muscle inside the body. • The heart pumps blood around the body. • Blood circulates (goes around and around) the body.	• Things can be living, dead or never been alive. • Living things move, grow, need air and reproduce. • Dead things were once alive but are no longer alive. • A habitat is the name given to a place where animals or plants live. • Rainforests are hot and moist. • Deserts are dry and hot or cold. • Some animals live in underground habitats and are adapted to living underground.	• Identify things that use electricity. • A battery is a store of electrical energy. • Electricity is energy that we store and use to make things work. • Electricity can be dangerous. • An electrical circuit is a loop that allows electricity to travel around it. • An electrical circuit must have wires and a battery. • If a circuit is broken, electricity will not be able to flow around it.	• Know there are many different types of plants. • Seeds and bulbs grow into mature plants. • A seed can grow into a flowering plant. • When a seed germinates, it changes from a seed to a seedling. • Some plants create bulbs that live underground, and their leaves grow up through the soil. • Plants need light and water to grow. • Plants often grow well in the Spring when the temperatures get warmer and there is often rain.	• Everyday materials include wood, metal, plastic, glass, brick, rock, paper and cardboard. • Every material has its own properties – these can include being hard, soft, opaque, shiny, bendy. • Materials are used for a purpose depending on their properties. Inventors need to think about the best materials to use for their inventions. • Scientists use a microscope to look closely at very small things. Sometimes,	• The Sun is a star at the centre of our solar system. • There are eight planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. • Planets travel around the Sun. We call this journey an orbit. • As the planets orbit the Sun, they also spin around. We call this rotation. • Night and day occur due to the Earth rotating.

	• Germs can make us unwell. • We take care of our bodies through exercising, eating a healthy diet, keeping clean and resting.	• A food chain describe 'who eats what' within a habitat. • A food chain can consist of producers, consumers and predators.	• Materials that allow electricity to pass through them are conductors. • Materials that do not allow electricity to pass through them are insulators. • Many, but not all, metals conduct electricity.	• Some plants (crops) are grown for food. • Crops are harvested, packaged and transported for people to buy and eat.	materials look very different when we look at using a microscope. • Everything around us is made from tiny building blocks we cannot see called particles. Solids have a definite shape. • The shape of some solids can be changed by squashing, bending, twisting and stretching. • The particles in a solid are tightly packed together and have a strong bond. • Liquids can be poured. • The shape of a liquid depends on the container it is being held in. Water can be a solid and can also be a liquid.	• The Moon orbits the Earth. • The Moon reflects the light of the Sun. • As the Moon's position changes, we can see different parts of it. • A constellation is a group of stars that, when seen from Earth, form a pattern. • People have given constellations names and have told stories that imagine how the constellations were formed. • Astronomers have studied the stars for many years, learning from each other and making new discoveries. • Scientists, including astronomers, study space to find out more about what lies beyond our planet. • The International Space Station orbits earth and allows scientists to find out more about space. • Scientists have sent a rover to Mars to look for signs of life long ago.

Year 3/4	AUTUMN A	AUTUMN B	SPRING A	SPRING B	SUMMER A	SUMMER B
	The Human Body	**Classification of Plants and Animals**	**Ecology**	**Sound**	**States of Matter and the Water Cycle**	**Electricity**
Overview	1. The muscular system 2. The skeletal system 3. The nervous system 4. The digestive system 5. Teeth	1. Cold-blooded or warm-blooded 2. Vertebrates or invertebrates 3. Characteristics of animal classes 1. Classification of plants.	1. Habitat 2. Interdependence of organisms and their environment 3. Producers, consumers and decomposers, 4. Food webs 5. Producers, predators and prey 1. Human threats to the environment.	1. How sound is created 2. How sound travels 3. Sound waves 4. Speed of sound 5. Pitch, intensity, the human voice 1. Hearing, the human ear.	1. Change of state, evaporation 2. Condensation, 3. Precipitation 4. Humidity 1. Groundwater.	1. Electric current 2. Circuits 3. Switches 1. Conductors and insulators.
Working Scientifically Criteria	• Identifying differences, similarities or changes related to simple scientific ideas and processes. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions, • Asking relevant questions and using different types of scientific enquiries to answer them. • Setting up simple practical enquiries, comparative and fair tests. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Identifying differences, similarities or changes related to simple scientific ideas and processes • Asking relevant questions and using different types of scientific enquiries to answer them • Using straightforward scientific evidence to answer questions or to support their findings • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	• 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 • Identifying differences, similarities or changes related to simple	• 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	• 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	• 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

			scientific ideas and processes • Using straightforward scientific evidence to answer questions or to support their findings.	• Identifying differences, similarities or changes related to simple scientific ideas and processes • Using straightforward scientific evidence to answer questions or to support their findings.		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
Vocabulary	Digestion Salivary glands Oesophagus Stomach Small intestine Large intestine Peristalsis Urethra Vitamin Incisor Canine	Classification Plant Invertebrate Animal Vertebrate	Habitat Consumer Ecosystem Producer Decomposer Pollution	Vibration Pitch Larynx Sound waves Volume Ear drum Break the Sound barrier Supersonic	Cycle Liquid Water vapour Solid Gas Evaporation Condensation Precipitation	Electricity Electrical circuit Battery Light bulb Filament Switch Wire Conductor Insulator
Why this, why now?	Using prior knowledge as a springboard to understand, children will return to the knowledge that some aspects of life on earth are too small to see. Building on their disciplinary knowledge, children will learn that some scientists study things under a microscope to see things in more detail than our eyes can see. This unit introduces cells as the building blocks that all living things are made of. Children will learn that cells inside our bodies make up tissue (e.g. muscle), which make up organs, which function in systems within our bodies. This unit explains digestion in much more detail	In Key Stage One children began to understand that scientists group living things according to their characteristics. In this unit they will look more closely at the concept of classification in relation to vertebrates, invertebrates and plants. Children will learn about Carl Linnaeus and his work to name and classify living things. Children will ask and answer questions about fish, amphibians, reptiles, birds, mammals, insects, arachnids and molluscs. Children will look closely and observe how these living things are structured, what their features are and how they compare and	This unit builds on understanding from Taking Care of the Earth in Year 1, from Living Things and their Environments in Year 2, from Cycles in Nature in Year 3 and from Classification of Plants and Animals, the previous unit pupils have studied in Year 4. Pupils will learn about the seven things that all living things have in common; movement, sensitivity, respiration, nutrition, excretion, respiration and growth. This content is not essential to cover the national curriculum but being introduced to the concepts here will help children to	This unit builds on knowledge from Year 3 Light, particularly around how the eye sees as they focus on how the ear hears in this unit. In this unit pupils will learn that sound is caused by a back-and-forth movement: a vibration. A vibrating object will make the particles of air around it vibrate too. The air particles, which are pushed one way, push neighbouring particles in the same way, and then bounce back, so the vibration spreads outwards. This vibration spreading outwards is what we call sound. How far away you can hear a sound depends on its volume. This is to do with	This unit builds on understanding from Year 1 Seasons and Weather and also from Materials and Matter in Year 2. Previously children have learned about the weather and clouds in Year 1. They learned about cumulus, cirrus and stratus clouds. In Year 2, they began to learn about solids and liquids and how they behave. In this unit, children will learn about the main parts of the Water Cycle including evaporation, condensation, precipitation and collection. They will learn about each part in detail before piecing them all together to complete the cycle. This approach will support their vocabulary development over time, focussing in on each	This unit covers statutory content from the National Curriculum. In the Primary Knowledge Curriculum, we teach some knowledge of electricity in Year 2, which is not statutory. We feel that teaching some knowledge content in Year 2 will result in children being well prepared with some prior knowledge when they reach this unit in Year 4, reducing overall cognitive load. If your children have not completed the Year 2 Electricity unit, please read it and teach at least the first lesson introducing electricity before moving on to this unit. This unit assumes

	than previously learned, but holds the understanding of cells alongside this, so that children can begin to understand there is much going on at microscopic level. The concept of nutrients within foods will be better understood when children know that there are very tiny things we cannot see around us.	contrast with other animals. They will also study flowering and non-flowering plants and differences in the reproduction of these living things. Conceptually, children are building their understanding of how and why scientists classify and how taxonomies help us to understand the world around us. This knowledge will be built upon further in Year 6 when children look again at the work of Linnaeus and the Latin names he assigned the living things he studied. This area of the curriculum will link to children's understanding of the work of Charles Darwin and Alfred Wallace who they will also study in Year 6.	prepare for upper KS2 and beyond.	the amplitude (size) of the vibration. A quiet sound, like a whisper, doesn't travel very far. But a really loud sound can travel for hundreds of miles. Pupils will learn that more than a hundred years ago when a volcano exploded on the island of Krakatoa, the sound could be heard in Australia, almost three thousand miles away. This will link to their knowledge of world geography.	scientific process before stepping back and seeing the cycle as a whole. Later, in Year 5, children will build on the substantive knowledge from this unit and will deepen their understanding of meteorology: the study of the weather. They will focus on weather, climate, atmosphere and forecasting before exploring how climate effects people's lives later in the curriculum in Geography when studying Africa and British Geographical Issues.	children have prior knowledge of simple circuits and components including batteries and bulbs. This unit reconnects to previous learning about electricity, what we use it for, how it behaves and how we must use it safely. It is vital for children to be aware of and follow the classroom rules you have established in order to use electricity safely.
Key End Points	• All living things are made up of cells. • Our body requires nutrients to keep healthy. • Nutrients are found in the food we eat. • There are four types of teeth: incisors, canines, pre-molars and molars. • Each tooth type has a function. • The function of body parts in the digestive system. • A balanced diet keeps us healthy. • Essential vitamins and minerals are needed in our body	• A vertebrate is an animal with a backbone. • An invertebrate is an animal without a backbone. • Scientists sort living things using a process called classification. • Fish are cold-blooded vertebrates that live in water and have gills. • Amphibians are cold-blooded vertebrates that live both in water and on land. • Reptiles are cold-blooded vertebrates with scaly skin. • Birds are warm-blooded vertebrates with feathers that can fly. • Mammals are hairy, warm-blooded vertebrates that breathe air. • Insects are invertebrates with six legs and three body parts. • Molluscs are invertebrates with a soft body, and some have shells.	• There are seven life processes which living things have in common • A habitat is the natural environment or home of an animal, plant or other organism • Living things depend on each other within their habitat • A producer makes their own food using sunlight, water and nutrients • A consumer eats other living things to gain their energy • A decomposer breaks down the remains of dead living things into smaller pieces which leaves nutrients in the soil • An ecosystem is the interaction of organisms in their environment • Ecosystems can be delicately balanced so if one organism is added or removed it can have a negative impact on other organisms • Pollution is any substance that is	• Sound is caused by a back and forth movement called vibration • Sound waves move out from a vibrating object • Sound can travel through different types of matter (solid, liquid, gas) • Sound is fainter the further from the source it is • Pitch is how high or low a sound is and relates to the speed of vibrations • Volume is how loud or quite a sound is and relates to the strength of the vibrations • Louder sounds are made by bigger vibrations • Quieter sounds are made by smaller vibrations • Faster vibrations make higher-pitched sounds • Slower vibrations make lower-pitched sounds • We hear through soundwaves entering the ear, travelling through it and the messages sent to the brain	• There are three main states of matter: solids, liquids and gases. • Water exists in all these states of matter in nature. • Water can change into each state in both directions – we call this the Water Cycle. • Water evaporates from all water sources (e.g. puddles, lakes, oceans). • When water evaporates, it becomes water vapour. • The amount of water in the air is called humidity. • Condensation is when water vapour turns back into liquid. • High in the sky, the air is cooler and turns vapour back into water droplets. • There is always water vapour in the air and the temperature changes its appearance. • Clouds are formed of millions of water droplets and their shape, size and colour can tell us what weather will be like.	• Electricity can be very dangerous. • We can use electricity safely by not putting fingers in plug sockets, not using electrical items with wet hands and checking that wires are not frayed. • An electrical circuit is a loop that allows electricity to travel around it. • An electrical circuit must have wires and a battery. • If a circuit is broken, electricity will not be able to flow around it. • A switch opens and closes a circuit. • Opening a circuit prevents electricity from flowing. • Thomas Edison invented the first lightbulb suitable to use in homes. • Lewis Latimer invented a lightbulb that could last for a long time.

		• Arachnids are invertebrates with eight legs and two body parts. • Plants are classified into two main groups: flowering and non-flowering. • Non-flowering plants grow from spores instead of seeds.	introduced to an environment that can damage or affect quality of life • Understand the human impact on their local area		• • When water droplets get large enough,	• Materials that allow electricity to pass through them are conductors. • Materials that do not allow electricity to pass through them are insulators. • Many (but not all) metals conduct electricity.

Year 5/6	AUTUMN A	AUTUMN B	SPRING A	SPRING B	SUMMER A	SUMMER B
	The Human Body	**Classification of Living Things**	**Electricity**	**Light**	**Reproduction**	**Evolution**
Overview	1. The heart: circulation of the blood 2. Blood vessels and transport 3. Blood pressure and heart rate 4. Changes to humans as we get older	1. Classifying organisms 2. Cells: Plant and Animal cells 3. Taxonomy 4. Vertebrates 5. Invertebrates	1. Simple series circuits 2. Parallel circuits 3. Voltage 4. Switches 5. Investigation	1. How light travels 2. How we see 3. Shadows and their shapes 4. The colour of light 5. Periscopes	1. Asexual reproduction 2. Sexual reproduction in non-flowering plants 3. Sexual reproduction in flowering plants 4. Reproduction in animals 5. Growth stages	1. Fossils and evolution 2. Inheritance 3. Adaption 4. Charles Darwin 5. Alfred Wallace 6. Mary Anning
Working Scientifically Criteria	• 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. • Identifying scientific evidence that has been used to support or refute ideas or arguments. • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a	• Identifying scientific evidence that has been used to support or refute ideas or arguments. • 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. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	• 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,	• Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Using test results to make predictions to set up further comparative and fair tests. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graph. • 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.	• Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • 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.	• 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.

	degree of trust in results, in oral and written forms such as displays and other presentations.		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.			
Vocabulary	Circulatory system Transport Atria Ventricles Valves Aorta Arteries Veins Capillaries Pulse rate	Classification Organism Animal Plant Taxonomy	No new introduction of vocabulary, reinforcement of vocabulary previously taught: Electrical current Electrical shock Circuit Battery Light bulb Switch Wire Conductor Insulator	Speed of light Mirror Shade Reflection Prism		Palaeontologist Anthropologist Adaptation Variation Evolution Inheritance Natural selection Species Extinct Wallace line Theory
Why this, why now?	During this unit children will build on their knowledge of the circulatory system from Year 1/2. They will learn that William Harvey was a doctor who suggested the heart was at the centre of a circulatory system that moved blood around the body. They will learn that now; scientists and doctors know that the heart and blood vessels are parts of our circulatory system and that our circulatory and respiratory systems keep us alive. We know that our heart is divided into four chambers and blood enters and exits the heart. As the heart beats, it pumps the blood out to the lungs for a new supply of oxygen. Blood vessels, called arteries, carry oxygen-rich blood away from the heart. Blood vessels, called veins, carry blood back to your heart to be pumped to the lungs for more oxygen. Children will learn the importance of each part of the	Building on prior knowledge of classification from Year ½ and Year 3/4, children will study classification in more detail and will understand that scientists look closely at the features of living things when considering their classification. Previously, children have studied vertebrate and invertebrate animals. They have also looked at flowering and non-flowering plants. Within this unit, they will look further at the work of Carl Linnaeus and how he classified plants and animals. They will look at Latin names for plants and animals and will reflect upon the features of living things that led to their classification.	This unit builds on content from Year 1/2 Electricity (non-statutory) and from Year 3/4 Electricity. In the previous two units, children have worked scientifically to make simple circuits and to investigate how electricity behaves within a circuit. Children will have experienced using batteries, wires and bulbs. They will build on their learning in this unit, recapping that electricity carried energy that can be converted into hear, light and energy in our homes, schools and places of work. Children will develop this knowledge to understand that electricity can only travel if there is a complete circuit.	This unit builds on directly from Year 3/4 Light. Going beyond the national curriculum requirements, pupils will also look at prisms and how they split white light into its constituent colours. This will give pupils some prior knowledge when they come to study the different frequencies of light and prisms in KS3 Physics.	This unit covers content which is additional to the National Curriculum. It builds on understanding of how plants and animals reproduce from previous years.	In this unit, children will be introduced to concept of evolution: the process by which living organisms (plants and mammals) develop and change, over time. The substantive concepts of this unit are inheritance, variation, adaptation and evolution by natural selection. Declarative knowledge (knowledge which manifests from the central principle), such as knowledge of biomes, habitats and reproduction, will also be built upon in this unit. The disciplinary knowledge gained in this unit will allow the children to think more like palaeontologists, naturalists, biologist and anthropologists (all types of scientists), by using data and diagrams to deduce and draw logical conclusions.

	circulatory system including arteries, veins and capillaries. Building on the understanding that some parts of our body are too small to see, children will learn that blood is made up of different components. They will learn that the main liquid in our blood is called plasma. Red blood cells contain a substance called haemoglobin which carries the oxygen and carbon dioxide. White blood cells attack and destroy bacteria. Platelets are responsible for clotting the blood. Children will learn about the important role the lungs play in oxygenating blood, a process that is vital for life.					The study of evolution is complex, and it is connected to many elements of science, geography and history. Therefore, we have developed this unit so that children first understand that fossils are evidence of evolution (a change over time), then ensuring the children understand the concepts of inheritance and adaptation, before progressing onto teaching the concept of evolution by natural selection. Cognitive science tells us that starting with concrete understanding will help support more abstract concepts.
Key End Points	• The heart pumps blood around the body. • The left atrium and left ventricle carry oxygenated blood which is pumped around the body. • The right atrium and right ventricle carry deoxygenated blood which is pumped out to the lungs. • All cells in our body need oxygen. • Arteries carry oxygenated blood from the heart to cells. • Veins carry deoxygenated blood from the cells back to the heart. • Heart rate increases when you exercise as cells use more oxygen. • Drugs and poor health can affect how well the heart works.	• Living things are classified into five main kingdoms. • Members of each kingdom share features unique to that group. • The five kingdoms are plants, animals, fungus, protist and prokaryote. • Cells are tiny building blocks that make up all living things. • There are two main types of cell: animal and plant. • Taxonomy is a way of grouping organisms. • Organisms are divided into kingdoms and then further divided into smaller groups. • Organisms are divided into kingdoms, phylum, class, order, family, genus, species. • Vertebrates are classified into five groups: fish, amphibians, reptiles, birds and mammals. • Invertebrates are classified into groups, which include insects, arachnids and molluscs.	• We can control the flow of electricity in a circuit. • Circuit components need electricity to work. • Circuits components turn electrical energy into different energy forms. • Voltage is the pressure from a battery that pushes electricity around a circuit. • The voltage of a battery or the number of batteries can change the brightness/volume of components. • Switches control the flow of electricity in a circuit. • A switch creates makes a circuit complete or incomplete. • Making a gap in a circuit prevents electricity from flowing.	• Light enables us to see by entering our eyes. • Light travels in straight lines. • Some light sources are natural, and some are artificial. • The iris helps the pupil to open and close. • Inside the retina, light rays become electrical signals which are sent to the brain. • Shadows are always the same shape as the object that made the. • The size of shadows can change but the outline shape stays the same as the object, • Light from the sun is made up of the colours of the rainbow, • When light travels through a prism, the glass slows it down and changes its course. • Different colours are slowed down different amounts when going through a prism. • A periscope uses reflects an image out of sight using light and mirrors.	• • Asexual reproduction does not require a male and female and doesn't alter genetic information. • Asexual reproduction is when an organism simply copies itself. • Some plants and some simple animals reproduce asexually. • Most flowering plants reproduce by combining a male and female gamete (pollen and ovule) to make a fertilised egg that grows into an embryo. • The embryo or baby plant is protected inside a seed. • Most flowering plants clothe their seeds with fruit. • Fruit protect and keep seeds moist. • Fruits help with seed dispersal. • Animals can have male cells (sperm produced in testes) or female cells (eggs produced by ovaries). • When an egg is fertilised by sperm it is called a zygote. • The zygote develops into an embryo and then a foetus. • When a foetus	• Fossils are the remains of organisms. • A small percentage of life on earth is preserved as a fossil, most organisms decompose. • Fossils provide evidence for evolution. • Inheritance is passing on characteristics from a parent to their offspring. • There are differences in characteristics within an individual species, known as variation. • Evolution is the change in inherited traits. • Animals and plants that adapt well to an environment have more chance of surviving. • Adaptation plays an important part in evolution as species change over time. • Charles Darwin spent years observing,

					can live outside the mother, it is born. • Gestation is the period of time that a living thing develops before it is born. • Different animals have different gestation periods. • Different species of animal have different ways of looking after their young.	comparing and analysing many specimens of plants and animals. • Animals and plants that adapt well to an environment have more chance of surviving, this is called natural selection. • Alfred Wallace explored the Amazon, collecting species of beetles, butterflies and birds. • He created an imaginary line, known as the Wallace Line.