Science at St Margaret's

At St Margaret's, we believe that science makes a valuable and distinctive contribution to every child's education. It influences many aspects of our daily lives and helps shape the world we live in. A high-quality science education lays the foundation for understanding the world through the key disciplines of biology, chemistry, and physics.

Science has transformed our lives and is essential to the future prosperity of our planet. Therefore, all children should be taught the fundamental knowledge, methods, processes and applications of science. By building a strong foundation of key concepts and knowledge, we aim to inspire children to appreciate the power of rational explanation and to develop a sense of excitement and curiosity about the world around them.

Through high-quality teaching, we help pupils understand how major scientific ideas have shaped society and continue to influence our lives. Our goal is to prepare children for life in an increasingly scientific and technological world.

We achieve this by:

- Delivering high-quality, engaging, and inspiring science lessons;
- Using scientific contexts to reinforce and extend cross-curricular skills in Literacy, Maths, and Computing;
- Teaching science within global and historical contexts, highlighting the contributions of significant scientists from diverse cultures;
- Developing and deepening pupils' scientific knowledge and understanding;
- Encouraging pupils to work scientifically by planning, conducting, and evaluating investigations;
- Expanding pupils' scientific vocabulary and helping them articulate scientific ideas clearly and accurately;
- Promoting collaboration and independent learning, perseverance, and the ability to ask meaningful, investigable questions.

Our Curriculum

At St Margaret's, our science curriculum is underpinned by the purposeful sequencing of scientific knowledge and the development of working scientifically skills. It is delivered through carefully structured units across the academic year, each designed to foster a deep understanding of key scientific concepts and adapted to meet the specific needs of our school's context. These units also promote meaningful cross-curricular links, enriching pupils' learning experiences and encouraging broader thinking. This systematic approach enables pupils to build knowledge progressively, deepen their conceptual understanding, and grow into confident, inquisitive scientists.

We implement the 2014 National Curriculum for Science through a series of planned units that:

- Reflect the core aims of science education;
- Provide clear opportunities for progression and continuity;
- Support pupils in achieving their full potential;
- Offer a diverse range of learning experiences, including opportunities for practical scientific enquiry.

The programmes of study for science are set out year-by-year for Key Stages 1 and 2. They outline a coherent sequence of knowledge and concepts, with statutory content that must be taught by the end of each key stage. This framework informs termly and weekly planning, ensuring continuity across year groups and the revisiting of key topics to reinforce learning.

While progression is essential, we place equal emphasis on securing a solid understanding of each foundational block of knowledge. This ensures pupils are well-prepared to move confidently to the next stage of their scientific education.

Lesson structure and frequency within each unit may vary to best support the acquisition of knowledge and skills. For example, a unit may be delivered through a series of shorter lessons over several weeks or through more intensive sessions within a condensed timeframe.

To support long-term retention and retrieval of knowledge, pupils regularly engage in retrieval tasks that challenge them to recall learning from previous lessons, units, and year groups.

We are committed to ensuring that our science curriculum is accessible to all learners. Where necessary, adaptations are made based on ongoing assessment, monitoring, and—where applicable—individual support plans and EHCPs. These adjustments ensure that every child can engage meaningfully with the curriculum and achieve success.

Working Scientifically

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. During all key stages, the 'working scientifically' key skills must be taught within each area of science, in accordance with the 2014 National Curriculum programme of study. It should not be taught as a separate strand. Focus should be on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.

EYFS and 'Understanding the World'

In the Foundation Stage, children begin to explore Science through the 'Understanding the World' area of the EYFS curriculum. Learning is rooted in their interests and real-life experiences, enabling them to make sense of the world in a practical and meaningful way. At St Margaret's, we plan these opportunities in line with the Early Learning Outcomes and Goals, ensuring that children develop secure foundations for future scientific understanding. Through hands-on exploration, observation, and simple investigations, pupils' natural curiosity is nurtured and the early skills of scientific thinking—such as noticing, questioning, and predicting—begin to develop. For example, children plant and care for a bean, observing how it changes over time, and explore seasonal changes using our beautiful school grounds. These experiences lay the groundwork for more formal scientific learning in later years.

Key Stage 1 (Years 1 and 2)

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They

should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done using first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

Year 1

In Year 1, pupils begin their scientific journey by exploring the world around them through observation, questioning, and hands-on experiences. The curriculum introduces key concepts in biology, chemistry, and physics in an age-appropriate way, covering topics such as plants, animals including humans, everyday materials, and seasonal changes. Pupils will identify and name a variety of common plants, animals and everyday materials; sort materials based on their physical properties; and label the basic parts of the human body. Pupils learn to identify and classify, observe closely, and carry out simple tests, developing early skills in working scientifically. This builds on their EYFS understanding of the natural world and lays the foundation for future learning by establishing key vocabulary and concepts. The Year 1 curriculum encourages curiosity and prepares pupils for more structured investigations and deeper scientific enquiry in Year 2 and beyond.

Year 2

In Year 2, pupils build on their Year 1 knowledge of plants, animals, and materials by exploring these topics in greater depth and complexity. Pupils will identify and compare suitability of materials for particular uses and explore how solid materials can be changed. They will learn about and describe the basic needs of animals, including humans, for survival (water, food and air) and the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Building on from Year 1, pupils will observe and describe how seeds and bulbs grow into mature plants and describe how plants need water, light and a suitable temperature to grow and stay healthy. They are introduced to new scientific concepts such as habitats, life cycles, and food chains, which broaden their understanding of living things and their environments. As their confidence grows, pupils begin to carry out investigations with increasing independence, applying their enquiry skills more systematically. Their scientific vocabulary is further developed, enabling them to communicate ideas more clearly and precisely. This progression prepares pupils for Key Stage 2, where they will deepen their understanding of scientific processes and begin to think more analytically about the world around them.

Lower Key Stage 2 (Years 3 and 4)

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and

interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

Year 3

In Year 3, pupils deepen their scientific understanding by exploring more complex concepts across biology, chemistry, and physics. Key areas include plants, animals including humans, rocks, light, and forces and magnets. Building on from Year 2, pupils will identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers and 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. They will explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Pupils learn that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food. They will identify the different types of teeth in humans and their simple function. Pupils will begin to classify rocks and understand simple physical phenomena like light and magnetism. Pupils will be introduced to forces and will compare how things move on different surfaces and observe how magnets attract or repel each other and attract some materials and not others. They will use their previous learning on materials to compare and group together a variety of everyday materials based on whether they are attracted to a magnet. Working scientifically skills are further developed through planning investigations, making predictions, recording results, and drawing conclusions. This year builds on Key Stage 1 foundations and prepares pupils for more systematic enquiry and abstract scientific thinking in Year 4 and beyond.

Year 4

In Year 4, pupils expand their scientific understanding through topics such as living things and their habitats, states of matter, sound, electricity, and animals including humans. Building on from Year 3, pupils will describe the simple functions of the basic parts of the digestive system in humans and identify that humans and some other animals have skeletons and muscles for support, protection and movement. Pupils will develop their previous understanding of food chains, identifying producers, predators and prey. They will develop their knowledge of animals, including humans, by recognising that living things can be grouped in a variety of ways, exploring and using classification keys to help group, identify and name a variety of living things in their local and wider environment. They will recognise that environments can change and that this can sometimes pose dangers to living things. Pupils will explore changes of state and will be introduced to the basics of electrical circuits and sound waves. Pupils refine their working scientifically skills by planning fair tests, making accurate observations, and drawing conclusions from results. This year builds on prior knowledge and prepares pupils for more abstract scientific concepts and systematic investigations in Upper Key Stage 2.

Upper Key Stage 2 (Years 5 and 6)

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, pupils should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

Year 5

In Year 5, pupils explore more advanced scientific concepts across biology, chemistry, and physics, including forces, Earth and space, properties and changes of materials, and the human life cycle. Building on previous learning about forces in Year 3, pupils will investigate gravity, air resistance and the movement of celestial bodies, and identify the effects of air resistance, water resistance and friction that act between moving surfaces. Pupils will investigate mechanisms, including levers, pulleys and gears. They will also learn about separating mixtures, and reversible and irreversible changes in materials, drawing on their previous learning about materials. Pupils will further develop their understanding of animals, including humans, by describing the differences in the life cycles of a mammal, an amphibian, an insect and a bird and describe the changes as humans develop to old age. They will describe the life process of reproduction in some plants and animals. Pupils refine their working scientifically skills by planning more complex investigations, recording data systematically, and drawing evidence-based conclusions. This year builds on prior learning and prepares pupils for the increased depth and independence required in Year 6 and Upper Key Stage 2.

Year 6

In Year 6, pupils consolidate and extend their scientific understanding through topics such as evolution and inheritance, light, electricity, living things and their habitats, and animals including humans. Building on from their understanding of light in Year 3, pupils learn that light travels in straight lines, how the eye sees things, and investigate shadows. Previous learning in Year 4 on electricity will enable pupils to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit and they use recognised symbols when representing a simple circuit in a diagram. Children will recall learning about rocks in Year 3 to recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. They explore more abstract concepts like adaptation, classification, and the circulatory system, while refining their ability to plan investigations, control variables, and interpret data. Pupils apply their scientific knowledge with increasing independence and precision, preparing them for the demands of secondary science by developing analytical thinking and a deeper understanding of scientific enquiry.

	Autumn	Spring	Summer
Year 1	Use of everyday Materials Seasonal changes	Plants Seasonal changes	Animals including humans Seasonal changes
Year 2	Use of everyday materials	Animals including humans Plants	Living things and their habitats
Year 3	Rocks Light	Animals including humans Forces and magnets	Plants
Year 4	Animals including humans States of matter	Electricity Sound	Living things and their habitats
Year 5	Forces Earth and space	Properties and changes of materials	Living things and their habitats Animals including humans
Year 6	Light Electricity	Animals including humans Evolution and inheritance	Living things and their habitats

Monitoring and Assessment

Assessment plays a vital role in ensuring our science curriculum remains ambitious and inclusive. It enables teachers to check pupils' understanding, identify gaps in learning, and make informed adaptations to teaching so that all children can make sustained progress. Assessment is ongoing and takes various forms throughout each unit. Techniques such as self-assessment, peer assessment, and teacher observation are used in line with the specific learning outcomes. Much of this formative assessment occurs naturally within lessons and may not always be formally recorded.

For each unit of study, pupils are assessed against the expected objectives for both knowledge and skills. At the end of each unit, teachers make a summative judgment of each pupil's attainment, recording whether they are working below or at the expected standard in relation to the unit's objectives. This information informs future planning and supports targeted intervention where needed. By the end of the academic year, teachers determine whether pupils have met or not met the expected standards in each area.

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant National Curriculum programme of study.

Monitoring of science teaching and learning is carried out regularly and takes multiple forms. This includes:

- Pupil voice activities conducted at least twice a year to gather feedback on engagement and understanding;
- Work scrutiny, involving the analysis of pupils' recorded work and other evidence sources to evaluate progress and curriculum coverage;
- Planning reviews and lesson observations to ensure consistency and quality across year groups.

Science Progression of Skills and Knowledge

This table shows progression of working scientifically skills and scientific knowledge. The scientific knowledge skills below may not have been taught in that specific unit but will be covered in that year group.

	Topic	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically		• showing curiosity • questioning why things happen • beginning to use science words • can talk about things • creating simple representations of people and objects • having own ideas • testing ideas • noticing similarities and differences • looking closely at things • using equipment and tools carefully	• asking simple questions • recognising that questions 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 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.		• 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.

Biology	**Plants**	Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things. Explore the natural world around them. Recognise some environments that are different to the one in which they live.	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.	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.	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.	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 life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.
	Animals, Including Humans	Talk about members of their immediate family and community. Name and describe people who are familiar to them. Recognise some environments that are different to the one in which they live.	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 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.	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 the different types of teeth in humans and their simple functions.	Describe the simple functions of the basic parts of the digestive system in humans. Construct and interpret a variety of food chains, identifying producers, predators and prey. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Describe the changes as humans develop to old age. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans. Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.

	Living Things and their Habitats	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Begin to understand the need to respect and care for the natural environment and all living things. Draw information from a simple map. Explore the natural world around them. Describe what they see, hear and feel whilst outside. Recognise some environments that are different to the one in which they live.	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. Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Observe changes across the four seasons.	Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. Notice that animals, including humans, have offspring which grow into adults.	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	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. Construct and interpret a variety of food chains, identifying producers, predators and prey.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. 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.
	Evolution and Inheritance	Begin to understand the need to respect and care for the natural environment and all living things. Recognise some environments that are different to the one in which they live.		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. Notice that animals, including humans, have offspring which grow into adults.	Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	Recognise that environments can change and that this can sometimes pose dangers to living things.	Describe the life process of reproduction in some plants and animals.	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.

Chemistry	**Materials** **States of Matter**	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about the differences between materials and changes they notice. Explore the natural world around them. Describe what they see, hear and feel whilst outside.	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.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	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. 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.	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 some common conductors and insulators, and associate metals with being good conductors.	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	

	Rocks	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Explore the natural world around them. Describe what they see, hear and feel whilst outside.	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.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	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.			Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
Physics	**Light**	Explore how things work. Talk about the differences in materials and changes they notice. Describe what they see, hear and feel whilst outside.	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Describe the simple physical properties of a variety of everyday materials.		Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.		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.	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

	Sound	Explore how things work. Describe what they see, hear and feel whilst outside.	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.			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.		
	Seasonal Changes Earth and Space	Explore the natural world around them. Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them.	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.		Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.		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.	

	Forces (and magnets)	Explore how things work. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice. Explore the natural world around them. Describe what they see, hear and feel whilst outside.		Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	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.		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.	
	Electricity	Explore how things work.				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.		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.