

Science

Curriculum Overview and Progression Mapping



Upper
Wharfedale
Primary
Federation



Introduction

At the heart of our Science curriculum shines the guiding light of our federation vision: **“Be the Light”** (Matthew 5:14). We believe every child is born with a sense of wonder and a deep curiosity about the world. Through Science, we nurture that light, encouraging children to question, explore, and discover with confidence and joy.

Science is more than a subject: it’s a way of seeing and understanding the world. It invites children to investigate the mysteries of nature, to think critically and creatively, and to appreciate the beauty and complexity of life. Our curriculum fosters curiosity, resilience, and a lifelong love of learning, helping children grow into thoughtful, inquisitive individuals who seek truth and understanding.

Our core values -**Love, Thankfulness, Trust, Forgiveness, and Kindness** -are woven into every experiment, observation, and discussion. They guide how we learn, collaborate, and celebrate each child’s scientific journey. In embracing these values, our pupils learn to ‘be the light’—using science to illuminate the world around them, to care for creation, and to make a positive difference in their communities and beyond.

Contents

1. Intent, Implementation and Impact
2. Science through the Key Stages
3. SMSC and British Values in our Science Curriculum
4. Science through the Curriculum
5. Progression of Skills

Intent Statement

At Upper Wharfedale Primary Federation, our vision is to ignite a lifelong passion for discovery by giving every child a science curriculum that empowers them to explore, question, and understand the world around them. Rooted in curiosity and wonder, our science teaching helps children build a deeper, more meaningful connection to the natural and technological world we live in.

“The important thing is not to stop questioning. Curiosity has its own reason for existing.” — Albert Einstein

We believe science should be exciting, hands-on, and full of possibilities. Our curriculum is designed to spark imagination and encourage children to think like scientists, asking bold questions, investigating ideas, solving problems, and reflecting on their findings. Through practical enquiry, challenge, and exploration, pupils develop independence, resilience, and the confidence to make informed choices.

Scientific vocabulary is woven into every lesson, helping children articulate their thinking and deepen their understanding. We also celebrate the relevance of science in everyday life and the future through engaging experiences such as Science Days, STEM challenges, and enterprise projects, showing children that science isn't just something you learn, it's something you live.

Above all, our science curriculum nurtures the belief that every child can be a changemaker, using their knowledge, creativity, and curiosity to make a positive impact on the world.

Implementation

At Upper Wharfedale Primary Federation, our science curriculum is built around a carefully structured cycle of topics, rooted in the *Knowledge and Understanding* strand of the 2014 National Curriculum. These topics are delivered across mixed-age classes—Early Years and Key Stage 1, and Key Stage 2—allowing pupils to revisit key themes throughout their primary journey. This approach helps embed essential scientific skills and concepts over time.

We place high value on practical investigation and first-hand experiences, nurturing children's natural curiosity and encouraging them to explore the world around them. Through a rich, enquiry-based curriculum, pupils develop the skills to work scientifically, engaging in a wide range of investigations including:

- **Observing over time**
- **Pattern seeking**
- **Identifying, classifying and grouping**
- **Comparative and fair testing**
- **Research using secondary sources**

These skills are introduced progressively and purposefully, ensuring children build on prior learning as they grow in confidence and competence. They learn to ask meaningful questions, observe closely, measure accurately, test fairly, gather and interpret data, and communicate their findings clearly.

Scientific vocabulary is introduced, modelled, and reinforced throughout each topic, enabling children to articulate their understanding with precision. While science is taught as a discrete subject, the critical thinking and problem-solving skills it fosters enrich learning across the curriculum from applying logic in maths and design technology, to constructing evidence-based arguments in English and history, and exploring environmental issues in geography.

Our curriculum is designed not only to deepen knowledge and understanding of the natural world and physical processes, but also to inspire children to see science as a vital, exciting part of their lives now and in the future.

Impact

At Upper Wharfedale Primary Federation, our science curriculum inspires children to become curious, confident learners who actively engage with the world around them. Through exciting, hands-on lessons and thoughtful use of resources, pupils are encouraged to ask questions, explore ideas, and develop a deeper understanding of scientific concepts. Our approach helps children build essential skills for working scientifically such as observing, predicting, testing, and recording while nurturing their ability to think critically and solve problems. These skills grow progressively throughout their time in school, laying strong foundations for future learning.

Children also gain insight into the real-world relevance of science by learning about diverse scientists and their contributions. This helps pupils see science not just as a subject, but as a pathway to understanding their environment, making informed choices, and imagining future careers in science, technology, engineering, and beyond.

By the end of their primary journey, our pupils leave with a sense of excitement about science, a toolkit of practical skills, and the confidence to continue exploring the world with curiosity and care.

Science through the Key Stages

Science in the Early Years

Children begin their learning journey in science in the Early Years Foundation Stage (EYFS.) The children are guided to make sense of their world and their community through personal experience, centred around play and a multi-sensory approach, through the “Understanding the World” area of the curriculum. Children are encouraged to explore, observe, compare and talk about the natural world around them using their senses. They compare different environments with the one in which they live and are helped to understand the effect of the changing seasons. Children are supported to talk about their experiences using a science rich vocabulary.

Science in Key Stage One

In Key Stage 1, children are taught science through a discrete weekly lesson, where emphasis is again placed on practical investigation but also uses secondary sources. Each half term the children undertake a topic based on finding out more about the natural world - identifying plants and their requirements needed for growth, classifying animals in different ways, exploring the properties of everyday materials including man-made ones, observing and recognising seasonal changes, comparing habitats and the living things which live there. In these formative years the children are also introduced to the concepts of: the basic needs of animals, the requirements for a healthy lifestyle, animals having off-spring and the manipulation of materials.

Science in Key Stage Two

The knowledge, skills and understanding gained in key stage 1 is built upon and developed in Key Stage 2. New topics are introduced – electricity, Earth in space and evolution and inheritance. The children begin to develop ideas about function, relationship and interaction. Children are taught science in discrete weekly lessons which focus on a topic. Working scientifically skills are woven into these topics

SMSC and British Values in Our Science Curriculum

Spiritual Development Through Science

Spiritual education in science at Upper Wharfedale Primary Federation encourages children to explore the deeper meaning and purpose behind the natural and physical world. It nurtures a sense of awe and wonder—from the intricate design of a microorganism to the towering presence of a tree, and from the beauty of a rainbow to the vastness of space. Through hands-on exploration and reflection, pupils develop an emotional connection to the world around them, fostering curiosity, appreciation, and a desire to understand life's complexities. This spiritual dimension invites children to see science not only as a subject of study but as a way to marvel at creation, recognise the interdependence of all living things, and reflect on their place within the universe.

Moral Development Through Science

Science at Upper Wharfedale Primary Federation plays a key role in supporting children's moral development by encouraging respect for different viewpoints and fostering thoughtful discussion around real-world issues. Through topics that explore environmental responsibility, human impact, and ethical questions, pupils learn to consider the consequences of actions and the importance of caring for the planet and each other. Our curriculum nurtures naturally curious learners who not only seek answers but also reflect on the values behind scientific decisions—developing empathy, responsibility, and a sense of stewardship for the world around them.

Social Development Through Science

Science at Upper Wharfedale Primary Federation supports social development by helping children understand the value of collaboration, both in the classroom and in the wider scientific community. Pupils work together during experiments and research, learning to share ideas, listen respectfully, and solve problems as a team. These experiences mirror the cooperative nature of scientific discovery, where working together has led to life-changing breakthroughs—particularly in fields like medicine. Through this collaborative approach, children develop communication skills, mutual respect, and an appreciation for teamwork as a powerful tool for learning and innovation.

Cultural Development Through Science

Science at Upper Wharfedale Primary Federation supports cultural development by helping children appreciate the global nature of scientific discovery and the diverse contributions made by scientists from a wide range of backgrounds and cultures. Through learning about influential figures and innovations from around the world, pupils gain a broader understanding of how science shapes societies and improves lives. They also explore how science plays a vital role in the UK's economy, culture, and future, encouraging pride in national achievements while fostering respect for international collaboration and progress.

British Values

Science at Upper Wharfedale Primary Federation actively promotes British Values by embedding them into everyday learning experiences. **Democracy** is fostered through collaborative group work, where pupils are encouraged to share ideas, listen to others, and participate in respectful debates. **Respect** is developed as children work as a team, discuss findings, and support one another in their investigations. **Tolerance** is nurtured through learning about scientific contributions from diverse cultures and considering differing viewpoints, including respectful discussions around the relationship between religious beliefs and scientific understanding. **Individual liberty** is promoted by giving pupils the freedom to make choices in planning and carrying out investigations, while encouraging respectful dialogue around differing opinions. Finally, the **Rule of Law** is reinforced through the emphasis on following safety procedures and understanding the importance of rules during experiments, helping children recognise the consequences of actions and the value of responsibility in scientific enquiry.

Science beyond the Curriculum

At Upper Wharfedale Primary Federation, science learning extends far beyond the classroom walls. Pupils are given opportunities to explore scientific concepts through a wide range of enrichment activities that spark curiosity and deepen understanding. These include Science Days, STEM challenges, and enterprise projects, where children engage in hands-on investigations and problem-solving tasks.

Educational visits to museums, farms, and nature reserves provide real-world contexts for learning. For example, observing lambs being born at a local farm offers a powerful, first-hand experience of animal life cycles and reproduction, helping children connect classroom biology to the natural world around them.

Outdoor learning in our local environment encourages observation, exploration, and care for the natural world. We also invite guest speakers and professionals from scientific fields to share their expertise, helping children connect classroom learning to future careers. Through these experiences, pupils develop a broader appreciation of science as a dynamic and exciting part of everyday life.



Skills Progression

This document outlines the progression of skills and knowledge in the subject of science at The Upper Wharfedale Primary Federation

The statements for KS1 and Ks2 are taken from the National Curriculum. Where objectives for EYFS can be linked to the National Curriculum for science, these have been included and have been taken from the 'Development Matters' document.

Part 1 – Scientific Enquiry Skills

The first part of this document has been divided into four main sections:

- Asking Questions and Planning Investigations;
- Measuring and Recording;
- Concluding;

- Evaluating

These skills have been identified as the most relevant for pupils when following lines of scientific enquiry.

The skills shown are not assigned to a specific cycle. Class teachers will endeavour to give pupils the opportunity to develop every skill each year, linking to the knowledge for each topic where appropriate. Statements shown in blue text highlight in more detail the learning which will have been undertaken before a pupil moves to the next key stage.

Part 2 – Scientific Knowledge and Understanding

At The Upper Wharfedale Primary Federation we operate on an a cycle of Two years for KS1 and Four Years for KS2. When a child finishes a particular key stage, they will have been taught all of the relevant National Curriculum statements and will be ready to move onto the learning for the following key stage.

In UKS2, there are three objectives which are visited yearly, in order to tie in with our RSE and PSHE schemes of work These are:

Animals Including Humans

- Describe the changes as humans develop to old age

Living Things and Their Habitats

- 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

Part 1: Scientific Enquiry Skills

	EYFS		KS1	LKS2	UKS2
	Nursery & Reception		Year 1 & Year 2	Year 3 & Year 4	Year 5 & Year 6
Asking Questions and Planning Investigations	Questions why things happen. Beginning to understand 'why' and 'how' questions. Can select and use	Explains own knowledge and understanding, and asks appropriate questions of others.	N.C: Asking simple questions and recognising that they can be answered in different ways.	N.C: Asking relevant questions and using different types of scientific enquiries* to answer them. *The five enquiry types are: <ul style="list-style-type: none"> • Observation over time; • Pattern seeking; 	N.C: Plan different types of scientific enquiries* to answer questions, including recognising and controlling variables where necessary. *The five enquiry types are: <ul style="list-style-type: none"> • Observation over time; • Pattern seeking;

	<p>activities and resources with help.</p> <p>Understands use of objects (e.g. “What do we use to cut things?”)</p>			<ul style="list-style-type: none"> Identifying, classifying and grouping; Comparative and fair testing; Research using secondary sources. <p>N.C: Setting up simple practical enquiries, comparative and fair tests</p> <p>Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions;</p> <p>Recognise when a simple fair test is necessary and help to decide how to set it up.</p>	<ul style="list-style-type: none"> Identifying, classifying and grouping; Comparative and fair testing; Research using secondary sources. <p>Explore ideas and raise different kinds of questions;</p> <p>Make decisions about what observations to make, what measurements to use and how long to make them for – recognising that there may be a need to repeat results;</p> <p>Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why;</p> <p>Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</p>
--	---	--	--	---	---

<p>Measuring and Recording</p>	<p>Enjoys responsibility of carrying out small tasks.</p> <p>Is able to follow directions (if not intently focused on own choice of activity).</p> <p>Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.</p> <p>Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.</p> <p>Knows that information can be retrieved from computers.</p>	<p>Responds to instructions involving a two-part sequence.</p> <p>Extends vocabulary, especially by grouping and naming, exploring the meaning and sounds of new words.</p> <p>Shows understanding of the need for safety when tackling new challenges, and considers and manages some risks.</p> <p>Shows understanding of how to transport and store equipment safely.</p> <p>Practices some appropriate safety measures without direct supervision.</p> <p>Uses everyday language related to time.</p>	<p>N.C: Observing closely, using simple equipment.</p> <p>N.C: Performing simple tests.</p> <p>N.C: Gathering and recording data to help in answering questions.</p> <p>N.C: Identifying and classifying (as part of a line of scientific enquiry)</p> <p>Experience different types of scientific enquiries;</p> <p>Use simple features to compare objects, materials and living things, and, with help, decide how to sort and group them;</p> <p>With help, observe changes over time, and, with guidance, begin to notice patterns and relationships;</p> <p>Use simple measurements and equipment (for example, hand</p>	<p>N.C: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <p>N.C: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>N.C: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Talk about criteria for grouping, sorting and classifying;</p> <p>Use simple keys;</p> <p>Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them;</p>	<p>N.C: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>.</p> <p>N.C: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Choose the most appropriate equipment to make measurements and explain how to use it accurately;</p> <p>Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.</p>
---------------------------------------	--	---	---	--	---

		<p>Measures short periods of time in simple ways.</p> <p>Knows that information can be retrieved from books and computers.</p> <p>Uses ICT hardware to interact with age-appropriate computer software.</p>	<p>lenses, egg timers) to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out;</p> <p>With help, record and communicate their findings in a range of ways and begin to use simple scientific language.</p>	<p>Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used;</p> <p>Collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data;</p> <p>Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences.</p>	
--	--	---	---	--	--

<p>Concluding</p>	<p>Talks about why things happen and how things work.</p> <p>Uses talk to connect ideas, explain what is happening and anticipate what might happen next, recall and relive past experiences.</p>	<p>Uses talk to organise, sequence and clarify thinking, ideas, feelings and events</p> <p>Looks closely at similarities, differences, patterns and change.</p>	<p>N.C: Using their observations and ideas to suggest answers to questions</p> <p>With help, begin to use simple scientific language when communicating their findings.</p>	<p>N.C: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>N.C: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>N.C: Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>N.C: Using straightforward scientific evidence to answer questions or to support their findings.</p> <p>With help, look for changes, patterns, similarities and differences in data in order to draw simple conclusions and answer questions.</p>	<p>N.C: Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>N.C: 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</p> <p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas ;</p> <p>Use scientific language to describe how scientific ideas have developed over time.</p>
--------------------------	---	---	--	---	---

Evaluating				<p>N.C: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>Recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.</p>	<p>N.C: Using test results to make predictions to set up further comparative and fair tests</p>
------------	--	--	--	--	--

Relevant Early Learning Goals:

- Children follow instructions involving several ideas or actions. They answer ‘how’ and ‘why’ questions about their experiences and in response to stories or events.
- Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.
- Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.
- Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes

Part 2: Scientific Knowledge and Understanding

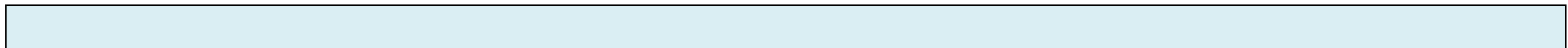
Biology					
Curriculum Area	EYFS		KS1	KS2	
Animals including humans	<p>Can tell adults when hungry or tired or when they want to rest or play.</p> <p>Observes the effects of activity on their bodies.</p>	<p>Eats a healthy range of foodstuffs and understands need for variety in food.</p> <p>Shows some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.</p> <p>Early Learning Goal: Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently.</p>	<p>Cycle A</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p>Cycle B</p> <p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds</p>	<p>Cycle A</p> <p>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</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Describe the simple functions of the basic parts of the digestive system in humans</p> <p>Identify the different types</p>	<p>Cycle C</p> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans</p> <p>Describe the changes as humans develop to old age (also repeated in year B.)</p>

			<p>and mammals – including carnivores, herbivores and omnivores</p> <p>Describe and compare the structure of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>Notice that animals, including humans, have offspring which grow into adults</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with which sense</p>	<p>of teeth in humans and their simple functions</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p><u>Evolution and Inheritance</u> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>
--	--	--	--	--	--

	EYFS		KS1	LKS2	UKS2
Living things and their habitats	Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.	Looks closely at similarities, differences, patterns and change.	Explore and compare the differences between things that are living, dead, and things that have never been alive	Cycle A Recognise that living things can be grouped in a variety of ways	Cycle C Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
	Can talk about some of the things they have observed such as plants, animals, natural and found objects.	Early Learning Goal: Children know about similarities and differences in relation to places, objects, materials and living things.	Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and different sources of food	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Describe the life process of reproduction in some plants and animals
	Developing an understanding of growth, decay and changes over time.	They talk about the features of their own immediate environment and how environments might vary from one another.	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	Recognise that environments can change and that this can sometimes pose dangers to living things.	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
	Shows care and concern for living things and the environment.	They make observations of animals and plants and explain why some things occur, and talk about changes.	Identify and name a variety of plants and animals in their habitats, including micro-habitats.		Give reasons for classifying plants and animals based on specific characteristics.

EYFS	KS1	Key Stage 2
------	-----	-------------

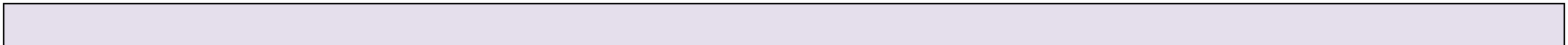
<p>Plants</p>	<p>Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.</p> <p>Can talk about some of the things they have observed such as plants, animals, natural and found objects.</p> <p>Developing an understanding of growth, decay and changes over time.</p> <p>Shows care and concern for living things and the environment.</p>	<p>Looks closely at similarities, differences, patterns and change.</p> <p>Early Learning Goal: Children know about similarities and differences in relation to places, objects, materials and living things.</p> <p>They talk about the features of their own immediate environment and how environments might vary from one another.</p> <p>They make observations of animals and plants and explain why some things occur, and talk about changes.</p>	<p>Cycle A</p> <p>Identify & name variety of common plants, including deciduous and evergreen trees</p> <p>Identify & describe basic structure of common flowering plants including trees</p> <p>Cycle B</p> <p>Observe & describe how seeds & bulbs grow into mature plants</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>Cycle D</p> <p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>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</p> <p>Investigate the way in which water is transported within plants</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>
----------------------	--	--	---	---



Chemistry				
	EYFS	KS1	Key Stage 2	
Everyday Materials: KS1 States of Matter: LKS2 Properties and Changes of Materials: UKS2	Beginning to be interested in and describe the texture of things.	Cycle A Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	Cycle A Compare and group materials together, according to whether they are solids, liquids or gases	Cycle C 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
		Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	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)	Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
		Cycle B Distinguish between an object and the material from which it is made	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
		Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock		Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
		Describe the simple physical properties of a variety of everyday materials		Demonstrate that dissolving, mixing and changes of state are reversible changes
		Compare and group together a		Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including

		variety of everyday materials on the basis of their simple physical properties		changes associated with burning and the action of acid on bicarbonate of soda.
--	--	--	--	--

	EYFS		KS1	KS2
Rocks				<p>Cycle A</p> <p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter</p>



Physics

	EYFS		KS1	Key Stage 2
Seasonal Changes	As above (living things and their habitats & plants.)	As above (living things and their habitats & plants.)	<p>Annually</p> <p>Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	
Earth and Space			<p>Links through the History Curriculum on moon landings</p>	<p>Cycle B</p> <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Describe the movement of the Moon relative to the Earth</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky.</p>

Sound	Explores and learns how sounds can be changed	Explores and learns how sounds can be changed	Links through the music curriculum when creating sounds	Cycle D 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.
-------	---	---	--	--

	KS2 Only	
Forces and Magnets	<p>Cycle D</p> <p>Compare how things move on different surfaces</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>Observe how magnets attract or repel each other and attract some materials and not others</p> <p>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</p> <p>Describe magnets as having two poles</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>Cycle B</p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>
Electricity	<p>Cycle D</p> <p>Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>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</p>	<p>Cycle B</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>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</p>

	<p>battery</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors</p>	<p>Use recognised symbols when representing a simple circuit in a diagram.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Light</p>	<p>Cycle B</p> <p>Recognise that we need light in order to see things and that dark is the absence of light</p> <p>Notice that light is reflected from surfaces</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Find patterns in the way that the size of shadows change.</p>	<p>Cycle D</p> <p>Recognise that light appears to travel in straight lines</p> <p>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</p> <p>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</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>