



A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

National curriculum in England: science programmes of study

At Sutton-on-Sea Community Primary School, we provide an exciting, practical and balanced science curriculum for all pupils. Our science teaching actively encourages pupils to work independently and with others in practical ways. It develops subject knowledge and understanding, investigative skills and scientific vocabulary.

A high-quality science education provides the foundations for understanding our world. Science continues to change our lives and is vital to our world's future prosperity and sustainability; we believe all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. We aim to achieve that through building key knowledge and concepts; pupils recognising the power of rational explanation and developing a sense of excitement and curiosity in pupils about natural phenomena.

We teach the skills of explanation, prediction and analysis, hoping that the future scientists, doctors, nurses and Nobel Prize winners start here. Wherever you look, whatever you do and wherever you go, science is all around us. At Sutton-on-Sea Community Primary School, we develop pupils' understanding of science in a fun and engaging way.

Intent

We believe that it is important for pupils to develop their own understanding and discover things for themselves. It is vital that pupils learn in meaningful ways, for example learning why things work and do not work. Our curriculum inspires pupils' curiosity and allows them to make the necessary connections. We develop their knowledge through hands on activities and practical experiments using the Developing Experts scheme of work.

Our aims are to ensure that all pupils:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

We do this through providing a rich, relevant and engaging curriculum. We ensure that all students are challenged to achieve their potential, work collaboratively and become resilient learners. Within Science,

we strive towards growing pupils' confidence, developing their own views and embodying our school and British values.

Implementation

In EYFS, as part of the EYFS Framework, children improve their science through the 'knowledge and understanding of the world' strand of the curriculum.

Learning is planned around the following objectives:

- Comment and question about the world; including where they live
- Talk about some of the things they have observed such as plants, animals, natural and found objects
- Talk about why things happen and how things work
- Develop an understanding of growth, decay and changes over time
- Show care and concern for living things and the environment
- Look closely at similarities, differences, patterns and change

As Science is a core subject, we ensure its prominence across the school through the delivery of cross-curricular teaching as well as the discrete teaching of subjects and units. The implementation of the science curriculum is supported through the Developing Experts Scheme of learning.

Knowledge organisers reflect the progression of each area of the curriculum. For each topic, these include key vocabulary, prior learning and expected outcomes for the end of the topic. Knowledge Organisers support pupils to integrate new information into existing schemas, thereby aiding retention and retrieval and securing 'sticky knowledge'.

Pupils are provided with a range of enrichment opportunities to raise cultural capital such as workshops, STEM link ups, gardening opportunities and Science Week.

Impact

We measure the impact through pupils acquiring age-appropriate knowledge and having the skills to develop their own learning. Creative, independent thinking scientists are developed with the motivation, skills to succeed in a changing world.

Through the delivery of our Science curriculum, we provide pupils with:

- Knowledge and understanding about Science
- A wide range of scientific skills
- Rich Scientific vocabulary
- High science aspirations
- Passion, enthusiasm and enjoyment around Science.

We regularly reflect on the standards across year groups to support and challenge pupils. We celebrate the children's learning and successes. Through tracking standards termly, we use these assessments and feedback to update planning and identify and address barriers. We benchmark against national standards through marking and moderating across the school to ensure consistency. We strive to ensure that pupils achieve highly, embody our core values and have a deep knowledge and understanding of science.

EYFS Science (Understanding the World) curriculum overview

Reception		
	Cycle A	Cycle B
Autumn 1	Animals Working towards ELGs UTW: Explore the natural world around them, making observations and drawing pictures of animals and plants UTW: 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 UTW: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	Animals Working towards ELGs UTW: Explore the natural world around them, making observations and drawing pictures of animals and plants UTW: 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 UTW: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter
Autumn 2	Materials Working towards ELGs UTW: 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 UTW: Explore the natural world around them, making observations and drawing pictures of animals and plants UTW: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	Materials Working towards ELGs UTW: 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 UTW: Explore the natural world around them, making observations and drawing pictures of animals and plants UTW: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter
Spring 1	Forces and Machines Working towards ELGs UTW: Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps	Forces and Machines Working towards ELGs UTW: Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps
Spring 2	Space and Plants Working towards ELGs UTW: 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 UTW: Explore the natural world around them, making observations and drawing pictures of animals and plants	Space and Plants Working towards ELGs UTW: 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 UTW: Explore the natural world around them, making observations and drawing pictures of animals and plants UTW: Describe their immediate environment using knowledge from observation,

	UTW: Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps UTW: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	discussion, stories, non-fiction texts and maps UTW: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter
Summer 1	Our Body Working towards ELGs UTW: Explore the natural world around them, making observations and drawing pictures of animals and plants UTW: Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class UTW: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	Our Body Working towards ELGs UTW: Explore the natural world around them, making observations and drawing pictures of animals and plants UTW: Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class UTW: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter
Summer 2	The Senses Working towards ELGs EAD: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function EAD: Make use of props and materials when role playing characters in narratives and stories	The Senses Working towards ELGs EAD: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function EAD: Make use of props and materials when role playing characters in narratives and stories

Key Stage One Science curriculum overview

Year 1/2		
	Cycle A	Cycle B
Autumn 1	Animals including humans: All about Me Year 1 tab on DE National Curriculum reference - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Scientific enquiry covered - Identify & classify - Perform simple tests - Gather and record data to help in answering questions	Seasonal Changes Year 1 tab on DE National Curriculum reference - Observe changes across the four seasons - Observe and describe weather associated with the seasons and how day length varies Scientific enquiry covered - Use observations and ideas to suggest answers to questions - Identify & classify

	• Use observations and ideas to suggest answers to questions	• Perform simple tests • Gather and record data to help in answering questions
Autumn 2	Exploring Everyday Materials 1 Year 1 tab on DE National Curriculum reference • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. • Distinguish between an object and the material it is made from. • 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. Scientific enquiry covered • Identify & classify • Use observations and ideas to suggest answers to questions • Perform simple tests • Gather and record data to help in answering questions	Animals including humans: All about animals Year 1 tab on DE National Curriculum reference • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • Identify and name a variety of common animals that are carnivores, herbivores and omnivores Scientific enquiry covered • Group and sort • Use observations and ideas to suggest answers to questions
Spring 1	Living Things and their habitats Year 2 tab on DE National Curriculum reference • Explore and compare the differences between things that are living, dead, and things that have never been alive. • 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. • Identify and name different sources of food. Scientific enquiry covered • Identifying & classifying • Observing closely, using simple equipment	Uses of everyday Materials Year 2 tab on DE National Curriculum reference • Identify and compare the suitability of a variety of everyday materials. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching Scientific enquiry covered • Use observations and ideas to suggest answers to questions • Perform simple tests • Gather and record data to help in answering questions

	• Use observations and ideas to suggest answers to questions • Asking simple questions and recognising that they can be answered in different ways • Gathering and recording data to help in answering questions	
Spring 2	Plants Year 1 and 2 tabs on DE National Curriculum reference • 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. • Understand the requirements of plants for germination, growth and survival, as well as, the processes of reproduction and growth in plants. Scientific enquiry covered • Identify & classify • Observe closely, using simple equipment • Ask simple questions and recognise that they can be answered in different ways • Perform simple tests • Use observations and ideas to suggest answers to questions • Gather and record data to help in answering questions	Exploring Everyday Materials 2 Year 1 tab on DE National Curriculum reference • Describe the simple physical properties of everyday materials • Compare and group together a variety of everyday materials on the basis of their simple physical properties Scientific enquiry covered • Perform simple tests • Use observations and ideas to suggest answers to questions • Identify & classify
Summer 1	Animals including humans: Growth Year 2 tab on DE National Curriculum reference • 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. Scientific enquiry covered • Use observations and ideas to suggest answers to questions	Plants Year 1 and 2 tabs on DE National Curriculum reference • Become familiar with common names of flowers and plant structures including seeds • Identify and describe the basic structure of a variety of common flowering plants, including trees • Identify and name a variety of common wild and garden plants • Identify and name a variety of deciduous and evergreen trees • Understand how plants change over time

	- Identify & classify - Perform simple tests	- Observe the growth of planted flowers - Become familiar with plant structures - Keep records of how plants change over time Scientific enquiry covered - Ask simple questions - Observe closely and use simple equipment - Use observations and ideas to suggest answers to questions - Identify & classify - Gather and record data to help in answering questions
Summer 2	Living Things and their habitats: Habitats around the world Year 2 tab on DE National Curriculum reference - 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. Scientific enquiry covered - Identify & classify - Use observations and ideas to suggest answers to questions - Gather and record data to help in answering questions - Asking simple questions and recognising that they can be answered in different ways	Animals including humans: Life Cycles Year 2 tab on DE National Curriculum reference - Notice that animals, including humans, have offspring which grow into adults Scientific enquiry covered - Identify & classify - Use observations and ideas to suggest answers to questions - Gather and record data to help in answering questions - Asking simple questions and recognise that they can be answered in different ways

Lower Key Stage Two Science curriculum overview

Year 3/4		
	Cycle A	Cycle B
Autumn 1	Forces and Magnets Year 3 tab on DE National Curriculum reference	Scientific Enquiry Year 3 tab on DE National Curriculum reference & Scientific enquiry covered

	• Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • Compare how things move on different surfaces • Describe magnets as having 2 poles • Predict whether 2 magnets will attract or repel each other, depending on which poles are facing • 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 Scientific enquiry covered • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Setting up simple practical enquiries, comparative and fair tests • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	• Asking relevant questions and using different types of scientific enquiries to answer them • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • 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 • Setting up simple practical enquiries, comparative and fair tests • Using straightforward scientific evidence to answer questions or to support their findings • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
Autumn 2	Light Year 3 tab on DE National Curriculum reference • 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	Rocks Year 3 tab on DE National Curriculum reference • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Explore how and why [rocks] might have changed over time (non-statutory) • 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

	- Find patterns in the way that the size of shadows change Scientific enquiry covered - 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 scientific ideas and processes	Scientific enquiry covered - 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 - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - Identifying differences, similarities or changes related to simple scientific ideas and processes
Spring 1	Animals, including humans (Digestive system) Year 4 tab on DE National Curriculum reference - Describe the simple functions of the basic parts of the digestive system in humans - Identify the different types of teeth in humans and their simple functions - Construct and interpret a variety of food chains, identifying producers, predators and prey Scientific enquiry covered - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Making systematic and careful observations - Reporting on findings from enquiries, including oral and written explanations - Setting up simple practical enquiries, comparative and fair tests - Using results to draw simple conclusions, make predictions for	Animals, including humans (skeletons) Year 3 tab on DE National Curriculum reference - Identify that humans and some other animals have skeletons and muscles for support, protection and movement - 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 Scientific enquiry covered - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - 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 - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

	new values, suggest improvements and raise further questions	Identifying differences, similarities or changes related to simple scientific ideas and processes
Spring 2	Plants Year 3 tab on DE National Curriculum reference - 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 Scientific enquiry covered - 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 - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - 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 - Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Living things and their habitats Year 4 tab on DE National Curriculum reference - Recognise that living things can be grouped in a variety of ways - Making a guide to local living things (non-statutory) - Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Scientific enquiry covered - 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 - 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
Summer 1	Electricity Year 4 tab on DE	States of Matter Year 4 tab on DE

	National Curriculum reference - 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 Scientific enquiry covered - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Using straightforward scientific evidence to answer questions or to support their findings - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - 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	National Curriculum reference - 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 Scientific enquiry covered - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - Using straightforward scientific evidence to answer questions or to support their findings - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
Summer 2	Sound Year 4 tab on DE National Curriculum reference	Living Things and their habitats - Conservation Year 4 tab on DE National Curriculum reference

	- 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 Scientific enquiry covered - 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 scientific ideas and processes - 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 - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	- Recognise that environments can change and that this can sometimes pose dangers to living things Scientific enquiry covered - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - Using straightforward scientific evidence to answer questions or to support their findings - 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 - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
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Y4/5 Science curriculum overview

Year 4/5		
	Cycle A	Cycle B
Autumn 1	Forces Y5 (progression from Y3) National Curriculum reference Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	Animals, including humans Y4 National Curriculum reference - Describe the simple functions of the basic parts of the digestive system in humans - Identify the different types of teeth in humans and their simple functions

	- 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 Scientific enquiry covered - Identifying scientific evidence that has been used to support or refute ideas or arguments - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - 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 - Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	- Construct and interpret a variety of food chains, identifying producers, predators and prey Scientific enquiry covered - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Making systematic and careful observations - Reporting on findings from enquiries, including oral and written explanations - 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
Autumn 2	Properties of materials Y5 (progression from Y2) National Curriculum reference - 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 - Compare and group together everyday materials based on evidence from comparative and fair tests, including their conductivity of heat - Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic - Know that some materials will dissolve in liquid to form a solution,	Living things and their habitats Y4 National Curriculum reference - Recognise that living things can be grouped in a variety of ways - Making a guide to local living things (non-statutory) - Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Scientific enquiry covered - 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

	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 Scientific enquiry covered • 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 • 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 • Using test results to make predictions to set up further comparative and fair tests	• 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
Spring 1	Changes of materials Y5 (progression from Y2) National Curriculum reference • Describe how to recover a substance from a solution • 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 Scientific enquiry covered	Living Things and their habitats - Conservation Y4 National Curriculum reference • Recognise that environments can change and that this can sometimes pose dangers to living things Scientific enquiry covered • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Using straightforward scientific evidence to answer questions or to support their findings • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

	• 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 • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Using test results to make predictions to set up further comparative and fair tests	• Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
Spring 2	Animals, including humans Y5 (Refer to Y4 knowledge as needed as Y4s haven't covered this. Puberty lessons only to be taught to Y5) National Curriculum reference • Describe the changes as humans develop to old age Scientific enquiry covered • 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 • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Identifying scientific evidence that has been used to support or refute ideas or arguments	States of Matter Y4 National Curriculum reference • 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 Scientific enquiry covered • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Using straightforward scientific evidence to answer questions or to support their findings • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

		Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
Summer 1	Earth and Space Y5 National Curriculum reference - Describe the sun, Earth and moon as approximately spherical bodies - 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 - Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky Scientific enquiry covered - Identifying scientific evidence that has been used to support or refute ideas or arguments - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - 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 - Using test results to make predictions to set up further comparative and fair tests	Sound Y4 National Curriculum reference - 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 Scientific enquiry covered - 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 scientific ideas and processes - 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 - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
Summer 2	Living things and their habitats Y5 (refer to Y4 knowledge as needed as Y4s haven't covered this) National Curriculum reference	Electricity Y4 National Curriculum reference Identify common appliances that run on electricity

	- 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 Scientific enquiry covered - 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 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	- 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 Scientific enquiry covered - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Using straightforward scientific evidence to answer questions or to support their findings - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - 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
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Y6 Science curriculum overview

Year 6		
	Cycle A	Cycle B
Autumn 1	Electricity National Curriculum reference Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit	Electricity National Curriculum reference 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 Scientific enquiry covered • 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 • 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 • Using test results to make predictions to set up further comparative and fair tests • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	• 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 Scientific enquiry covered • 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 • 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 • Using test results to make predictions to set up further comparative and fair tests • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
Autumn 2	Light National Curriculum reference • 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	Light National Curriculum reference • 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

	shadows have the same shape as the objects that cast them Scientific enquiry covered - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - 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 degree of trust in results, in oral and written forms such as displays and other presentations	have the same shape as the objects that cast them Scientific enquiry covered - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - 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 degree of trust in results, in oral and written forms such as displays and other presentations
Spring 1	Animals including humans National Curriculum reference - 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 Scientific enquiry covered - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - Identifying scientific evidence that has been used to support or refute ideas or arguments	Animals including humans National Curriculum reference - 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 Scientific enquiry covered - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - Identifying scientific evidence that has been used to support or refute ideas or arguments

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Spring 2	Living things and their habitats National Curriculum reference - 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 Scientific enquiry covered - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - 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 - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - 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	Living things and their habitats National Curriculum reference - 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 Scientific enquiry covered - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - 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 - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - 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

Summer 1	Evolution and inheritance National Curriculum reference • 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 Scientific enquiry covered • 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	Evolution and inheritance National Curriculum reference • 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 Scientific enquiry covered • 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
Summer 2	Looking after the environment Scientific enquiry covered • 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 • Using test results to make predictions to set up further comparative and fair tests	Looking after the environment Scientific enquiry covered • 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 • Using test results to make predictions to set up further comparative and fair tests