

# Science Curriculum Overview



This Curriculum Overview shows what your child will learn in Science during their time at The Free School Norwich. This is reviewed annually and may be adapted to meet the needs of individual children or classes, and where appropriate, will be linked to events or places in our local environment.

Year 1 Science					
Harvest	Christmas	Winter	Spring	Whitsun	Summer
The Human Body Biology	Materials Chemistry	Planting A Biology	Animals (Cont). Biology	Plants Biology	Growing and Cooking Sustainability
<p><b>Sequence:</b> Name and identify parts of the human body Draw and label parts of the human body Identify humans use their eyes to see Identify humans use their ears to hear Identify humans use their tongues to taste Identify touch is sensed by the skin Identify humans use their nose to smell</p> <p><b>Vocabulary:</b> Hair, ear, teeth, neck, arm, knee, leg, hand, elbow, mouth, nose, eye, feet, light, dark, blind, hear, loud, noisy, sweet, salty, bitter, savoury, rough,</p>	<p><b>Sequence:</b> Explore wood, plastic, glass, metal and sort these into categories Explore and observe rocks Identify objects and their materials Explore melting and freezing Identify materials that float or sink Identify materials that absorb water Investigate a range of materials in a comparative test</p> <p><b>Vocabulary:</b> Material, soft, hard, shiny, dull, rock, heavy, light, rough, smooth, object, material, metal, wood, plastic, glass, wool, solid, liquid, melt, freeze, ice, float, sink, absorb, variable,</p>	<p><b>Sequence:</b> Explore plant growth over time – plant seeds and observe any changes over the rest of the term</p> <p><b>Vocabulary:</b> Plant, flower, leaf, stem, roots, seed, soil</p> <p><b>National Curriculum Links:</b> Identify and describe the basic structure of a variety of common flowering plants, including trees</p> <p>Working Scientifically – Asking simple questions and recognising that they can be answered in different ways.</p>	<p><b>Sequence:</b> Explore herbivores and their key features Identify and name animals that are omnivores</p> <p><b>Vocabulary:</b> Animal, herbivore, fruit, plant, vegetable, omnivore</p> <p><b>National Curriculum Links:</b> Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Working Scientifically – Identifying and classifying.</p>	<p><b>Sequence:</b> Name and identify parts of a plant Identify and name tree parts Name and identify common wildflowers and garden plants Identify plants in the local area Know that deciduous trees lose leaves in autumn Know that evergreen trees keep their leaves all year round Identify trees in the local area</p> <p><b>Vocabulary:</b> Flower, petal, leaf, stem, roots, trunk, branch, fruit, wildflower, daisy, garden plant, sunflower, nettle, buttercup, dandelion,</p>	<p><b>Sequence:</b> Explore how some plants can be grown and eaten for food Reflect on the plants they have grown this year</p> <p><b>Vocabulary:</b> Crops, fruit, vegetable, seed, farmer, plant, cook</p> <p><b>National Curriculum Links:</b> Working Scientifically – Asking simple questions and recognising that they can be answered in different ways Using their observations and ideas to suggest answers to questions.</p>

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<p>smooth, hard, soft, smell, scent, stench</p> <p><b>National Curriculum Links:</b> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Working scientifically – Asking simple questions and recognising that they can be answered in different ways. Using their observations and ideas to suggest answers to questions. Working scientifically – Performing simple tests.</p>	<p>independent, dependent, controlled, transparent, opaque</p> <p><b>National Curriculum Links:</b> Describe the simple physical properties of a variety of everyday materials. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. Distinguish between an object and the material from which it is made. Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p>Working Scientifically – Identifying and classifying. Observing closely, using simple equipment. Performing simple tests. Gathering and recording data to help in answering questions. Using their observations and ideas to suggest answers to questions.</p>			<p>deciduous, horse chestnut, oak, sycamore, evergreen, pine, holly, needles</p> <p><b>National Curriculum Links:</b> 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, including deciduous and evergreen trees.</p> <p>Working Scientifically – Identifying and classifying. Observing closely, using simple equipment. Gathering and recording data to help in answering questions. Using their observations and ideas to suggest answers to questions.</p>	
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Seasonal Changes Biology	Seasonal Changes Biology	Animals Biology	Caring for the planet Sustainability	Planting C Biology	Seasonal Changes Biology
<p><b>Sequence:</b> Know a year is split into 4 seasons Understand changes in autumn Collect and record data of weather</p> <p><b>Vocabulary</b> Season, autumn, daylight, night, weather, rainfall, rain gauge</p> <p><b>National Curriculum Links:</b> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.  Working scientifically – Asking simple questions and recognising that they can be answered in different ways. Working scientifically – Gathering and recording data to help in answering questions.</p>	<p><b>Sequence:</b> Know seasonal changes in winter Gather and record data in winter</p> <p><b>Vocabulary</b> Season, winter, daylight, weather, night, rain, cloud, frost, snow, sun</p> <p><b>National Curriculum Links:</b> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.  Working Scientifically – Asking simple questions and recognising that they can be answered in different ways. Gathering and recording data to help in answering questions.</p>	<p><b>Sequence:</b> Identify mammals and their features Explore and identify birds and their features Explore different types of fish and their features Identify amphibians and their features Explore reptiles and their features Compare and group animals Explore different carnivores and their key characteristics</p> <p><b>Vocabulary:</b> Animal, mammal, fur, wild mammal, pet, bird, wings, beak, feathers, webbed feet, flipper, fish, fin, tail, scales, gills, amphibian, frog, toad, newt, reptile, scales, lizard, crocodile, turtle, carnivore, sharp teeth</p> <p><b>National Curriculum Links:</b> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p>	<p><b>Sequence:</b> Begin to know actions that are sustainable and the effect they can have on our planet Know that we all have a responsibility to look after our planet</p> <p><b>Vocabulary:</b> Earth, plant, animal, helpful, harmful, material, recycle, reuse</p> <p><b>National Curriculum Links:</b> Working Scientifically – Explore the world around them and raise their own questions (non-statutory). Using their observations and ideas to suggest answers to questions.</p>	<p><b>Sequence:</b> Explore how their seeds have changed over time Explore plant growth over time during summer</p> <p><b>Vocabulary:</b> Flower, leaf, root, stem, seed, soil, measure, growth, trowel</p> <p><b>National Curriculum Links:</b> 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.  Working Scientifically – Observing closely, using simple equipment. Gathering and recording data to help in answering questions.</p>	<p><b>Sequence:</b> Explore seasonal changes in summer Collect a range of data and compare it to other seasons Recap the main changes in each season</p> <p><b>Vocabulary:</b> Summer, daylight, weather, night, season, rainy, windy, cloudy, sunny, record, autumn, winter, spring</p> <p><b>National Curriculum Links:</b> Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies.  Working Scientifically – Asking simple questions and recognising that they can be answered in different ways. Gathering and recording data to help in answering questions. Using their observations and ideas to suggest answers to questions.</p>

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		<p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Working Scientifically – Asking simple questions and recognising that they can be answered in different ways.</p> <p>Gathering and recording data to help in answering questions.</p> <p>Identifying and classifying. Using their observations and ideas to suggest answers to questions.</p>			
			<b>Seasonal Changes</b> Biology		
			<p><b>Sequence:</b>          Identify seasonal changes in Spring          Gather and collect data in spring</p> <p><b>Vocabulary:</b>          Spring, daylight, night, weather, season, rain, sleet, cloud, sun, snow, wind</p>		

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			<p><b>National Curriculum Links:</b>          Observe changes across the four seasons.          Observe and describe weather associated with the seasons and how day length varies</p> <p>Working Scientifically –          Asking simple questions and recognising that they can be answered in different ways.          Gathering and recording data to help in answering questions.</p>		
			<p><b>Planting B</b>          Biology</p>		
			<p><b>Sequence:</b>          Explore how the seeds they planted in Planting A have changed over time          Explore plant growth over time by planting in spring</p> <p><b>Vocabulary:</b>          Plant, flower, leaf, stem, roots, seed, soil,</p> <p><b>National Curriculum Links:</b>          Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>		

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			Working Scientifically – Observing closely, using simple equipment. Gathering and recording data to help in answering questions.		
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## Year 2 Science

Harvest	Christmas	Winter	Spring	Whitsun	Summer
<b>Animals' Needs for Survival</b> Biology	<b>Materials</b> Chemistry	<b>Plants (Light and Dark)</b> Biology	<b>Living Things and their Habitats (Cont).</b> Biology	<b>Plants (bulbs and seeds)</b> Biology	<b>Plants (bulbs and seeds)</b> Biology
<p><b>Sequence:</b> Know what a mammal is and what it needs to survive Know what birds need to survive Know what fish need to survive Identify and name common amphibians, knowing what they need to survive Identify and name common reptiles, knowing what they need to survive Identify the needs for survival in humans</p>	<p><b>Sequence:</b> Identify, group and sort materials Explore wood, paper and cardboard in more detail Look at materials brick and rock Explore the simple properties of glass and plastic Explore a range of metallic objects and perform simple tests Name and identify a range of natural and man-made fabrics</p>	<p><b>Sequence:</b> Explore a wide range of plants Name and identify the parts of common plants and trees Explore conditions plants need to grow Plan a comparative test to explore plant growth Carry out a comparative test to explore plant growth</p> <p><b>Vocabulary:</b> Plant, flower, fruit, vegetable, herb, blossom, stem, leaf, trunk, branch,</p>	<p><b>Sequence:</b> Explore microhabitats and compare these to habitats Explore links between habitat and diet Recognise and build simple food chains Explore and compare the differences between things that are living, things that are dead and things that have never been alive</p> <p><b>Vocabulary:</b> Microhabitat, insect, snail, spider, habitat, diet, carnivore, herbivore, omnivore, food chain,</p>	<p><b>Sequence:</b> Know the difference between bulbs and seeds Identify best conditions for plant growth Plan an observation over time Grow bulbs and seeds over different temperature conditions</p> <p><b>Vocabulary:</b> Bulb, seed, plant, shoot, roots, sunlight, temperature, growth, compost, measurement, observe</p>	<p><b>Sequence:</b> Look at the findings of planting bulbs and seeds</p> <p><b>Vocabulary:</b> Bulb, seed, plant, shoot, roots, sunlight, temperature, growth, compost, measurement, observe</p> <p><b>National Curriculum Links:</b> Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Working Scientifically –</p>

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<p><b>Vocabulary:</b> Mammal, fur, carnivore, herbivore, omnivore, bird, feathers, beak, insect, insectivore, fish, scales, gills, fin, amphibian, webbed feet, frog, toad, newt, reptile, adult, baby, shelter</p> <p><b>National Curriculum Links:</b> Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Working scientifically – Asking simple questions and recognising that they can be answered in different ways. Gathering and recording data to help in answering questions. Identifying and classifying. Using their observations and ideas to suggest answers to questions.</p>	<p>Explore how different objects can be made from different materials Carry out simple tests to change the shape of an object Plan a comparative test Carry out a comparative test to answer an enquiry question</p> <p><b>Vocabulary:</b> Material, natural, man-made, recycle, smooth, rough, flexible, rigid, rock, stone, pebble, brick, brittle, flexible, transparent, translucent, opaque, hard, shiny, dull, fabric, tough, lightweight, soft, squash, bend, twist, stretch, independent variable, dependent variable, controlled variable, waterproof, strong, breakable</p> <p><b>National Curriculum Links:</b> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p>	<p>seed, plant, sunlight, soil, independent variable, dependent variable, controlled variable, compost</p> <p><b>National Curriculum Links:</b> Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p> <p>Working Scientifically –</p> <p>Observing closely, using simple equipment Asking simple questions and recognising that they can be answered in different ways. Performing simple tests.</p>	<p>living, dead, never alive, plant, animal</p> <p><b>National Curriculum Links:</b> Identify and name a variety of plants and animals in their habitats, including microhabitats. 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. 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. Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>Working Scientifically – Observing closely, using simple equipment. Gathering and recording data to help in answering questions.</p>	<p><b>National Curriculum Links:</b> 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.</p> <p>Working Scientifically – Observing closely, using simple equipment. Record and communicate their findings in a range of ways and begin to use simple scientific language (non-statutory). Asking simple questions and recognising that they can be answered in different ways. Performing simple tests.</p>	<p>Observing closely, using simple equipment.</p>
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	<p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>Working Scientifically – Identifying and classifying. Performing simple tests. Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (non-statutory). Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Using their observations and ideas to suggest answers to questions.</p>		Identifying and classifying.		
<p><b>Humans</b> Biology</p>	<p><b>Plastic</b> Sustainability</p>	<p><b>Living Things and their Habitats</b> Biology</p>	<p><b>Plants (Light and Dark)</b> Biology</p>	<p><b>Growing Up</b> Biology</p>	<p><b>Growing Up</b> Biology</p>
<p><b>Sequence:</b> Investigate the effect of exercise on heart rate Identify, name, sort and group different foods</p>	<p><b>Sequence:</b> Explore how plastic is helpful and harmful Explore how plastic waste can be reduced</p> <p><b>Vocabulary:</b></p>	<p><b>Sequence:</b> Know what a habitat is Explore animals and plants that live in a polar habitat Explore animals and plants that survive in the desert</p>	<p><b>Sequence:</b> Look at findings from their comparative test in previous Plants block</p> <p><b>Vocabulary:</b></p>	<p><b>Sequence:</b> Identify offspring as animal's young Know the life cycle of a human</p>	<p><b>Sequence:</b> Record first-hand observations of the life cycle of a butterfly</p> <p><b>Vocabulary:</b></p>



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<p>Know how to keep clean and why it is important Know how to maintain good oral hygiene</p> <p><b>Vocabulary:</b> Heart, exercise, physical health, mental health, healthy, unhealthy, diet, meat, vegetables, fruit, sugar, germs, hygiene, disease, doctor, teeth, plaque, filling, gums</p> <p><b>National Curriculum Links:</b> Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Working scientifically – Gathering and recording data to help in answering questions. Identifying and classifying. Observing closely, using simple equipment.</p>	<p>Plastic, man-made, recycle, single-use plastic</p> <p><b>National Curriculum Links:</b> Working Scientifically – Using their observations and ideas to suggest answers to questions. Explore the world around them and raise their own questions (non-statutory).</p>	<p>Explore the habitats of ocean animals Identify animals and plants that live in woodland habitats</p> <p><b>Vocabulary:</b> Habitat, mammal, bird, deciduous, evergreen, carnivore, herbivore, hibernate, reptile, cactus, rainfall, ocean, seagrass, fish, woodland, fern, moss</p> <p><b>National Curriculum Links:</b> 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.</p> <p>Working Scientifically – Gathering and recording data to help in answering questions. Using their observations and ideas to suggest answers to questions.</p>	<p>Plant, seed, soil, sunlight, dark, living, dead</p> <p><b>National Curriculum Links:</b> Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>Working Scientifically – Gathering and recording data to help in answering questions.</p>	<p>Explore simple life cycles of a range of mammals Explore the life cycle of a frog Explore the life cycle of a butterfly Compare life cycles of different animals</p> <p><b>Vocabulary:</b> Offspring, growth, egg, adult, parent, baby, child, teenager, adult, life cycle, mammal, baby, adolescent, adult, amphibian, frogspawn, tadpole, froglet, egg, caterpillar, pupa, butterfly, compare</p> <p><b>National Curriculum Links:</b> Notice that animals, including humans, have offspring which grow into adults.</p> <p>Working Scientifically – Identifying and classifying. Asking simple questions and recognising that they can be answered in different ways.</p>	<p>Life cycle, egg, caterpillar, pupa, butterfly, compare</p> <p><b>National Curriculum Links:</b> Notice that animals, including humans, have offspring which grow into adults.</p> <p>Working Scientifically – Observing closely, using simple equipment.</p>
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		Identifying and classifying.		Record and communicate their findings in a range of ways and begin to use simple scientific language (non-statutory). Observing closely, using simple equipment. Using their observations and ideas to suggest answers to questions.	
					<b>Wildlife</b> Sustainability
					<p><b>Sequence:</b> Explore how wildlife is beneficial for humans Explore how they can care for local wildlife</p> <p><b>Vocabulary:</b> Food chain, habitat, crops, insect, wildlife, nature, local</p> <p><b>National Curriculum Links:</b> Working Scientifically – Asking simple questions and recognising that they can be answered in different ways. Using their observations and ideas to suggest answers to questions.</p>

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Year 3 Science					
Harvest	Christmas	Winter	Spring	Whitsun	Summer
Skeletons Biology	Nutrition and Diet (Cont). Biology	Fossils Chemistry	Light Physics	Plants A Biology	Forces Physics
<p><b>Sequence:</b> Name and identify bones in the human body Know the functions of the skeleton and specific bones Name and identify bones in a range of animals Identify animals with and without a spine Explore whether all skeletons are the same</p> <p><b>Vocabulary</b> Skeleton, skull, pelvis, femur, spine, ribcage, mammal, bird, fish, amphibian, reptile, antennae, insect, exoskeleton</p> <p><b>National Curriculum Links:</b> Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p><b>Sequence:</b> Compare diets Explore the wider animal kingdom to learn about the different dietary requirements of animals</p> <p><b>Vocabulary:</b> Vegan diet, vegetarian diet, pescatarian diet, omnivorous diet, herbivore, carnivore, omnivore</p> <p><b>National Curriculum Links:</b> 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>Working Scientifically – Identifying differences, similarities or changes related to simple scientific ideas and processes.</p>	<p><b>Sequence:</b> Explore fossils and know what a fossil is Explore the process of fossilisation</p> <p><b>Vocabulary:</b> Fossil, rock, skeleton, shell, sediment, fossilisation</p> <p><b>National Curriculum Links:</b> Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Working Scientifically - Asking relevant questions and using different types of scientific enquiries to answer them. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>	<p><b>Sequence:</b> Identify light sources: natural and artificial Know some of the harmful effects of the Sun and how to protect their eyes Explain how we are able to see objects Know how shadows are formed Identify opaque, translucent and transparent materials Plan a fair test to investigate size of shadows Work scientifically to investigate size of shadows Draw conclusions and evaluate an investigation</p> <p><b>Vocabulary:</b> Light, eyes, light sources, natural, artificial, Sun, sunglasses, protect, reflection, shiny, dull, shadow, opaque, translucent, transparent, independent variable,</p>	<p><b>Sequence:</b> Explore the different parts of a plant and their functions Apply knowledge of plant parts Plan a scientific investigation Carry out a plant growth experiment Explore stem and water transportation Know the process of germination Identify the reproductive parts in a plant Know the process of pollination Know how seeds can be dispersed Know the life cycle of a plant</p> <p><b>Vocabulary:</b> Leaf, stem, roots, flower, soil, dissection, independent variable, dependent variable,</p>	<p><b>Sequence:</b> Define forces as push or pull Explore friction Plan a comparative test Investigate how different materials affect friction</p> <p><b>Vocabulary:</b> Push, pull, force, contact force, friction, smooth, rough, independent variable, dependent variable, controlled variable, data, prediction</p> <p><b>National Curriculum Links:</b> Compare how things move on different surfaces.</p> <p>Working Scientifically – Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific</p>

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<p>Working scientifically – Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Talk about criteria for grouping, sorting and classifying (non-statutory).</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>	<p>Using straightforward scientific evidence to answer questions or to support their findings</p>		<p>controlled variable, dependent variable, distance, conclusion, evaluation</p> <p><b>National Curriculum Links:</b>          Recognise that they need light in order to see things and that darkness is the absence of light.          Recognise that light from the Sun can be dangerous and that there are ways to protect our eyes.          Notice that light is reflected from surfaces.          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.</p> <p>Working scientifically – Identifying differences, similarities or changes related to simple scientific ideas and processes.          Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p>	<p>controlled variable, seed, scales, measuring cylinder, water transportation, germination, seedling, seed coating, petals, stamen, pistil, eggs, reproductive organs, pollen, pollination, pollinators, seed dispersal, wind dispersal, animal dispersal, explosion dispersal, water dispersal</p> <p><b>National Curriculum Links:</b>          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.</p>	<p>evidence to answer questions or to support their findings.          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.</p>
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			<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Setting up simple, practical enquiries, comparative and fair tests.</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>	<p>Working Scientifically –</p> <p>Using straightforward scientific evidence to answer questions or to support their findings.</p> <p>Talk about criteria for grouping, sorting and classifying (non-statutory).</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Setting up simple practical enquiries, comparative and fair tests.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences (non-statutory).</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes.</p>	
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				Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	
<b>Movement</b> Biology	<b>Food Waste</b> Sustainability	<b>Soils</b> Chemistry			<b>Magnets</b> Physics
<p><b>Sequence:</b> Identify different joint types Know how skeletons, joints and muscles work together to allow movement</p> <p><b>Vocabulary</b> Joint, hinge, ball and socket, skeleton, muscle, bicep, tricep, contract, relax</p> <p><b>National Curriculum Links:</b> Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>Working scientifically – Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations (non-statutory).</p>	<p><b>Sequence:</b> Look at food waste and its impact on the planet Identify ways to reduce food waste</p> <p><b>Vocabulary:</b> Food waste, landfill, food label, compost</p> <p><b>National Curriculum Links:</b> Working Scientifically – Asking relevant questions and using different types of scientific enquiries to answer them. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>	<p><b>Sequence:</b> Explore different types of soil and what they are made up of Know the importance of soil Plan a comparative test to compare soils Carry out a comparative test on soils Analyse data, make conclusions and evaluate an investigation</p> <p><b>Vocabulary:</b> Soil, sandy soil, clay soil, peat soil, chalky soil, organic matter, nutrients, habitat loss, deforestation, habitat, independent variable, dependent variable, controlled variable, soil, filter paper, filter funnel, measure, measuring cylinder, absorb, evaluation, data</p> <p><b>National Curriculum Links:</b></p>			<p><b>Sequence:</b> Explore magnets and non-contact forces Explore magnetic and non-magnetic materials Investigate metals Develop understanding of magnets and their poles</p> <p><b>Vocabulary:</b> Magnet, magnetic, poles, magnetic force, iron, metal, non-metal, attract, steel, aluminium, repel</p> <p><b>National Curriculum Links:</b> Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. 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. Observe how magnets attract or repel each other</p>

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<p>Communicate their findings in ways that are appropriate for different audiences (non-statutory).</p>		<p>Recognise that soils are made from rocks and organic matter.</p> <p>Working Scientifically – Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables</p> <p>Using straightforward scientific evidence to answer questions or to support their findings.</p> <p>Setting up simple practical enquiries, comparative and fair tests.</p> <p>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>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>			<p>and attract some materials and not others.</p> <p>Describe magnets as having 2 poles and predict whether 2 magnets will attract or repel each other, depending on which poles are facing.</p> <p>Working Scientifically – Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Setting up simple practical enquiries, comparative and fair tests.</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>
<p><b>Nutrition and Diet</b> Biology</p>	<p><b>Rocks</b> Chemistry</p>				<p><b>Plants B</b> Biology</p>
<p><b>Sequence:</b> Know the five food groups Know the functions of the five food groups</p>	<p><b>Sequence:</b> Identify rocks, observing them closely</p>				<p><b>Sequence:</b> Revisit plant growth experiment from previous term</p>

# Science Curriculum Overview



<p>Explore what a balanced diet is and its importance in maintaining good health</p> <p><b>Vocabulary:</b> Carbohydrate, protein, dairy, fats, sugar, fruit, vegetable, energy, calcium, muscle, nutrients, vitamins, balanced diet, balanced meal, nutrition, Eatwell guide</p> <p><b>National Curriculum Links:</b> 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>Working Scientifically – Talk about criteria for grouping, sorting and classifying (non-statutory). 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.</p>	<p>Sort and group rocks based on their physical appearance Perform simple tests on rocks Identify rocks and observe where they are used for building materials</p> <p><b>Vocabulary:</b> Granite, pumice, sandstone, chalk, marble, gneiss, crystals, grains, layers, texture, reaction, hardness, float, sink, brittle, texture, weathering</p> <p><b>National Curriculum Links:</b> Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Working Scientifically – Making systematic and careful observations. Talk about criteria for grouping, sorting and classifying (non-statutory). Making systematic and careful observations. Gathering, recording, classifying and presenting data in a variety of ways to</p>				<p><b>Vocabulary:</b> Soil, seed, measure, data</p> <p><b>National Curriculum Links:</b> 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>Working Scientifically – Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>
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# Science Curriculum Overview



	help in answering questions.				
					<b>Biodiversity</b> Sustainability
					<p><b>Sequence:</b> Explore what biodiversity is Identify positive actions humans can take to increase biodiversity in the local area</p> <p><b>Vocabulary:</b> Biodiversity, endangered, extinct, rewilding, habitat</p> <p><b>National Curriculum Links:</b> Working Scientifically – Asking relevant questions and using different types of scientific enquiries to answer them. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>

Year 4 Science					
Harvest	Christmas	Winter	Spring	Whitsun	Summer
Group and classify living Things	States of Matter <i>(Cont)</i> . Chemistry	Sound Physics	Electricity Physics	Data Collection C Biology	The Digestive System Biology

# Science Curriculum Overview



Biology					
<p><b>Sequence:</b> Identify, sort and group animals into categories based on their features Know the term 'vertebrate' and 'invertebrate' and use these to describe animals Use simple keys to classify animals correctly Group plants in a range of categories Use classification keys to classify plants based on simple physical characteristics</p> <p><b>Vocabulary:</b> Vertebrate, mammal, bird, fish, amphibian, reptile, invertebrate, exoskeleton, insect, spider, soft-bodied, classification key, flowering plant, non-flowering plant, stamen, carpel, fern, moss</p> <p><b>National Curriculum Links:</b> 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</p>	<p><b>Sequence:</b> Explore how some materials can change states between a solid, liquid and gas Work scientifically to understand how to use a thermometer and stopwatch accurately Plan a fair test to investigate temperature Carry out an experiment to investigate temperature Know the water cycle Plan an investigation into evaporation Carry out an investigation into evaporation, using equipment accurately Analyse data, draw conclusions and evaluate an experiment</p> <p><b>Vocabulary:</b> Solid, liquid, gas, volume, states of matter, pouring solid, oobleck, flow, freezing, melting, boiling, condensation, evaporation, thermometer, stopwatch, beaker, temperature, independent variable, dependent variable, controlled variable, melting point, precipitation,</p>	<p><b>Sequence:</b> Know that sounds are made when objects vibrate Learn how sound reaches the ear and how the different parts of the ear allow us to hear sounds Explore sound and understand how the intensity of sound is measured Explore how the strength of the vibrations affects the volume of a sound Explore the term 'pitch' Plan a fair test to explore the effect of distance and volume Carry out a fair test exploring the effect of distance and volume Evaluate an experiment</p> <p><b>Vocabulary:</b> Vibration, ear, sound, volume, pitch, outer ear, ear bones, cochlea, ear canal, ear drum, decibel, decibel meter, insulate, pitch, high-pitched, low-pitched, independent variable, dependent variable, controlled variable, background noise, conclusion, evaluate</p>	<p><b>Sequence:</b> Identify common appliances that use electricity Build working circuits and explore the role of each part of these circuits Identify problems in a circuit and identify ways to fix the circuit Know the terms 'conductors' and 'insulators' Explore which materials are conductors and insulators Explore conductors within a circuit</p> <p><b>Vocabulary:</b> Appliances, plug, socket, cell, electrocuted, circuit, switch, battery, buzzer, conductor, insulator, metal, material</p> <p><b>National Curriculum Links:</b> 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.</p>	<p><b>Sequence:</b> Continue an observation over time by identifying living things in the local area Work scientifically to analyse the data they collected Work scientifically to analyse the data they collected over the whole year</p> <p><b>Vocabulary:</b> Vertebrate, invertebrate, flowering plant, non-flowering plant, bar chart, pictogram, data, seasonal changes, increase, decrease, conclusion, compare</p> <p><b>National Curriculum Links:</b> Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.  Working Scientifically: Gathering, recording, classifying and presenting data in a variety of ways, to</p>	<p><b>Sequence:</b> Explore how an animal's diet influences the structure of its teeth Understand why humans have more than one type of tooth Know the layers of the teeth Plan and set up an investigation into the effects of different liquids have on the egg Explore the digestive system and the route food takes through the body Model the process of digestion Describe the findings of an investigation into effects of liquids on an egg</p> <p><b>Vocabulary:</b> Teeth, carnivore, herbivore, omnivore, incisors, canines, premolars, molars, germs, enamel, root, plaque, decay, digestive system, mouth, oesophagus, stomach, intestine, rectum, saliva</p> <p><b>National Curriculum Links:</b> Comparing the teeth of carnivores and herbivores</p>

# Science Curriculum Overview



<p>their local and wider environment.</p> <p>Working Scientifically – Talk about criteria for grouping, sorting and classifying Asking relevant questions and using different types of scientific enquiries to answer them Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>	<p>atmosphere, global warming, water vapour, Petri dish, observations, conclusion</p> <p><b>National Curriculum Links:</b> 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. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Working Scientifically – Talk about criteria for grouping, sorting and classifying. Identifying differences, similarities or changes related to simple scientific ideas. Asking relevant questions and using different types of scientific enquiries to answer them.</p>	<p><b>National Curriculum Links:</b> Identify how sounds are made, associating some of them with vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Find patterns between the pitch of a sound and features of the object that produced it. Recognise that sounds get fainter as the distance from the sound source increases.</p> <p>Working Scientifically – Asking relevant questions and using different types of scientific enquiries to answer them. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment,</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 battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Working Scientifically – Talk about criteria for grouping, sorting and classifying. 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. Asking relevant questions and using different types of scientific enquiries to answer them. Using results to draw simple conclusions, make</p>	<p>help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p>	<p>and suggesting reasons for differences. 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.</p> <p>Working Scientifically – Identifying differences, similarities or changes related to simple scientific ideas and processes. Asking relevant questions and using different types of scientific enquiries to answer them. Recognise why and how secondary sources might help them to answer questions that cannot be answered through practical investigations. Setting up simple practical enquiries, comparative and fair tests. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using the results to draw simple conclusions, make predictions for new values,</p>
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# Science Curriculum Overview



	<p>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>Setting up simple practical enquiries, comparative and fair tests.</p> <p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>	<p>including thermometers and data loggers.</p> <p>Setting up simple practical enquiries, comparative and fair tests.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas.</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>	<p>predictions for new values, suggest improvements and raise further questions.</p>		<p>suggest improvements and raise further questions.</p>
<p><b>Data Collection A</b> Biology</p>		<p><b>Data Collection B</b> Biology</p>	<p><b>Energy</b> Sustainability</p>	<p><b>Habitats</b> Physics</p>	<p><b>Food chains</b> Biology</p>
<p><b>Sequence:</b> Begin an observation over time enquiry Decide how to record data they collect Work scientifically to analyse the data they collected</p> <p><b>Vocabulary:</b></p>		<p><b>Sequence:</b> Continue their observation over time enquiry to name and identify living things in their local area Collect data around them</p> <p><b>Vocabulary:</b> Vertebrate, invertebrate, flowering plant, non-flowering plant,</p>	<p><b>Sequence:</b> Explore the terms 'energy' and 'energy usage' Learn the different ways in which electricity is generated and the way it is used in their daily lives Explore how they can reduce their energy usage at home and in school</p>	<p><b>Sequence:</b> Investigate plants and animals within their locality and how biodiverse these local habitats are Explore and create classification keys for animals Construct a classification keys using the characteristics of plants</p>	<p><b>Sequence:</b> Explore food chains and identify parts of a food chain Apply their knowledge to interpret what individual food chains show Create and draw food chains</p>

# Science Curriculum Overview



<p>Vertebrate, invertebrate, flowering plant, non-flowering plant, bar chart, pictogram, data</p> <p><b>National Curriculum Links:</b> Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Working scientifically – 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.</p>		<p><b>National Curriculum Links:</b> Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Work scientifically to analyse the data collected. Present data.</p> <p>Working scientifically – 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.</p>	<p><b>Vocabulary:</b> Electricity, mains electricity, battery-powered, renewable energy, non-renewable energy, Earth</p> <p><b>National Curriculum Links:</b> Working Scientifically – 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.</p>	<p>Explore human impacts on plant and animal habitats</p> <p><b>Vocabulary:</b> Habitat, rural habitat, urban habitat, biodiversity, classification key, vertebrate, invertebrate, flowering plant, non-flowering plant, natural resources, deforestation, rewilding, nature reserve</p> <p><b>National Curriculum Links:</b> 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.</p> <p>Working Scientifically – Asking relevant questions and using different types of scientific enquiries to answer them. Gathering, recording, classifying and presenting</p>	<p>Explore the potential impact of human activity of food chains</p> <p><b>Vocabulary:</b> Food chain, producer, predator, prey, consumer, farming, overfishing, hunting</p> <p><b>National Curriculum Links:</b> Construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>Working Scientifically – Using straightforward 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.</p>
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# Science Curriculum Overview



				<p>data in a variety of ways to help in answering questions.</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>	
<b>States of Matter</b> Chemistry				<b>Deforestation</b> Sustainability	
<p><b>Sequence:</b> Explore solids, liquids and gases Explore materials more difficult to categorise as a solid, liquid or gas</p> <p><b>Vocabulary:</b> Solid, liquid, gas, volume, states of matter, pouring solid, oobleck, flow, freezing, melting, boiling, condensation, evaporation, thermometer, stopwatch, beaker, temperature, independent variable, dependent variable, controlled variable, melting point, precipitation, atmosphere, global warming, water vapour, Petri dish, observations, conclusion</p> <p><b>National Curriculum Links:</b></p>				<p><b>Sequence:</b> Look at the effects of deforestation locally and globally Explore how deforestation impacts habitats in their local area and the rest of the world</p> <p><b>Vocabulary:</b> Natural resource, deforestation, habitat destruction, biodiversity, palm oil, extinct, endangered, sustainable</p> <p><b>National Curriculum Links:</b> Working Scientifically – Asking relevant questions and using different types of scientific enquiries to answer them. Reporting on findings from enquiries, including oral and written explanations,</p>	

# Science Curriculum Overview



<p>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. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Working Scientifically – Talk about criteria for grouping, sorting and classifying. Identifying differences, similarities or changes related to simple scientific ideas. 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,</p>				displays or presentations of results and conclusions.	
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# Science Curriculum Overview



<p>including thermometers and data loggers. Setting up simple practical enquiries, comparative and fair tests. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>					
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## Year 5 Science

Harvest	Christmas	Winter	Spring	Whitsun	Summer
<p><b>Forces</b> Physics</p>	<p><b>Space (Cont).</b> Physics</p>	<p><b>Properties of Materials</b> Chemistry</p>	<p><b>Animals including Humans (Cont).</b> Biology</p>	<p><b>Reproduction A</b> Biology</p>	<p><b>Reversible and Irreversible Changes (Cont).</b> Chemistry</p>
<p><b>Sequence:</b> Recap friction and its effects Know that air resistance is a type of friction Plan a fair test, make predictions and identify variables</p>	<p><b>Sequence:</b> Know the parts of the Solar System Know the eight planets and their features Use models as representations of the Solar System and the planets</p>	<p><b>Sequence:</b> Test and group materials based on hardness, transparency and magnetism Test and group materials based on electrical conductivity</p>	<p><b>Sequence:</b> Explore adolescence and puberty in more detail Explore key changes in adulthood Explore the gestation periods of different mammals</p>	<p><b>Sequence:</b> Understand the process of fertilisation Name and know the functions of male and female reproductive parts in plants</p>	<p><b>Sequence:</b> Explore reversible changes Identify irreversible changes – burning Identify irreversible changes – reaction between an acid and bicarbonate of soda</p>



# Science Curriculum Overview



<p>Carry out a parachute investigation Look at results from their investigation Evaluate and suggest improvements for their experiment Plan a comparative test Carry out a comparative test Know that gravity is a non-contact force Look at different mechanisms including levers, pulleys and gears</p> <p><b>Vocabulary:</b> Force, contact force, friction, motion, air resistance, drag, parachute, independent variable, dependent variable, controlled variable, streamline, repeatability, precision, surface area, anomalous result, water resistance, gravity, weight, contact force, non-contact force, lever, pulley, gear, machine</p> <p><b>National Curriculum Links:</b> Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p>	<p>Explain the movement of the planets in the Solar System Explore how ideas of the Solar System have changed over time Explore planet Earth Explore day and night Explore the Moon and its features</p> <p><b>Vocabulary:</b> The Solar System, planets, spherical, Sun, stars, orbit, surface, appearance, model, gravity, gravitational pull, heliocentric, geocentric, spherical, axis, rotation, North Pole, South Pole, direction of spin, night, day, satellite, moon</p> <p><b>National Curriculum Links:</b> Describe the Sun, Earth and Moon as approximately spherical bodies. Describe the movement of our Earth and other planets relative to the Sun in the Solar System. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.</p>	<p>Plan a comparative test to investigate thermal insulators Carry out a comparative test to investigate thermal insulators Analyse data, make conclusions, evaluate an investigation Link uses of materials to their properties</p> <p><b>Vocabulary:</b> Transparent, translucent, opaque, magnetism, hardness, electrical conductor, electrical insulator, circuit, cell, bulb, independent variable, dependent variable, controlled variable, thermal insulator, beaker, thermometer, temperature, data, conclusion, anomalous result, properties, wood, metal, plastic, lifespan</p> <p><b>National Curriculum Links:</b> Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity</p>	<p>Explore links between gestation period and lifespan in animals</p> <p><b>Vocabulary:</b> Adolescent, period, reproduce, hormone, puberty, adult, elderly, life expectancy, womb, foetus, gestation, offspring, correlation, anomaly</p> <p><b>National Curriculum Links:</b> Describe the changes as humans develop to old age.</p> <p>Working Scientifically – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Identifying scientific evidence that has been used to support or refute ideas or arguments. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line charts. Reporting and presenting findings from enquiries, including conclusions, causal relationships and</p>	<p>Explore the process of pollination in flowering plants Explore asexual reproduction Plan an observation over time enquiry to find out which parts of a parent plant are best for cloning a plant from Conduct an observation over time enquiry</p> <p><b>Vocabulary:</b> Fertilisation, embryo, sperm cells, egg cells, sexual reproduction, anther, stigma, filament, style, ovule, ovary, pollen, stamen, pistil, pollination, clone, runner, tuber, bulb, asexual reproduction, independent variable, dependent variable, controlled variable, cutting, parent plant, compost</p> <p><b>National Curriculum Links:</b> Describe the process of reproduction in some plants and animals.</p> <p>Working Scientifically –</p>	<p><b>Vocabulary:</b> Mixture, states of matter, dissolve, reversible change, reverse, chemical reaction, irreversible change, burning, heating, vinegar, bicarbonate of soda</p> <p><b>National Curriculum Links:</b> 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.</p> <p>Working Scientifically – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>
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# Science Curriculum Overview



<p>Explain that unsupported objects fall towards the Earth because of gravity acting between the Earth and the falling object. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p>Working Scientifically – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Recognising which secondary sources will be most useful to research their ideas. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. 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</p>	<p>Describe the movement of the Moon relative to the Earth.</p> <p>Working Scientifically – Identifying scientific evidence that has been used to support or refute ideas or arguments. Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line charts.</p>	<p>(electrical and thermal) and their response to magnets. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including wood, metal and plastic.</p> <p>Working Scientifically – Use and develop keys and other information records to identify, classify and describe living things and materials. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line charts. 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. Using test results to make predictions to set up further comparative and fair tests.</p>	<p>explanations of and a degree of trust in results.</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar charts 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. 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.</p>	
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# Science Curriculum Overview



<p>explanations of and a degree of trust in results. 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.</p>		<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.</p>			
<p><b>Space Physics</b></p>	<p><b>Global Warming Sustainability</b></p>	<p><b>Animals including Humans Biology</b></p>	<p><b>Life Cycles Biology</b></p>	<p><b>Reversible and Irreversible Changes Chemistry</b></p>	<p><b>Plastic pollution Sustainability</b></p>
<p><b>Sequence:</b> Know the parts of the Solar System</p> <p><b>Vocabulary:</b> The Solar System, planets, spherical, Sun, stars</p> <p><b>National Curriculum Links:</b> Describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>Working Scientifically – Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p><b>Sequence:</b> Look at the current issues around climate change and global warming Explore the effects of global warming on living things</p> <p><b>Vocabulary:</b> Global warming, greenhouse gases, fossil fuels, climate change, glaciers, ice cap, habitat</p> <p><b>National Curriculum Links:</b> Working Scientifically – Recognise which secondary sources will be most useful to research their ideas and</p>	<p><b>Sequence:</b> Learn how humans group and develop Explore key milestones in baby and child development</p> <p><b>Vocabulary:</b> Adolescent, baby, foetus, elderly, adult, life cycle, milestone, toddler, child, womb</p> <p><b>National Curriculum Links:</b> Describe the changes as humans develop to old age.</p> <p>Working Scientifically –</p>	<p><b>Sequence:</b> Know the life cycles of mammals Explore the life cycle of amphibians Explore the life cycle of insects Explore the life cycle of birds</p> <p><b>Vocabulary:</b> Monotreme, offspring, mammary gland, mammal, life cycle, amphibian, frogspawn, tadpole, froglet, metamorphosis, larva, pupa, chrysalis, insect, egg, hatchling, nestling, fledgling, adult bird</p>	<p><b>Sequence:</b> Explore the difference between soluble and insoluble substances Explore the process of filtering and sieving Explore the process of evaporation and how this can be used to separate a soluble solution from a liquid</p> <p><b>Vocabulary:</b> Dissolve, soluble, insoluble, solution, substance, sieve, filter paper, mixture, insoluble, filtering, funnel, evaporation</p>	<p><b>Sequence:</b> Explore the causes of plastic pollution Suggest ways to reduce negative impacts of plastic pollution</p> <p><b>Vocabulary:</b> Plastic, habitat, plastic pollution, landfill, pollution, microplastics</p> <p><b>National Curriculum Links:</b> Identifying scientific evidence that has been used to support or refute ideas or arguments. Reporting and presenting findings from enquiries,</p>

# Science Curriculum Overview



	<p>begin to separate opinion from fact. Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line charts.</p>	<p><b>National Curriculum Links:</b> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Working Scientifically – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line charts. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.</p>	<p><b>National Curriculum Links:</b> 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.</p> <p>Working Scientifically – Using test results to make predictions to set up further comparative and fair tests. Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar charts and line graphs. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p>	<p>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><b>Reproduction B</b> Biology</p>
					<p><b>Sequence:</b></p>

# Science Curriculum Overview



					<p>Look at results from the plant cloning investigation Work scientifically to interpret data from other plant experiments.</p> <p><b>Vocabulary:</b> Asexual reproduction, cutting, parent plant, data, line graph, prediction</p> <p><b>National Curriculum Links:</b> Describe the life processes of reproduction in some plants and animals.</p> <p>Working scientifically – Using test results to make predictions to set up further comparative and fair tests.</p>
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## Year 6 Science

Harvest	Christmas	Winter	Spring	Whitsun	Summer
<b>Living Things and their Habitats</b> Biology	<b>Electricity</b> Physics	<b>Light</b> Physics	<b>The circulatory system</b> Biology	<b>Variation</b> Biology	<b>Fossils</b> Biology
<b>Sequence:</b> Explore conditions for life and the differences between living and non-living things	<b>Sequence:</b> Construct and draw series circuits using symbols Look at complete and incomplete circuits	<b>Sequence:</b> Name and identify simple parts of the human eye and discuss their functions	<b>Sequence:</b> Identify parts of the circulatory system and know that they work to	<b>Sequence:</b> Explore the concept of variation Explore inheritance and characteristics	<b>Sequence:</b> Deepen understanding of the process of fossilisation

# Science Curriculum Overview



<p>Group animals and plants based on their characteristics Classify a range of animals based on their features Create own questions to classify plants Explore microorganisms Classify microorganisms Explore Linnaeus and his work on taxonomy</p> <p><b>Vocabulary:</b> Organism, excretion, reproduction, living, non-living, vertebrate, invertebrate, flowering plant, non-flowering plant, classification, classification keys, molluscs, arachnids, deciduous trees, evergreen trees, coniferous trees, microorganisms, bacteria, viruses, fungi, Carl Linnaeus, characteristics</p> <p><b>National Curriculum Links:</b> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities, including microorganisms, plants and animals.</p>	<p>Explore variations within circuits and the effects of numbers of components Plan a fair test investigation into effects on a circuit Investigate effects on a circuit Evaluate results and suggest experiment improvements</p> <p><b>Vocabulary:</b> Series circuit, cell, battery, bulb, current, voltage, complete circuit, incomplete circuit, switch, buzzer, independent variable, dependent variable, controlled variable, repeatability, accuracy, evaluation</p> <p><b>National Curriculum Links:</b> Use recognised symbols when representing a simple circuit in a diagram. 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. Associate the brightness of a lamp or loudness of a buzzer with the number</p>	<p>Identify that light travels in straight lines but it can change direction if reflected Know that shadows are the same shape as the objects that cast them Plan an experiment to investigate shadows Conduct an investigation into shadows Draw conclusions and evaluate an experiment Explore how refraction occurs and explain why this happens Look at different properties of light and how ideas about light were developed</p> <p><b>Vocabulary:</b> Light source, iris, retina, pupil, lens, reflection, ray diagram, angle, periscope, shadow, opaque, translucent, transparent, solar eclipse, independent variable, dependent variable, controlled variable, conclusion, evaluate, refraction, medium, rainbow, prism, coloured filter, spectrum of light</p> <p><b>National Curriculum Links:</b></p>	<p>pump blood around the body Explore the composition and functions of blood Look at the heart and its function Follow blood flow in the heart Follow the path of oxygenated and deoxygenated blood</p> <p><b>Vocabulary:</b> Circulatory system, heart, blood, veins, artery, capillaries, organ, blood, red blood cells, white blood cells, lungs, nutrients, plasma, oxygen, atria, ventricles, left ventricle, right ventricle, left atrium, right atrium, blood vessels, oxygenated blood, deoxygenated blood</p> <p><b>National Curriculum Links:</b> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p><b>Vocabulary:</b> Organism, variation, species, offspring, characteristic, inheritance, desirable characteristic</p> <p><b>National Curriculum Links:</b> Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>Working Scientifically – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory). Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar charts and line graphs.</p>	<p>Explore a variety of fossils and what scientists can learn from them Know who Mary Anning was and why her contributions were so important</p> <p><b>Vocabulary:</b> Fossil, rock, decompose, skeleton, fossilisation, Charles Darwin, Mary Anning, palaeontologist</p> <p><b>National Curriculum Links:</b> 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>Working Scientifically – Identifying scientific evidence that has been used to support or refute ideas or arguments. Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time (non-statutory).</p>
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# Science Curriculum Overview



<p>Give reasons for classifying plants and animals based on specific characteristics.</p> <p>Working Scientifically – Identifying scientific evidence that has been used to support or refute ideas or arguments. Use and develop keys and other information records to identify, classify and describe living things. Identifying scientific evidence that has been used to support or refute ideas or arguments. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. Use relevant scientific language and illustrations to discuss, communicate and justify their ideas and should talk about how scientific ideas have developed over time.</p>	<p>and voltage of cells used in the circuit.</p> <p>Working Scientifically – 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. 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. Using test results to make predictions to set up further comparative and fair tests.</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. 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. Recognise that light appears to travel in straight lines.</p> <p>Working Scientifically – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision,</p>	<p>Working Scientifically – Explore ideas and raise different kinds of questions. Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.</p>		<p>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.</p>
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# Science Curriculum Overview



		<p>taking repeat readings when appropriate.</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Talk about how scientific ideas have changed over time.</p>			
	<p><b>Renewable Energy Sustainability</b></p>	<p><b>Light Pollution Sustainability</b></p>	<p><b>Diet, drugs and lifestyle Cycles Biology</b></p>	<p><b>Adaptations Biology</b></p>	<p><b>Themed projects (Year 7 ready)</b></p>
	<p><b>Sequence:</b> Know what global warming is and why it is happening Explore the effects of global warming on living things</p> <p><b>Vocabulary:</b> Global warming, greenhouse gases, fossil fuels, climate change, glaciers, ice cap, habitat</p> <p><b>National Curriculum Links:</b> Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. Identifying scientific evidence that has been</p>	<p><b>Sequence:</b> Explore light pollution and its impact on living things Look at ways that we can reduce light pollution in our local area</p> <p><b>Vocabulary:</b> Migration, glare, light trespass, skyglow, light pollution, urban, rural, light emission, appliance</p> <p><b>National Curriculum Links:</b> Identifying scientific evidence that has been used to support or refute ideas or arguments. Reporting and presenting findings from enquiries, including conclusions, causal relationships and</p>	<p><b>Sequence:</b> Explore the impact of diet on overall heart health Learn about drugs and their effect on the body Identify the dangers of smoking and vaping on their body Plan a fair test to explore whether duration of exercise affects heart rate Carry out a fair test to explore how duration of exercise affects heart rate Evaluate an experiment</p> <p><b>Vocabulary:</b> Diet, balanced diet, calories, saturated fats, unsaturated fats, trans fats, drug, painkiller, stimulant, depressants, cigarette,</p>	<p><b>Sequence:</b> Identify how animals have adapted to suit different environments Explore how plants have adapted to survive in their habitats Explain the process of evolution Know the contributions from Charles Darwin towards understanding evolution Explore the process of natural selection Explore why the work of Charles Darwin was so important</p> <p><b>Vocabulary:</b> Characteristics, adaptations, polar habitat,</p>	<p><b>Project 1: Melting Points</b></p> <p><b>Sequence:</b> Develop a scientific question to investigate Research and make a prediction Identify variables and write a method Investigate a scientific question Draw an appropriate graph to plot results Present findings and evaluate an investigation</p> <p><b>Vocabulary:</b> Plan, scientific question, factors, enquiry, comparative, over time, pattern seeking, research,</p>



# Science Curriculum Overview



	<p>used to support or refute ideas or arguments.</p>	<p>explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>vape, tar, nicotine, carbon monoxide, addiction, independent variable, dependent variable, controlled variable, circulatory system, heart rate, duration, exercise, conclusion, evaluation</p> <p><b>National Curriculum Links:</b> Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Working Scientifically – Identifying scientific evidence that has been used to support or refute ideas or arguments. Recognise which secondary sources will be most useful to research their ideas and begin the separate opinion from fact (non-statutory). 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.</p>	<p>desert habitat, habitat, evolution, Charles Darwin, common ancestor, species, theory, natural selection, Galapagos Islands, finch</p> <p><b>National Curriculum Links:</b> Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>Working Scientifically – Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact (non-statutory). Identifying scientific evidence that has been used to support or refute ideas or arguments. Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time (non-statutory). Reporting and presenting findings from enquiries, including conclusions, causal relationships and</p>	<p>prediction, independent variable, dependent variable, controlled variable, method, investigate, record, results, graph, axes, data, anomalous results, conclusion, evaluate</p> <p><b>National Curriculum Links:</b> 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).</p> <p>Working Scientifically – Explore ideas and raise different kinds of questions (non-statutory). Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Make their own decisions about what observations to make, what measurements to use and how long to</p>
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			<p>Using test results to make predictions to set up further comparative and fair tests.</p>	<p>explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>make them for (non-statutory).            Take 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.</p> <p><b>Project 2:            Thermal Insulation</b></p> <p><b>Sequence:</b>            Develop a scientific question to investigate            Research and make a prediction</p>
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					<p>Identify variables and write a method Investigate a scientific question Draw an appropriate graph to plot results Present findings and evaluate an investigation</p> <p><b>Vocabulary:</b> Plan, scientific question, factors, enquiry, comparative, over time, pattern seeking, research, prediction, independent variable, dependent variable, controlled variable, method, investigate, record, results, graph, axes, data, anomalous results, conclusion, evaluate</p> <p><b>National Curriculum Links:</b> Compare and group materials together, according to whether they are solids, liquids or gases. 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.</p>
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# Science Curriculum Overview



					<p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Working Scientifically – Explore ideas and raise different kinds of questions (non-statutory). Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Make their own decisions about what observations to make, what measurements to use and how long to make them for (non-statutory). Take 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,</p>
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					<p>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.</p>
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