



# Science Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Nursery</b>	<p><b>Changes - Autumn</b></p> <p>Talk about what they see, using a wide vocabulary</p>	<p><b>Changes - Winter</b></p> <p>Begin to understand the need to respect and care for the natural environment and all living things</p> <p>Use all their senses in hands-on exploration of natural materials.</p> <p>Let's Pretend</p>	<p><b>Changes - Winter</b></p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <p>Talk about what they see, using a wide vocabulary.</p>	<p><b>Changes - Spring Science Week</b></p> <p>Explore collections of materials with similar and/or different properties.</p> <p>Talk about the differences between materials and changes they notice.</p>	<p><b>Changes - Summer</b></p> <p>The World Farm animals, habitats</p> <p>Understand the key features of the life cycle of a plant and an animal.</p>	<p><b>Changes - Summer minibeast lifecycles</b></p> <p>Explore how things work.</p> <p>Plant seeds and care for growing plants.</p> <p>Understand the key features of the life cycle of a plant and an animal.</p>
<b>Reception</b>	<p><b>Changes - Autumn</b></p> <p>Know some similarities and differences between the natural world around them</p>	<p><b>Changes - Winter</b></p> <p>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.</p>	<p><b>Changes - Winter</b></p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p><b>Changes - Spring Science Week</b></p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p><b>Changes - Summer The World Animal habits, diets</b></p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p><b>Changes - Summer minibeast lifecycles</b></p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>

<p><b>Year 1</b></p>	<p><b>Topic: Animals including Humans (Ourselves)</b></p> <p>Key Learning Objectives To 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>Experiment: Five senses experiment (Autumn Walk) using senses to explore environment</p> <p>Working Scientifically Focus: Noticing patterns over time</p>	<p><b>Topic: Seasonal changes (Wonderful Weather)</b></p> <p>Key Learning Objectives To observe changes across the four seasons</p> <p>To observe and describe weather associated with the seasons and how day length varies.</p> <p>Experiment: Ice experiment Rainbow experiment</p> <p>Working Scientifically Focus: Observing changes over a period of time</p>	<p><b>Topic: Everyday Materials (Marvellous Materials)</b></p> <p>Key Learning Objectives To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials</p> <p>Experiment: Building a house for the three little pigs using different types of materials</p> <p>Working Scientifically Focus: Grouping and classifying things</p>	<p><b>Topic: Animals including Humans (Animals)</b></p> <p>Key Learning Objectives To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>To identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Working Scientifically Focus: Grouping and classifying things</p>	<p><b>Topic: Plants (What's Growing in Our Gardens?)</b></p> <p>Key Learning Objectives To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>To identify and describe the basic structure of a variety of common flowering plants, including trees.</p> <p>Experiment: Plant life cycles: Growing cress/plants</p> <p>Working Scientifically Focus: Carrying out simple comparative tests</p>	<p><b>Topic: Everyday materials (Let's build)</b></p> <p>Key Learning Objectives To distinguish between an object and the material from which it is made</p> <p>To compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p>Experiment: Float or Sink Experiment</p> <p>Building bridges using a range of materials</p> <p>Working Scientifically Focus: Finding things out using secondary sources of information</p>
<p><b>Year 2</b></p>	<p><b>Topic: Animals including humans (part 1)</b></p> <p>Key Learning Objectives To notice that animals, including humans, have offspring which grow into adults</p> <p>To find out about and describe the basic needs</p>	<p><b>Topic: Animals including humans (cont.)</b></p> <p>Key Learning Objectives To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p><b>Topic: Materials</b></p> <p>Key Learning Objectives To 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><b>Topic: Living things and their habitats (part 1)</b></p> <p>Key Learning Objectives To explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>To identify that most living things live in</p>	<p><b>Topic: Living things and their habitats (cont.)</b></p> <p>Key Learning Objectives To identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>To describe how animals obtain their food from</p>	<p><b>Topic: Plants and variation</b></p> <p>Key Learning Objectives To observe and describe how seeds and bulbs grow into mature plants To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>

	<p>of animals, including humans, for survival (water, food and air)</p> <p>Working Scientifically: Researching</p>	<p>Experiment: Exercise – How our pulse changes during exercise</p> <p>Dental hygiene – egg experiment - testing the effects of different drinks on our teeth</p>	<p>To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>Experiment: Bag experiment Testing- the strength of materials</p> <p>Absorbency experiment</p> <p>Fire – testing the flammability of materials – links to topic and the Great Fire of London</p> <p>Working Scientifically: Comparative/Fair testing</p>	<p>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</p> <p>Experiment: Choice chamber - to observe and explore what conditions are preferred by woodlice</p> <p>Working Scientifically: Grouping, classifying and organising</p>	<p>plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p> <p>Working Scientifically: Grouping, classifying and organising</p>	<p>Experiment: The effects of different conditions on a sunflower seed</p> <p>Hand span investigation</p> <p>Working Scientifically: Observations over time</p>
<b>Year 3</b>	<p><b>Topic: Animals including humans</b></p> <p>Key Learning Objectives: To 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>To identify that humans and some other animals have skeletons and</p>	<p><b>Topic: Forces including magnets</b></p> <p>Key Learning Objectives: To compare how things, move on different surfaces</p> <p>To notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>To observe how magnets, attract or</p>	<p><b>Topic: Plants (part 1)</b></p> <p>Key Learning Objectives: To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>To explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to</p>	<p><b>Topic: Plants (part 2)</b></p> <p>Key Learning Objectives: To investigate the way in which water is transported within plants</p> <p>To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p><b>Topic: Rocks and Soils</b></p> <p>Key Learning Objectives: To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>To describe in simple terms how fossils are formed when things that have lived are trapped within rock</p>	<p><b>Topic: Light</b></p> <p>Key Learning Objectives: To recognise that they need light in order to see things and that dark is the absence of light</p> <p>To notice that light is reflected from surfaces</p> <p>To recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p>

	<p>muscles for support, protection and movement.</p> <p>Experiment: To identify different food groups to prepare a healthy meal for Stig to eat</p> <p>Working Scientifically Focus: Researching</p>	<p>repel each other and attract some materials and not others</p> <p>To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</p> <p>To describe magnets as having two poles</p> <p>To predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p>Experiment: To investigate what different materials are magnetic around us and what do they all have in common?</p> <p>Working Scientifically Focus: Grouping, classifying and/or organising</p>	<p>grow) and how they vary from plant to plant</p> <p>Experiment: How does access to nutrients effect plant germination?</p> <p>Working Scientifically Focus: Observations over time</p>	<p>Experiment: Make your own paper seed and investigate wind dispersal by testing different versions to find the best flier.</p> <p>Working Scientifically Focus: Observations over time</p>	<p>To recognise that soils are made from rocks and organic matter.</p> <p>Experiment: Starburst experiment – showing the way different rocks form and look when they are exposed to different things</p> <p>Working Scientifically Focus: Comparative/fair testing</p>	<p>To recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>To find patterns in the way that the size of shadows change.</p> <p>Experiment: How does distance from a light source affect the size and shape of the shadow?</p> <p>Working Scientifically Focus: Pattern Seeking</p>
<b>Year 4</b>	<p><b>Topic: States of Matter</b></p> <p>Key Learning Objectives: To compare and group materials together, according to whether they are solids, liquids or gases</p>	<p><b>Topic: Sound</b> <b>Sound The study of Alexander Graham Bell</b></p> <p>Key Learning Objectives: To identify how sounds are made, associating</p>	<p><b>Topic: Deforestation in Madagascar.</b></p> <p>The study of Gerard Durrell To be able to investigate and describe the dangers of</p>	<p><b>Topic: Electricity</b></p> <p>Electricity The study of Thomas Edison and James Watt To identify common appliances that run on electricity</p>	<p><b>Topic: Living things and their habitats</b></p> <p>To recognise that living things can be grouped in a variety of ways To explore and use classification keys to</p>	<p><b>Topic: Teeth and the digestive system</b></p> <p>Identify different types of teeth in humans and their functions Teeth modelling</p>

	<p>To 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>To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Experiments: Does temperature affect melting speed?</p>	<p>some of them with something vibrating</p> <p>To recognise that vibrations from sounds travel through a medium to the ear</p> <p>To find patterns between the pitch of a sound and features of the object that produced it</p> <p>To find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>To recognise that sounds get fainter as the distance from the sound source increases.</p> <p>Experiments: How does distance from a source affect the volume? Working Scientifically Focus: Comparative/fair testing</p>	<p>deforestation in Madagascar</p> <p>To name some endangered animals in Madagascar and to describe Gerald Durrell and his conservation work in Madagascar Experiment: - Investigating sustainable solutions for Deforestation</p> <p>Working Scientifically Focus: Research and observation Raising further questions</p>	<p>To identify hazards in the home</p> <p>To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>To recognise some common conductors and insulators, and associate metals with being good conductors. Experiments: Creating a variety of circuits Exploring what breaks a circuit and why?</p> <p>Working Scientifically Focus: Using scientific equipment Setting up practical enquiry</p>	<p>help group, identify and name a variety of living things in their local and wider environment</p> <p>To recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Experiments: Observe how environmental changes have an impact on living things Working</p> <p>Scientifically Focus: Observation Raising further questions</p>	<p>Explore different ways of keeping healthy Investigate how the digestive system works</p> <p>Experiment: To investigate what happens to food after it is swallowed - Working Scientifically Focus: Using scientific diagrams and labels to explain a scientific process</p>
<b>Year 5</b>	<p><b>Topic: Forces 1</b></p> <p>Children able to explain how the force of gravity acts on falling objects. Experiment:</p>	<p><b>Topic: Forces 2</b></p> <p>To investigate how levers work and how the position of the fulcrum affects its effectiveness. Experiment:</p>	<p><b>Topic: Properties and changes of Materials</b></p> <p>Experiment: -Testing materials- in order to plan their own</p>	<p><b>Topic: Earth and Space</b></p> <p>Spherical Bodies - research to identify scientific evidence that has been used to support or refute ideas.</p>	<p><b>Topic: Living things and their Habitats</b></p> <p>Experiment: -Dissecting a flowering plant.</p>	<p><b>Topic: Animals including Humans</b></p> <p>Experiment: How can they help older people in their families and communities?</p>

	<p>-Design their own experiment to test air resistance (different sizes and shapes) e.g. Jim Jarvis wants to escape from the workhouse. Working Scientifically Focus: Comparative/fair testing</p>	<p>To investigate how pulleys work and note the correlation between effort required and the number of pulleys. Working Scientifically Focus: Comparative/fair testing</p>	<p>investigations of properties. -Soluble or insoluble materials. -Explore what happens when sugar/or salt is put into warm water. -To carry out an investigation after predicting and exploring the solubility of different materials. -Separating materials Investigation. -Investigate separation of salt- forming salt crystals. -What happens to certain things when they are put in to water? -Investigating exothermic and endothermic reactions. Working Scientifically Focus: Grouping and classifying things</p>	<p>Experiment: -Exploring- What size do you think the Sun, Moon and Earth are? How far do you think they are apart from each other? -Compare size and distance using models (scaled down). -Day and night/ Seasons- Exploring and pattern seeking. -Toy- top to explain spinning (rotation and revolutions differences) and investigate items that rotate. -Phases of the moon- Research and pattern seeking and completing a Moon diary. Working Scientifically Focus: Pattern seeking</p>	<p>Cut up four different fruits and compare their seeds. (grow from cuttings) -Pollination: Compare different types of pollination and complete the pollination cycle. -Seed dispersal: Investigate different types of seed dispersal. -Investigate a model seed helicopter and explore the different factors affecting flight. Working Scientifically Focus: Observation over time</p>	<p>Puberty: Complete diagrams explaining changes involved in puberty.  Explore to life cycle of Humans (8 different stages)  Describe the changes of the human body.</p>
<b>Year 6</b>	<p><b>Topic: Animals including humans</b></p> <p>Key Learning Objectives To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p>	<p><b>Topic: Living things and their habitats</b></p> <p>Key Learning Objectives To describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-</p>	<p><b>Topic: Evolution and Inheritance</b></p> <p>Key Learning Objectives To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p>	<p><b>Topic: Light</b></p> <p>Key Learning Objectives To recognise that light appears to travel in straight lines  To use the idea that light travels in straight lines to explain that objects are seen</p>	<p><b>Topic: Electricity &amp; Review</b></p> <p>Key Learning Objectives To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit  To compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</p>	

	<p>To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>To describe the ways in which nutrients and water are transported within animals, including humans</p>	<p>organisms, plants and animals</p> <p>To give reasons for classifying plants and animals based on specific characteristics</p> <p>Experiment Investigation on preserving bread</p>	<p>To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p> <p>Experiment How are we different investigation</p>	<p>because they give out or reflect light into the eye</p> <p>To explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</p> <p>To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p> <p>Experiment Investigating how light travels</p>	<p>To use recognised symbols when representing a simple circuit in a diagram</p> <p>Experiment Creating a variety of circuits using various equipment. How does the distance from the source and the number of bulbs affect their brightness?</p>
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