



## Science Curriculum Overview

	Autumn 1st	Autumn 2nd	Spring 1st	Spring 2nd	Summer 1st	Summer 2nd
<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 of animals, including</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 habitats to which they</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 plants and other animals, using the idea</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>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>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>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 muscles for support, protection and movement.</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 repel each other and attract some materials and not others</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 grow) and how they vary from plant to plant</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>Experiment: Make your own paper seed and investigate wind dispersal by testing</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>To recognise that soils are made from rocks and organic matter.</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>To recognise that shadows are formed</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>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>Experiment: How does access to nutrients effect plant germination?</p> <p>Working Scientifically Focus: Observations over time</p>	<p>different versions to find the best flier.</p> <p>Working Scientifically Focus: Observations over time</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>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>To observe that some materials change state</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 some of them with something vibrating</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 deforestation in Madagascar</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>To identify hazards in the home</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 help group, identify and name a variety of living</p>	<p><b>Topic: Teeth and the digestive system</b></p> <p>Identify different types of teeth in humans and their functions Teeth modelling Explore different ways of keeping healthy</p>

	<p>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>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>To name some endangered animals in Madagascar and to describe Gerald Durrell and his conservation work in Madagascar</p> <p>Experiment: - Investigating sustainable solutions for Deforestation</p> <p>Working Scientifically Focus: Research and observation Raising further questions</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.</p> <p>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>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>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: -Design their own experiment to test air resistance (different sizes and shapes) e.g. Jim Jarvis wants to</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: To investigate how pulleys work and note the correlation between</p>	<p><b>Topic: Properties and changes of Materials</b></p> <p>Experiment: -Testing materials- in order to plan their own investigations of properties. -Soluble or insoluble materials.</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. Experiment: -Exploring- What size do you think the Sun, Moon and Earth are?</p>	<p><b>Topic: Living things and their Habitats</b></p> <p>Experiment: -Dissecting a flowering plant. Cut up four different fruits and compare their seeds. (grow from cuttings) -Pollination:</p>	<p><b>Topic: Animals including Humans</b></p> <p>Experiment: How can they help older people in their families and communities?</p>

	<p>escape from the workhouse. Working Scientifically Focus: Comparative/fair testing</p>	<p>effort required and the number of pulleys. Working Scientifically Focus: Comparative/fair testing</p>	<p>-Explore what happens when sugar/or salt in 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>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>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>To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</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-organisms, plants and animals</p> <p>To give reasons for classifying plants and</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>To recognise that living things produce offspring of the same kind, but normally offspring vary</p>	<p><b>Topic: Light</b></p> <p>Key Learning Objectives To recognise that light appears to travel in straight lines</p> <p>To use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</p> <p>To explain that we see things because light travels from light</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</p> <p>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 use recognised symbols when representing a simple circuit in a diagram</p>	

	<p>To describe the ways in which nutrients and water are transported within animals, including humans</p>	<p>animals based on specific characteristics</p> <p>Experiment Investigation on preserving bread</p>	<p>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>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>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>
--	---	--	--	---	--