



## Science

### Vision

At Village Primary school we strive to broaden children's scientific views of the world around them. We encourage curiosity and exploration about relevant and challenging scientific concepts. Children are taught to ask questions and use their observations and ideas to suggest answers to these questions. Real life experiences are a fundamental element of the curriculum and links are made to careers in science, scientific inventions and scientists to ensure children are aware of the place of science in the wider world. Through practical lessons, our learning is full of discovery and we provide opportunities for exploration and investigation about the universe we live in. Our curriculum is a combination of scientific knowledge, understanding and enquiry skills. We ensure that children are equipped to make links with our classroom experiences and jobs in the real world. Each and every year group is on a scientific skills journey that is rich in vocabulary and always hands on.



## Science – Curriculum Map

Each lesson will include the teaching of scientific knowledge and the development of a skill. Lessons will be practical and hands on using real life equipment where possible.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<b>Three and four-year-olds</b>		<b>Reception</b>		<b>ELG</b>	
<b>EYFS</b>	<ul style="list-style-type: none"> <li>Understand 'why' questions</li> <li>Make healthy choices about food, drink, activity and toothbrushing               <ul style="list-style-type: none"> <li>Use all their senses in hands-on experiences</li> <li>Show care for living things</li> </ul> </li> <li>Explore collections of materials with similar and/or different purposes               <ul style="list-style-type: none"> <li>Talk about what they see</li> </ul> </li> <li>Begin to make sense of their own life-story and family's history               <ul style="list-style-type: none"> <li>Explore how things work</li> <li>Plants seeds and care for growing plants</li> </ul> </li> <li>Understand the key features of the life cycle of a plant and animal</li> <li>Being to understand the need to respect and care for the natural environment               <ul style="list-style-type: none"> <li>Explore and talk about different forces they can feel</li> </ul> </li> <li>Talk about the differences between materials and changes they notice</li> </ul>		<ul style="list-style-type: none"> <li>Know and talk about different factors that support overall health;               <ul style="list-style-type: none"> <li>Eating</li> <li>Sleep</li> <li>Toothbrushing</li> <li>Safe pedestrian</li> <li>Exercise</li> </ul> </li> <li>Sensible screen time</li> <li>Explore the natural world around them</li> <li>Describe what they see hear and feel outside</li> <li>Recognise some environments that are different to the one we live in</li> <li>Understand the changing seasons</li> </ul>	<ul style="list-style-type: none"> <li>Describe some events in detail</li> <li>Use talk to work out problems and organise thinking</li> <li>Use new vocabulary in different contexts</li> <li>Learn new vocabulary</li> <li>Ask questions to find out more</li> <li>Articulate ideas in well-informed sentences</li> </ul>	<ul style="list-style-type: none"> <li>Make comments about what they have heard and ask questions to clarify understanding</li> <li>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and the importance of healthy food choices</li> <li>Explore the natural world, making observations and drawing pictures of animals and plants</li> <li>Know some similarities and differences between the natural world around them and contrasting environments</li> <li>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</li> </ul>	
<b>Year 1</b>	<b>Everyday Materials</b> <b>Global Goal 9 and 12</b>	<b>Seasonal changes</b> <b>Weather</b> <b>Global Goal 13</b>	<b>Animals including Humans</b> <b>Global Goal 12</b>	<b>Seasonal changes</b> <b>Weather</b> <b>Global Goal 13</b>	<b>Plants</b> <b>Global Goal 11 and 15</b>	<b>Seasonal changes</b> <b>Weather</b> <b>Global Goal 13</b>
	<ul style="list-style-type: none"> <li>Distinguish between the object and the material from which it is made</li> </ul>	<ul style="list-style-type: none"> <li>Observe changes across the four seasons</li> <li>Observe and describe weather associated with the</li> </ul>	<ul style="list-style-type: none"> <li>Identify and name a variety of common animals and group them into carnivores,</li> </ul>	<ul style="list-style-type: none"> <li>Observe changes across the four seasons</li> <li>Observe and describe weather associated with the</li> </ul>	<ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants, including</li> </ul>	<ul style="list-style-type: none"> <li>Observe changes across the four seasons</li> <li>Observe and describe weather</li> </ul>



	<ul style="list-style-type: none"> <li>Describe the simple physical properties of a variety of everyday materials</li> <li>Perform simple tests to test the properties of the materials</li> </ul>	<p>seasons and how day length varies.</p> <ul style="list-style-type: none"> <li>Observe Autumn weather closely using simple equipment</li> </ul>	<p>omnivores and herbivores</p> <ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> <li>Classify and identify animals including humans</li> </ul>	<p>seasons and how day length varies.</p> <ul style="list-style-type: none"> <li>Ask simple questions and recognise that they can be answered in different ways.</li> </ul>	<p>deciduous and evergreen trees.</p> <ul style="list-style-type: none"> <li>Identify and describe the basic structure of a variety of common flowering plants, including trees</li> <li>Use observations and ideas to suggest answers to questions</li> </ul>	<p>associated with the seasons and how day length varies.</p> <ul style="list-style-type: none"> <li>Gathering and recording data to help answer questions</li> </ul>
<b>Year 2</b>	<p><b>Animals including Humans</b> <b>Global Goal 12</b></p>		<p><b>Use of everyday materials</b> <b>Global Goal 9 and 12</b></p>	<p><b>Plants</b> <b>Global Goal 11 and 15</b></p>	<p><b>Living things and their habitats</b> <b>Global Goal 13, 14 and 15</b></p>	<p><b>Living things and their habitats</b> <b>Global Goal 13, 14 and 15</b></p>
	<ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring that grow into adults</li> <li>Find out about and describe the basic needs of animals including humans for survival (water,</li> </ul>		<ul style="list-style-type: none"> <li>Know a variety of different everyday materials and name them.</li> </ul>	<ul style="list-style-type: none"> <li>Name the parts of a plant.</li> <li>Know what a plant needs to live.</li> </ul>	<ul style="list-style-type: none"> <li>Know that some animals are nocturnal.</li> <li>Know that animals live in different habitats.</li> </ul>	



	<p>food, air) and explore the benefits of a healthy lifestyle and good hygiene</p> <ul style="list-style-type: none"> <li>• Perform simple tests and gather and record data to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>• Know the properties of everyday materials using scientific vocabulary</li> <li>• Be able to compare everyday materials and test their properties.</li> </ul>	<ul style="list-style-type: none"> <li>• Be able to observe and record the growth of a plant.</li> </ul>	<ul style="list-style-type: none"> <li>• Be able to complete a simple food chain.</li> </ul>
<p><b>Skills KS1</b></p>	<ul style="list-style-type: none"> <li>• Record simple data.</li> <li>• Carry out simple tests.</li> <li>• Talk about what they have found and why.</li> <li>• Identifying and classifying.</li> <li>• Explore the world around them and raise their own simple questions.</li> <li>• Asks people questions.</li> <li>• Observe closely using simple equipment. With help, observe changes over time.</li> <li>• Experience different types of scientific enquiries including practical activities.</li> <li>• Use simple measurements and equipment (hand lenses, egg timers to gather data)</li> <li>• With help they should record and communicate their findings in a range of ways and begin to use scientific language.</li> <li>• Begin to recognise different ways in which they might answer scientific questions.</li> </ul>			
<p>Key Stage 1 COVID Awareness in Science – Extra Unit 4 Lessons Other Links: English, PSHE, Art and Design            Lesson 1 – Introduction to microbes            Lesson 2 – Hand Hygiene            Lesson 3 – Respiratory Hygiene            Lesson 4 – Oral Hygiene</p>				



e-Bug   England Home						
Year 3	Animals including Humans Global Goal 11	Rocks Global Goals 14 and 15	Forces Global Goal 9	Magnets	Light Global Goal 1, 7, 11 and 13	Plants Global Goal 11 and 15
	<ul style="list-style-type: none"> <li>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.</li> <li>Identify that humans and some animals have skeletons and muscles for support, protection and movement.</li> <li>Record findings using simple scientific language,</li> </ul>	<ul style="list-style-type: none"> <li>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>Recognise that soils are made from rocks and organic matter and describe in simple terms how fossils are formed when things that have lived are trapped within rock.</li> <li>Gather, record, classify and present data in a variety of ways to help in answering questions</li> </ul>	<ul style="list-style-type: none"> <li>Compare how things move on different surfaces</li> <li>Notice that some forces need contact between two objects but magnetic forces can act at a distance</li> <li>Use straightforward scientific evidence to answer question or to support their findings</li> </ul>	<ul style="list-style-type: none"> <li>Observe how magnets attract or repel each and attract some materials and not others. Describe magnets as having two poles.</li> <li>Predict whether two magnets will attract or repel each other depending on which poles are facing.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Notice that light is reflected from surfaces and notice that shadows are formed when the light from a light source is blocked by a solid object.</li> <li>Recognise that light from the sun can be dangerous and that there are ways to protect your eyes.</li> <li>Find patterns in the way that the size</li> </ul>	<ul style="list-style-type: none"> <li>Identify and explore the different parts of flowering plants and know the functions of each part. Explore the requirements of plant for life and growth.</li> <li>Explore the part that flowers play in the lifecycle of flowering plants including pollination, seed formation</li> </ul>



	drawings, labelled diagrams, keys bar charts and tables.				of shadows change	and seed dispersal <ul style="list-style-type: none"> <li>Investigate the way in which water is transported within plants.</li> </ul>
<b>Year 4</b>	<b>Animals, including humans – teeth and digestion</b> <b>Global Goal 3</b>	<b>Animals including humans – food chains</b> <b>Global Goal 11</b>	<b>Electricity</b> <b>Global Goal 9 and 11</b>	<b>States of Matter/The Water Cycle</b> <b>Global Goal 6</b>	<b>Living things and their habitats</b> <b>Global Goal 13, 14 and 15</b>	<b>Sound</b>
	<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans</li> <li>Identify the different types of teeth in humans and their simple functions</li> </ul>	<ul style="list-style-type: none"> <li>Construct and interpret a variety of food chains</li> <li>Identify produced, predators and prey.</li> <li>Gather, record, classify and present data in a variety of ways to help in answering questions.</li> </ul>	<ul style="list-style-type: none"> <li>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</li> <li>Know when a circuit is</li> </ul>	<ul style="list-style-type: none"> <li>Compare and group materials together according to whether they are solids, liquids or gases and observe that some materials change state when heated or cooled.</li> <li>Identify the part played by evaporation and condensation in the</li> </ul>	<ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of ways</li> <li>Explore and use classification keys to help group, identify and name a</li> </ul>	<ul style="list-style-type: none"> <li>Identify how sounds are made associating some of them with something vibrating and recognise that vibrations from sounds travel</li> </ul>



	<ul style="list-style-type: none"> <li>Ask relevant questions and use different types of scientific enquiries to answer them.</li> </ul>		<p>complete and the components that influence this. Recognise that a switch opens and closes a circuit.</p> <ul style="list-style-type: none"> <li>Set up simple practical enquires, comparative and fair tests.</li> </ul>	<p>water cycle and associate the rate of evaporation with temperature.</p> <ul style="list-style-type: none"> <li>Make systematic and careful observations taking accurate measurements using standard units using a range of equipment including thermometers and data loggers.</li> </ul>	<p>variety of living things in their local and wider environment. Know that these environments can change and pose danger to living things</p> <ul style="list-style-type: none"> <li>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables</li> </ul>	<p>through a medium to the ear.</p> <ul style="list-style-type: none"> <li>Find patterns between the pitch of a sound and the strength of the vibrations that produced it.</li> <li>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</li> </ul>
<p><b>Skills Lower KS2</b></p>	<ul style="list-style-type: none"> <li>Asking relevant questions and using different types of scientific enquiries to answer them</li> <li>Setting up simple practical enquiries, comparative and fair tests</li> <li>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>Identifying differences, similarities or changes related to simple scientific ideas and processes</li> </ul>					



using straightforward scientific evidence to answer questions or to support their findings.					
Year 5	Forces Global Goal 9	Earth and Space Global Goal 9	Properties of Materials Global Goal 9 and 12	Changes in Materials Global Goal 11 and 13	Animals, including humans Living things and their habitats Global Goal 13, 14 and 15
	<ul style="list-style-type: none"> <li>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>Planning different types of scientific</li> </ul>	<ul style="list-style-type: none"> <li>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> <li>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system describe the movement of the Moon relative to the Earth</li> <li>Explain that unsupported objects fall towards the Earth because of the force of gravity</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible,</li> </ul>	<ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age</li> <li>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</li> </ul>





	enquires to answer questions including, recognising and controlling variable where necessary.	acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	through filtering, sieving and evaporating <ul style="list-style-type: none"> <li>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> </ul>	including changes associated with burning and the action of acid on bicarbonate of soda.		
<b>Year 6</b>	<b>Animals including humans</b> <b>Global Goal 12</b>	<b>Electricity</b> <b>Global Goal 11 and 12</b>	<b>Light</b> <b>Global Goal 1, 7, 11 and 13</b>	<b>Living things and their habitats</b> <b>Global Goal 13, 14 and 15</b>	<b>Evolution and inheritance</b> <b>Global Goals 14 and 15</b>	<b>We are scientists working scientifically</b>
	<ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory</li> </ul>	<ul style="list-style-type: none"> <li>I know that the brightness of a bulb is associated with the voltage of cells in a circuit</li> </ul>	<ul style="list-style-type: none"> <li>Recognise that light appears to travel in straight lines and use this</li> </ul>	<ul style="list-style-type: none"> <li>Describe and classify living things into broad groups according to observable</li> </ul>	<ul style="list-style-type: none"> <li>Recognise that living things have changed over time and that</li> </ul>	<ul style="list-style-type: none"> <li>I can report and present findings from enquiries, including</li> </ul>



	<p>system and describe the functions of the heart, blood vessels and blood as well as how nutrients are transported</p> <ul style="list-style-type: none"> <li>Recognise the impact of diet, exercise, lifestyle and drugs on the way their bodies function.</li> <li>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar/line graphs.</li> </ul>	<ul style="list-style-type: none"> <li>Compare and give reasons for variations in how components function, including the brightness of bulbs and the loudness of buzzers.</li> <li>Use recognised symbols when representing a simple circuit in a diagram.</li> </ul>	<p>idea to explain that objects are seen because they give out or reflect light into the eye</p> <ul style="list-style-type: none"> <li>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then our eyes</li> <li>Plan different types of scientific enquiries to answer questions including recognising and controlling variables where necessary</li> </ul>	<p>characteristics and based on similarities and differences</p> <ul style="list-style-type: none"> <li>Give reasons for classifying certain animals and plants based on specific characteristics</li> <li>Report and present findings from enquiries including explanations of results in oral and written forms.</li> </ul>	<p>fossils provide information about living things that inhabited the earth millions of years ago.</p> <ul style="list-style-type: none"> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> <li>Identify scientific evidence that has been used to support or refute ideas or arguments</li> </ul> <p>Charles Darwin, Alfred Wallace and Mary Anning</p>	<p>conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations (project presentation)</p>
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<b>Skills Upper KS2</b>	<ul style="list-style-type: none"><li>• Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li><li>• Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li><li>• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li><li>• Using test results to make predictions to set up further comparative and fair tests</li><li>• Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</li><li>• Identifying scientific evidence that has been used to support or refute ideas or arguments.</li></ul>
	<p>Key Stage 2 COVID Awareness in Science – Extra Unit 10 Lessons Other Links: English, PSHE, Art and Design</p> <p>Lesson1 – Introduction to microbes Lesson 2 – useful microbes Lesson3 – Harmful microbes Lesson4 – Hand Hygiene Lesson 5 – Respiratory Hygiene Lesson6 – Food Hygiene Lesson 7 – Animal and Farm Hygiene Lesson 8 – Oral Hygiene Lesson 9 – Vaccinations Lesson 10 – Antibiotics</p> <p>Lesson plans and Supporting Materials e-Bug Website <a href="#">e-Bug   England Home</a></p>

