

Science Curriculum Overview

Flexibility in the science curriculum - At Burrough Green and Great Wilbraham, we expect all aspects of the science curriculum covered over the year.

Investigations and observations can take place over several weeks, or even across the year (this is especially relevant for Year 1 and 2)

Science within EYFS is linked primarily to 'Understanding of the World' and 'Physical Development'.

Children in EYFS have opportunities throughout the year to be able to observe, play and question scientific phenomena through activities instigated by teachers or provided as part of provision.

Questions are modelled and encouraged using scientific vocabulary and stimulated through practical experiences as well as literary and mathematical ones.

Examples include, but are not limited to: growing their own fruit and vegetables, observing the lifecycle of a butterfly and observing the incubation and birth of baby chicks.

Diversity and Equality - CODES

Sexual Orientation	SO
Beliefs	B
Religion	RE
Disability	D
Age	A
Race	R
Gender	G

N/R/Y1/Y2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p>Our Natural World</p> <p>Notice changes in the outdoor environment Explore natural materials (leaves, sticks)</p> <p>Observe autumn changes.</p>	<p>Materials</p> <p>Explore materials using senses Talk about what things feel like</p> <p>Explore and describe materials.</p>	<p>Animals including humans</p> <p>Notice animals in the environment. Begin to talk about what animals need.</p>	<p>Plants</p> <p>Show curiosity about plants. Begin to understand things grow.</p> <p>Plant seeds.</p> <p>Identify plant</p>	<p>Forces and Movement</p> <p>Explore push and pull through play.</p> <p>Explore movement.</p> <p>Describe</p>	<p>Living things and their environments.</p> <p>Explore the natural world. Begin to care for living things.</p> <p>Local environment.</p> <p>Identify habitats.</p>

	<p>Name plants and animals.</p> <p>Identify trees and plants. Describe seasonal changes (Autumn)</p> <p>Explore living / non-living. Begin to look at habitats within the local area. Talk about what they see using simple words</p>	<p>Identify and group materials.</p> <p>Compare suitability and simple changes.</p>	<p>Name animals and features.</p> <p>Classify animals (mammals, birds)</p> <p>Habitats and food chains.</p>	<p>parts.</p> <p>Explain growth and survival.</p>	<p>forces.</p> <p>Investigate how things move.</p>	<p>Compare global environments</p>
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Y3/Y4 Cycle A	Autumn 1 BG	Autumn 1 GW	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p>Rocks RE</p> <p>Big Question: How old is the universe?</p> <p><i>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</i></p> <p><i>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</i></p>	<p>Light</p> <p><i>Recognise that they need light in order to see things and that dark is the absence of light</i></p> <p><i>Notice that light is reflected from surfaces</i></p> <p><i>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</i></p> <p><i>Recognise that shadows are formed</i></p>	<p>Forces and Magnets</p> <p><i>Compare how things move on different surfaces</i></p> <p><i>Notice that some forces need contact between two objects, but magnetic forces can act at a distance</i></p> <p><i>Observe how magnets attract or repel each other and attract some materials and not others</i></p> <p><i>Compare and group together a variety of everyday materials on the basis of whether they are</i></p>	<p>Plants</p> <p>Focus on life Cycle</p> <p><i>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</i></p> <p><i>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</i></p> <p><i>Investigate the way in which water is transported within plants</i></p>	<p>Uses of everyday materials</p> <p><i>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</i></p>	<p>Animals including humans</p> <p>Focus on Humans RE</p> <p>Big Question: Why are you the person you are?</p> <p><i>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</i></p>	<p>Working scientifically</p> <p>Completing the TAPS that you didn't get to do during the year in this term.</p>

	<p><i>Recognise that soils are made from rocks and organic matter.</i></p>	<p><i>when the light from a light source is blocked by an opaque object</i></p> <p><i>Find patterns in the way that the size of shadows change.</i></p>	<p><i>attracted to a magnet, and identify some magnetic materials</i></p> <p><i>Describe magnets as having two poles</i></p> <p><i>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</i></p>	<p><i>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</i></p>		<p>PSHE - Drug Education: Which substances might enter our bodies, how do they get there and what do they do?</p> <p>What are medicines and why and when do some people use them?</p> <p>When and why do people have an injection from a doctor or a nurse?</p> <p>Who is in charge of the medicine I take?</p> <p>What different things can help me feel better if I feel poorly?</p> <p>How can I keep safe with medicines and substances at home and at school?</p>	
Practical Resources	<p>Box of rocks - loan from Sedgwick</p>						
Explorify links	<p><u>Big Question - Do rocks stay the same forever?</u></p> <p><u>Odd one out - Useful rocks.</u></p> <p><u>Zoom in Zoom out - Obscure Orange</u></p>	<p><u>Zoom in Zoom out - dark marks</u></p> <p><u>Start with Art - Shadows</u></p>	<p><u>What if - you had magnets for fingers?</u></p> <p><u>Mystery bag - attracting objects</u></p>	<p><u>What's going on? - Super seeds</u></p> <p><u>Zoom in Zoom out - Brown and sticky</u></p> <p><u>What happened? - Three Weeds</u></p>	<p><u>Zoom in Zoom out - the space between</u></p> <p><u>Odd one out -Gear up</u></p>	<p><u>What if my bones were bendy?</u></p> <p><u>Big Question - How could we measure the benefits of walking?</u></p>	

	Zoom in Zoom out - Glitter and sparkle		Odd one out - Marvellous magnets				
Practical Enquiry Plan Do Review	Problem Solvers - Drainage Dilemma Soluble not soluble practical Reporting Rocks	Making Shadows Experiment with light and coloured sugar paper	Cars Down a Ramp Rocket Mice Balloon Rockets Which objects are magnetic? Plotting magnetic fields	Celery transportation Pollination - Cheesy puffs and bee puppets -https://www.twinkl.co.uk/resource/t-t-27278-eyfs-bee-and-pollination-science-experiment Function of plant stem	Bubble Snakes Waterproof Materials Tent or towel for teddy Strongest material investigation	Compare Handspans Make a skeleton from cotton buds. Bendy Bones experiment Moving hand bones using string People with longer femurs can jump further	
Scientist Study	Mary Anning	Patricia E. Bath	Michael Faraday	Mary Agnes Chase	John Dunlop		

Y3/4 Cycle B	Autumn 1		Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	GW Rocks RE Big Question: How old is the universe? Compare and group together different kinds of	BG Light Recognise that they need light in order to see things and that dark is the absence of light Notice that light is	Electrical Circuits 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	Animals including Humans Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions	States of Matter 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)	Sound This unit explores how sounds are made through vibrations, how they travel through mediums, and how pitch and volume relate to vibration strength. It also covers why sounds get fainter with distance. The emphasis is on practical enquiries, observations, and using results to draw conclusions.	Living things and their habitats 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

	<p>rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p>reflected from surfaces</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Find patterns in the way that the size of shadows change.</p>	<p>Identifying parts like cells, wires, and switches, and recognising conductors and insulators.</p>	<p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>		<p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>
Practical Resources	<p>Box of rocks - loan from Sedgwick</p>						
Explorify links	<p>Big Question - Do rocks stay the</p>	<p>Zoom in Zoom out - dark marks</p>		<p>Have you ever? - Helped an elderly person The Big Question - Why do</p>	<p>What if - the sea was gloopy? Have you ever? - splashed in a puddle</p>		<p>What if? - Humans lived underwater Odd one out - Australian Animals</p>

	same forever? Odd one out - Useful rocks. Zoom in Zoom out - Obscure Orange Zoom in Zoom out - Glitter and sparkle	Start with Art - Shadows		animals eat what they eat? Strange Snack	Snowflake Start with Art - water		Mission Survive - Make a creature
Scientist Study	Problem Solvers - Drainage Dilemma Soluble not soluble practical Reporting Rocks	Making Shadows Experiment with light and coloured sugar paper		Maria Merian	Joseph Priestly		William Beaumont
Practical Enquiry Plan Do Review	Mary Anning	Patricia E. Bath		Create adapted animals	Water Cycle ziploc bag. Sugar Cubes		Teeth (eggs) in a liquid

Y5/Y6 Cycle A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
					Personal perspectives and worldviews RE, B,	
	Animals including Humans <i>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</i> <i>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</i> <i>Describe the ways in which nutrients and water are transported within animals, including humans.</i>	Sound <i>Identify how sounds are made, associating some of them with something vibrating</i> <i>Recognise that vibrations from sounds travel through a medium to the ear</i> <i>Find patterns between the pitch of a sound and features of the object that produced it</i> <i>Find patterns between the volume of a sound and the strength of the vibrations that produced it</i> <i>Recognise that sounds get fainter as the distance from the sound source increases.</i>	Living things and their habitats G A <i>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</i> <i>Describe the life process of reproduction in some animals.</i>	Properties and changes of materials <i>Compare and group together everyday materials on the basis of their properties.</i> <i>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</i> <i>Use knowledge of solids, liquids and gases to decide how mixtures might be separated.</i> <i>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials.</i> <i>Demonstrate that dissolving, mixing and changes of state are reversible changes</i> <i>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes</i>	GW Big Question: How should Scientists spend their money? Big Question: Should we care about climate change? PSHE - Drug Education <i>What do I know about medicines, alcohol, smoking, solvents, and illegal drugs and why people use them?</i> <i>How does drug use effect the way a body or brain works?</i> <i>How do medicines help people with different illnesses?</i> <i>What immunisations have I had or may I have in future and how do they keep me healthy?</i> <i>What is drug misuse?</i> <i>What are some of the laws about drugs?</i> <i>When and how should I check</i>	BG

				<i>associated with burning and the action of acid on bicarbonate of soda.</i>	<i>information about drugs?</i>	
Practical Resources						
Explorify links	Big Question - How can you help someone dance for 24 hours? Have you ever? Have your heart rate measured Listen - skip a beat Zoom in Zoom out - Pink and Spongey Have you ever? - Had a blood test	Start with art - Musical Sounds Zoom in Zoom out - Hidden Depths Odd one out - Musical Vibrations	What if? - Fossils didn't exist What if? - animals did not have young? What's Going on? - Coming out to play What's going on? - Very hungry caterpillars Odd one out- Looking after baby	The Big Question - are all salt crystals the same? Zoom in Zoom out - Craggy Crevices Odd one out - Excuse me!	Who is - Michael Sulu? Who is? Alexander Fleming	
Scientist Study	Heart Rate Poses	What's Going on - Rice and Rhythm Muffling Sound(adapt) String Telephones Pitch	Life Cycle Acting Invertebrate Research	Growing Yeast	Reaction Catches	
Practical Enquiry Plan Do Review	Marie M. Daly	James Edward Maceo West	Jane Goodall	Lillian Gilbreth	Nettie Stevens R Michael Sulu Alexander Fleming	

Y5/Y6 Cycle B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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	Forces including simple machines This unit covers the effects of gravity, air resistance, water resistance, and friction on objects. It explores how mechanisms like levers, pulleys, and gears magnify forces. Emphasis is on taking precise measurements, recording complex data, and presenting findings.	Changing circuits This unit explores how circuit components like lamps and buzzers function, including the effect of cell number and voltage. It covers using symbols in circuit diagrams, planning scientific enquiries, taking precise measurements, recording data, and presenting findings with evidence and conclusions.	Climate Change and Sustainability This unit examines our climate and the factors affecting it. Emphasis is on using data, taking precise measurements, recording data, and presenting findings.	Reproduction in plants. This unit explores the life process of reproduction in plants and animals. It focuses on planning scientific enquiries, measuring with precision, recording complex data, and using test results to make predictions. Emphasis is on presenting findings, and evaluating scientific evidence.	Light and how it travels This unit explores how light travels in straight lines, explaining how we see objects and why shadows form the shape of the object casting them. It focuses on planning scientific enquiries, taking precise measurements, making predictions, and evaluating evidence to present findings.	
Practical Resources						
Explorify links	Big Hitters On Thin Ice What's Going On - Water Trick	Spinning Wires odd one out Soaking up rays	Pack it in family meal House Hog Hunting	Super Seeds Mission Survive	What if there were two suns Who is Patricia Bath Coloured Light	
Scientist Study	Archimedes	Faraday		Carl Linneaus	Patricia Bath	
Practical Enquiry Plan Do Review	Parachute Car	Changing Circuits	Design a hedgehog house		Measuring shadows	