

STEM Curriculum links for Cycle 1, building on previous knowledge

Science

Animals (incl. humans)	Materials
Plants	Sound
Light	Seasons
Electricity	Space
Forces	

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Foundation	<p>Name and describe people who are familiar to them.</p> <p>Explore the natural world around them</p> <p>Describe what they see, hear and feel whilst outside</p> <p>Understand the effect of changing seasons on the natural world around them</p> <p>Understand the key features of the life cycle of a plant and an animal</p> <p>Talk about the differences between materials and changes they notice</p> <p>Explore and talk about the different forces they can feel</p> <p>Recognise some environments that are different to the one in which they live.</p>					
Year 1 and 2		Comparing living dead, evergreen, deciduous trees and plants	Observe changes in seasons, weather associated with seasons and length of days	Materials-name everyday materials and distinguish between them. Use variety of materials to make a pirate boat-which is best suited.	Name variety of animals and their habitats. Find out animals basic needs and what animals eat (food chains). Describe and compare different animals.	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
Year 3 and 4	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	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	Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the	Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming the basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a	Construct and interpret a variety of food chains, identifying producers, predators and prey. Investigate the way in which water is transported within plants Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers	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

		the water cycle and associate the rate of evaporation with temperature	strength of the vibrations that produced it Recognise that sound gets fainter as the distance from the sound source increases	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 simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors	Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary from plant to plant Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	
Year 5 and 6	Describe property of materials. Classify and group mixtures - separation by sieving, filtering and evaporating. Reversible and irreversible changes. Record data using classification keys, tables, bar and line graphs. Comparative and fair testing (recover gold nuggets)	A range of science enquiries - comparative and fair testing (growth of bacteria and fungus). Make detailed scientific drawings of herbs, labelling its parts and sorting according to properties observed. Find out about and compare the lifecycle of rodents, fleas and bacteria.	Devise a classification key of appearance traits. Fingerprints - classify, find out which are most common, display results using a suitable graphing method. Nature vs. nurture debate. Inherited or learnt traits. Investigate the genetics of their classmates.	Identify and name the main parts of the human circulatory system. Describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans	Classify natural objects. Understand the significance of scientists' work. Learn about the variety of plants growing in the school grounds. Use test results and observations to make predictions. Describe how animals adapt for survival. Plan and carry out investigations. Adaptation and inheritance.	Shadows - sun light and position of Chichen Itza.

STEM Curriculum links for Cycle 2, building on previous knowledge

Science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Foundation	<p>Name and describe people who are familiar to them.</p> <p>Explore the natural world around them</p> <p>Describe what they see, hear and feel whilst outside</p> <p>Understand the effect of changing seasons on the natural world around them</p> <p>Understand the key features of the life cycle of a plant and an animal</p> <p>Talk about the differences between materials and changes they notice</p> <p>Explore and talk about the different forces they can feel</p> <p>Recognise some environments that are different to the one in which they live.</p>					
Year 1 and 2	<p>Look at common animals that are carnivores etc</p> <p>Look at features of reptiles</p>			<p>Materials- compare suitability of materials and physical properties of materials</p>	<p>Name and observe common plants</p> <p>Look at the structure of a variety of plants</p> <p>Look at how seeds and bulbs grow</p> <p>Look at basic needs of plants</p> <p>Seasonal changes</p> <p>observing changes</p> <p>cross the four seasons</p>	<p>Exercise</p> <p>Hygiene</p> <p>Human body</p> <p>Basic needs</p> <p>offspring</p>
Year 3 and 4	<p>Identify that animals, including humans, need the right types and right amount of nutrition and that they cannot make their own food, they get nutrition from what they eat</p>	<p>Compare how things move on different surfaces</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>Observe how magnets attract or repel each other and attract some materials and not others</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to</p>	<p>recognise that they need light in order to see things and that dark is the absence of light</p> <p>notice that light is 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</p>	<p>Compare and group together different kinds of 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 rocks</p> <p>Recognise that soils are made from rocks and organic matter</p>	<p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things</p>

		<p>a magnet, and identify some magnetic materials.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>blocked by an opaque object.</p> <p>Find patterns in the way that the size of shadows change.</p>			
Year 5 and 6	<p>Draw a series circuit using the conventional circuit symbols.</p> <p>Examine the incandescent bulb.</p> <p>Make own like Thomas Edison!</p>	<p>Classify leaves, understand seed dispersal and how plants reproduce.</p> <p>Adaptations of plant from a frozen land, to show how species are interdependent on each other as food sources.</p> <p>Observing seasons in extreme locations of the world.</p>	<p>Explain how light behaves and travels in straight lines.</p> <p>Recognise the dangers of using lasers and how they can be used safely.</p> <p>Make periscopes.</p> <p>Recall symbols in circuits.</p>	<p>Name planets of the solar system.</p> <p>Explore and size and scale of the Solar System.</p> <p>Explain day and night using the Earth's rotation.</p> <p>Seasons due to Earth's tilt.</p> <p>Moon, forces, gravity.</p>	<p>Describe the force of gravity. Theme parks - scientifically and systematically compare the functionality of a range of materials to perform a specific function.</p> <p>Plan a range of scientific enquiries.</p> <p>Make a simple pendulum. Take measurements with increased accuracy.</p> <p>Air resistance.</p> <p>Water resistance.</p>	<p>Check objectives to be covered in more depth (also covered during Off with her head).</p> <p>Identify and name the main parts of the human circulatory system. Describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>