

# St Gabriel's Catholic Primary School – Science Progression of Knowledge



Key skills	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Plants</b>	<p>To identify and name some plants we eat e.g. fruits and vegetables.</p> <p>To know a plant grows from a seed.</p> <p>To be able to name and recognise the main parts of plant e.g. leaves, flower and petals.</p> <p>To know plants need water to grow.</p>	<p>To identify and name some common garden plants and some plants we eat.</p> <p>To know a plant grows from either a seed or a bulb.</p> <p>To label the basic parts of a flowering plant e.g. leaf, root, stem and flower.</p> <p>To know plants need water and sunlight to grow healthy.</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees</p>	<p>Observe and describe how seeds and bulbs grow into mature plants</p> <p>Find out and describe how plants need water, light and a suitable temperature</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>Explore the requirements of plants for life and growth (air, light, water, nutrients)</p>			

				to grow and stay healthy	from soil, and room to grow) and how they vary from plant to plant			
					Investigate the way in which water is transported within plants			
					Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed			

					formation and seed dispersal				
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Animals including Humans	To name some common pets, zoo and farm animals	To describe the lifecycle of a frog and a hen.	Identify and name a variety of common animals	Notice that animals, including humans, have offspring which grow into adults	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.	Describe the simple functions of the basic parts of the digestive system in humans.	Describe the changes as humans develop to old age. Explain the human lifecycle from conception to old age.	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	
	To know and talk about the lifecycle of a butterfly	To be able to name some Arctic and Antarctic animals	including fish, amphibians, reptiles, birds and mammals	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	Identify that humans and some other animals have	Identify the different types of teeth in humans and their simple functions.			
	To know and talk about the basic human life cycle. (baby, child, adult)	To know and name some nocturnal animals	Identify and name a variety of common animals that are carnivores, herbivores and omnivores						Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
	To know how they are different from when they were a baby	To recognise and name some common mini-beasts found on the school grounds	Describe and compare the structure of a variety of				Construct and interpret a variety of		

	To know and name some external body parts (See vocab list)	To know that insects have wings, 6 legs and antennae	common animals (fish, amphibians, reptiles, birds and mammals, including pets)	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	skeletons and muscles for support, protection and movement.	food chains, identifying producers, predators and prey.		Describe the ways in which nutrients and water are transported within animals, including humans
	To know fruits and vegetables are healthy to eat	To know that a spider has 8 legs, no wings and no antennae.	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense					
	To know that water and milk is healthy to drink.	To know some spiders have webs.						
	To know how to keep clean e.g. washing hands and brushing teeth	To know and recall the human life cycle ( baby, toddler, child, teenager, adult, old person)						
		To know humans grow and change over time.						

		<p>To know and name some external and internal body parts.</p> <p>To know that humans have a skeleton that is made of bones.</p> <p>To know and name some foods which are healthy to eat</p> <p>To know and name some foods which are unhealthy to eat.</p> <p>To know humans need to drink water to stay healthy</p> <p>To know when and why we need to wash our hands</p>						
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		<p>To know exercise keeps our bodies healthy.</p> <p>To name some ways to keep our body fit and healthy.</p> <p>To know how to keep our teeth healthy.</p> <p>To know sleep is important to keep our mind and body healthy.</p>						
	<b>Pre-School</b>	<b>Reception</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
<b>Materials</b>	To identify and name common materials that make	To identify and name common materials that make objects	Distinguish between an object and the	Identify and compare the suitability of a variety of	Compare and group together different	Compare and group materials together,	Compare and group together everyday	

	objects (Wood and metal)	(Wood, plastic, metal, fabric)	material from which it is made	everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	types of rocks on the basis of their appearance and simple physical properties.  Children to use the terms porous, permeable absorbent, hard waring, soft.  Children to know how rocks are formed and to identify and group the three main types	according to whether they are solids, liquids or gases  Observes 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)  Children to know water goes solid below 0°C	materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets  Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance	
	To begin to understand the language associated with changing materials (Squash, squeeze, twist, push, rip, cut, roll, stretch, curl - Dough Disco link)	To know some properties of common materials (Hard, soft, rough, smooth)  To know that you can group materials/objects according to their properties.  To know that water can be a liquid or a solid.  To know you need to freeze water to make it a solid.  To know you need to heat ice (solid water)	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  Compare and group together a variety of everyday materials on the basis of their	Find out about how the shapes of solid objects made from some materials can be changed by squashing,				

	<p>up to make it a liquid again</p> <p>To know other materials melt</p> <p>To know that some metals are magnetic- they are attracted to magnets.</p> <p>To know that some materials float or sink.</p> <p>To know that floating means to stay on top of the water.</p> <p>To know that sinking means the object goes to the bottom of the water.</p>	<p>simple physical properties</p>	<p>bending, twisting and stretching</p>	<p>of rocks. Igneous, metamorphic and sedimentary</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that's oils are made from rocks and organic matter</p>	<p>and turns to steam and boils at 100 °C</p> <p>Children to know that different liquids have different freezing and melting points.</p> <p>Children to be able to read a thermometer.</p> <p>Children to also know how to use a data logger to record temperatures</p>	<p>from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of</p>	
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						<p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p>	<p>everyday materials, including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes  Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including</p>	
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							changes associated with burning and the action of acid on bicarbonate of soda	
<b>Seasonal Change</b>	<b>Pre-School</b>	<b>Reception</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
	To observe the weather and how it changes  To know the names of different types of weather ( rainy, sunny, windy, snowy, cold, warm, and hot)  To begin to develop an understanding of change over time	To know and name the four seasons in the year.  To know what the weather is like in each of the four seasons.  To observe and talk about the changes they can see.  To recognise and talk about the signs of different seasons	Observe changes across the four seasons.  Observe and describe weather associated with the seasons and how day length varies  Name and know when the four seasons occur	•Observe changes across the four seasons  •Observe and describe weather associated with the seasons and how day length varies				

		<p>To know that trees lose their leaves and change colour in autumn.</p> <p>To know that trees and plants grow leaves and flowers in spring.</p>	<p>Describe changes in clothing animals and plants over the four seasons</p>	<p>Know when the months when the day gets shorter and when they start to get longer.</p> <ul style="list-style-type: none"> <li>•Name and know when the four seasons occur</li> <li>•Describe changes in clothing animals and plants over the four seasons</li> </ul>				
	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

<p><b>Living things and their Habitat</b></p>				<p>Explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of</p>		<p>Recognise that living things can be grouped in a variety of ways including plants</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</p>	<p>Describe the differences in the life cycle of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life processes of reproduction in some plants and animals</p>	<p>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>Give reasons for classifying plants and animals based on specific characteristics</p>
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				<p>different kinds of animals and plants, and how they depend on each other</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>Describe how animals obtain their food from plants and other</p>		<p>can change and that this can sometimes pose dangers to living things</p>		
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				animals, using the idea of a simple food chain, and identify and name different sources of food				
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<b>Light</b>					Recognise that they need light in order to see things and that dark is the absence of light			Recognise that light appears to travel in straight lines  Use the idea that light

					<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>travels in straight lines to explain that objects are seen because they give out or reflect light in the eye</p> <p>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>Use the idea that light travels in</p>
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					<p>blocked by a solid object</p> <p>Find patterns in the way that the size of shadows changes</p>			<p>straight lines to explain why shadows have the same shape as the objects that cast them</p>
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<b>Forces and Magnets</b>					<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>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Identify the effects of air resistance, water</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 a magnet, and identify some magnetic materials</p>		<p>resistance and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p>	
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					<p>Describe magnets as having two poles          Predict whether two magnets will attract or repel each other, depending on which poles are facing</p>			
Sound	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						<p>Identify how sounds are made, associating some of them with something vibrating</p>		

						<p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations</p>		
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						<p>that produced it</p> <p>Recognise that sounds get fainter as the distance from the sound source increases</p>		
<p><b>Electricity</b></p>						<p>Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires,</p>		<p>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>Compare and give reasons for variations in how components function,</p>

						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 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		including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Used recognised symbols when representing a simple circuit in a diagram
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						simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors		
<b>Earth and Space</b>							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	

							<p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p>	
<b>Evolution and Inheritance</b>								<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the</p>

									<p>Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaption may</p>
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									lead to evolution (Link to RSE work in year 5)
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