

'Ensuring that from the very start of school, all children learn a diverse range of scientific knowledge and skills, creating the foundation for further learning throughout each year group which progressively builds and consolidates that foundation.'

St Gabriel's Catholic Primary School Science Progression Grid

Working Scientifically

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • Make general sensory observations of animals and plants • Describe the world around them • Look at objects and pictures and discuss what they can see • Ask simple questions about their familiar world • Generate a variety of ideas for investigating (not always realistic/appropriate) • Make predictions - guess what might happen? • Use non-standard units of measurement • Use simple comparative vocabulary - bigger, smaller • Make simple comparative statements - e.g. which worked best • Make simple recordings - pictures, words, art 	<ul style="list-style-type: none"> • Ask simple questions and recognise that they can be answered in different ways • Use simple equipment to observe closely • Perform simple tests • Identify and classify • Use his/her observations and ideas to suggest answers to questions • Gather and record data to help in answering questions 	<ul style="list-style-type: none"> • Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum • Use simple equipment to observe closely including changes over time • Perform simple comparative tests • Identify, group and classify • Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns • Gather and record data to help in answering questions including from secondary sources of information 	<ul style="list-style-type: none"> • Ask relevant questions and use different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Report on findings from enquiries, including oral and written 	<ul style="list-style-type: none"> • Ask relevant questions and use different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Report on findings from enquiries, including oral and written 	<ul style="list-style-type: none"> • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Use test results to make predictions to set up further comparative and fair tests • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and 	<ul style="list-style-type: none"> • Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Use test results to make predictions to set up further comparative and fair tests • Report and present findings from enquiries, including conclusions, causal relationships and

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			<p>explanations, displays or presentations of results and conclusions</p> <ul style="list-style-type: none"> • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support his/her findings 	<p>explanations, displays or presentations of results and conclusions</p> <ul style="list-style-type: none"> • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support his/her findings 	<p>degree of trust in results, in oral and written forms such as displays and other presentations</p> <ul style="list-style-type: none"> • Identify scientific evidence that has been used to support or refute ideas or arguments 	<p>explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <ul style="list-style-type: none"> • Report and present 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 • Describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources • Group and classify things and recognise patterns
Animals including Humans						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • Personal hygiene - learn how to wash hands and clean teeth properly (practical) • Body parts and functions • Animals and their young 	<ul style="list-style-type: none"> • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals 	<ul style="list-style-type: none"> • Understand that animals, including humans, have offspring which grow into adults • Describe the basic needs of animals, 	<ul style="list-style-type: none"> • Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their 	<ul style="list-style-type: none"> • Describe the simple functions of the basic parts of the digestive system in humans • Identify the different types of 	<ul style="list-style-type: none"> • Describe the changes as humans develop to old age 	<ul style="list-style-type: none"> • Identify and name the main parts of the human circulatory system, and describe the functions of the

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<ul style="list-style-type: none"> Looking after animals and plants Tadpoles - observing life cycle of frog 	<ul style="list-style-type: none"> Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) 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>including humans, for survival (water, food and air)</p> <ul style="list-style-type: none"> Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene 	<p>own food; they get nutrition from what they eat</p> <ul style="list-style-type: none"> Identify that humans and some other animals have skeletons and muscles for support, protection and movement 	<p>teeth in humans and their simple functions</p> <ul style="list-style-type: none"> Construct and interpret a variety of food chains, identifying producers, predators and prey 		<p>heart, blood vessels and blood</p> <ul style="list-style-type: none"> 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
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Living things and their Habitats

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<ul style="list-style-type: none"> Explore and compare the differences between things that are living, dead, and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they 		<ul style="list-style-type: none"> 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 Recognise that environments can change and that this can sometimes pose dangers and have an 	<ul style="list-style-type: none"> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals 	<ul style="list-style-type: none"> 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 Give reasons for classifying plants and animals based on specific characteristics

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		<p>depend on each other</p> <ul style="list-style-type: none"> Identify and name a variety of plants and animals in their habitats, including micro-habitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food 		<p>impact on living things</p>		
Plants						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Caring for plants. Preparing the garden area. Weeding the soil. Planting seeds. Observing and describing the changes over time. Springtime walk - signs of spring, senses Observation drawings of plants 	<ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees 	<ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy 	<ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 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 Investigate the way in which water is transported within plants Explore the part that flowers play in 	<ul style="list-style-type: none"> Recognise that environments can change and that this can sometimes pose dangers and have an impact on living things (Living Things and Habitats) 	<ul style="list-style-type: none"> Describe the life process of reproduction in some plants and animals (Living Things and Habitats) 	<ul style="list-style-type: none"> Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution (Evolution and Inheritance)

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			the life cycle of flowering plants, including pollination, seed formation and seed dispersal			
Evolution and Inheritance						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<ul style="list-style-type: none"> Describe in simple terms how fossils are formed when things that have lived are trapped within rock (Rocks) 	<ul style="list-style-type: none"> Recognise that environments can change and that this can sometimes pose dangers and have an impact on living things (Living Things and Habitats) 		<ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
Seasonal changes						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Observe changes across the four seasons Observe and describe weather associated with the 		<ul style="list-style-type: none"> Identify that animals, including humans, need the right types and amount of nutrition, and that they 		<ul style="list-style-type: none"> Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across 	

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	seasons and how day length varies		cannot make their own food; they get nutrition from what they eat (Animals Including Humans - could link to seasonal food)		the sky (Earth and Space - why do we have less daylight hours in Winter?)	
Materials and States of Matter						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Float or sink investigation 	<ul style="list-style-type: none"> Distinguish between an object and the material from which it is made 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 simple physical properties 	<ul style="list-style-type: none"> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching 		<ul style="list-style-type: none"> 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) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 	<ul style="list-style-type: none"> 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 Recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Give reasons, based on evidence from comparative and fair tests, for the 	

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					<p>particular uses of everyday materials, including metals, wood and plastic</p> <ul style="list-style-type: none"> • 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 changes associated with burning and the action of acid on bicarbonate of soda 	
Electricity						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • Life before electricity. Appliances we use now and famous inventors (Hoover, Dyson). 				<ul style="list-style-type: none"> • 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 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 		<ul style="list-style-type: none"> • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • 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

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				<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> Use recognised symbols when representing a simple circuit in a diagram
Earth and Space						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Learn about space exploration and discovery. What do astronauts do today? What experiments/investigations do they make whilst in space? Space suit and equipment. What would it be like to live in the space station? How do astronauts do daily routines in space - cleaning teeth, making a sandwich, go to sleep etc. What are planets/stars? Role play - going to the moon <ul style="list-style-type: none"> Jodrell Bank trip 	<ul style="list-style-type: none"> History - Tim Peake's journey into space 				<ul style="list-style-type: none"> 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 Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky 	

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Forces and Magnets						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<ul style="list-style-type: none"> Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance 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 Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing 		<ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity 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 	
Light						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<ul style="list-style-type: none"> Recognise that he/she needs light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces 			<ul style="list-style-type: none"> Recognise that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or

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			<ul style="list-style-type: none"> Recognise that light from the sun can be dangerous and that there are ways to protect eyes Recognise that light from the sun can be dangerous and that there are ways to protect eyes Find patterns in the way that the size of shadows change 			<p>reflect light into the eye</p> <ul style="list-style-type: none"> 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 Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
Sound						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				<ul style="list-style-type: none"> 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 strength of the vibrations that produced it 		

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				<ul style="list-style-type: none"> Recognise that sounds get fainter as the distance from the sound source increases 		
Rocks						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<ul style="list-style-type: none"> Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter 			<ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago