St Mary's Catholic Academy Progression within the Science Curriculum 2025-26

Progression in Scientific knowledge ,concepts & skills	EYFS		KS1		LKS2		UKS2		KS3
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Biology Animals Including Humans **Concepts** Function Changes Growth Energy	*Learns new vocabulary – Learn the names of key body parts (communication and language).* *Make healthy choices about food, drink, activity and toothbrushing (personal, social and emotional development).* Begin to make sense of their own life story. Understand the key features of	*Use a wider range of vocabulary – Learn the names of a wider range of body parts (communication and language). Know and talk about the different factors that support their overall health and wellbeing (personal, social and emotional development).* Talk about how they have grown and	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Identify and name a variety of common 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). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	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. Identify that humans and some other	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. Construct and interpret a variety	Describe the changes as humans develop to old age.	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. Identify and name the main parts	Movement in and out of cells. Cell structure and use of microscopes. Communicable and noncommunicable disease; pathogens; development of drugs; immunity. Control of blood glucose and body temperature. Control of water levels and kidney treatment. The skeleton.

	the life cycle an animal (butterfly, hen).	changed from a baby. Revisit the lifecycles learnt in Nursery and learn key features of new animal lifecycles (frog, duck).	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).	Notice that animals, including humans, have offspring which grow into adults.	animals have skeletons and muscles for support, protection and movement.	of food chains, identifying producers, predators and prey.		of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	
Biology ***Living things and their habitats***	Begin to understand the need to respect and care for the	Explore the natural world around them, making		Identify and name a variety of plants and		Recognise that living things can be grouped in a	Describe the differences in the life	Describe how living things are classified into broad	Animal reproduction. Plant reproduction.

Concepts Function Variation Adaptation Cause and effect Process	natural environment and all living things.	observations and drawing pictures of animals and plants (ELG).		animals in their habitats, including microhabitats. 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		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 to living things.	cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	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 .	

				how they depend on each other. 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.					
Biology *Plants* **Concepts** Structure Function Variation Growth	Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant (sunflower, bean). Begin to understand the need to respect	Plant seeds and care for growing plants. Revisit the lifecycles learnt in Nursery and learn key features of new plant lifecycles (pumpkin, strawberry).	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature	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	*Recognise that living things can be grouped in a variety of ways (including plants) (living things and their habitats).* *Explore and use*	*Describe the life process of reproduction in some plants and animals (living things and their habitats).*	*Describe how living things are classified into groups according to common observable characteristics and based on similarities and differences, plants (living things and*	Plant reproduction.

	and care for the natural environment and all living things.	Explore the natural world around them, making observations and drawing pictures of plants (ELG).	basic structure of a variety of common flowering plants, including trees.	to grow and stay healthy. *Identify and name a variety of plants and animals in their habitats, including microhabitats (living things and their habitats).*	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 the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	*classification keys to help group, identify and name a variety of living things in their local and wider environment (including plants) (living things and their habitats).*		*their habitats). Give reasons for classifying plants based on specific characteristics (living things and their habitats).*	
Biology ***Evolution and inheritance***				*Identify that most living things live in*	*Describe in simple terms how fossils*	*Recognise that environments*		Recognise that living things have changed	

Adaptation Variation Changes Evolution Growth Similarity and Difference				*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 depend on each other (living things and their habitats).*	*are formed when things that have lived are trapped within rocks (living things and their habitats).*	*can change and that this can sometimes pose dangers to living things (living things and their habitats).*		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.	

St Mary's Catholic Academy Progression within the Science Curriculum 2025-26

Biology/physics ***Seasonal changes*** **Concepts** Changes Cause and Effect Similarity and Difference	Talk about what they see, using a wide vocabulary (during seasonal walks and exploration).	Understand some important processes and changes in the natural world around them, including the seasons (ELG).	Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies.				*Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky (earth and space).*		
Physics ***Sound*** **Concepts** Cause and effect Changes						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. Recognise that sounds get fainter as the distance from the			

						sound source increases.			
Physics ***Forces and magnets*** **Concepts** Cause and effect Similarity and difference	Explore and talk about different forces they can feel.				Compare how things move on different surfaces. Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday		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		Types of forces. Balanced and unbalanced forces.

					materials on the basis of whether they are attracted to a magnet and identify some magnetic materials. Describe magnets as having 2 poles. Predict whether 2 magnets will attract or repel each other, depending on which poles are facing		levers, pulleys and gears allow a smaller force to have a greater effect. *Compare and group together everyday materials on the basis of their properties, including their response to magnets (materials).*		
Physics ***Light*** **Concepts** Cause and effect					Recognise that they need light in order to see things and that dark is			Recognise that light appears to travel in straight lines. Use the idea that light	Types of energy. Light, reflection and refraction.

					the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in			travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. 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.	

					the way that the size of shadows change.				
Physics ***Earth and Space*** **Concepts** Changes Similarity and Difference			*Observe changes across the four seasons (seasonal changes). Observe and describe weather associated with the seasons and how day length varies (seasonal changes).*				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		The solar system; stars and the moon.

							Earth's rotation to explain day and night and the apparent movement of the sun across the sky.		
Physics ***Electricity***						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	*Compare and group together everyday materials on the basis of their properties, including their electrical conductivity (properties and changes of materials).*	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	Types of energy. Static charge.

						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 simple series circuit. Recognise some common conductors and insulators, and		position of switches. Use recognised symbols when representing a simple circuit in a diagram.	

						associate metals with being good conductors.			
Chemistry ***Rocks*** **Concepts** Structure Cause and effect Changes Similarity and Difference			*Identify and name a variety of everyday materials, including rock (materials). Describe the simple physical properties of a variety of everyday materials, including rock (materials).*	*Identify and compare the suitability of a variety of everyday materials, including rock, for particular uses (materials).*	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			*Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago (evolution and inheritance).*	

St Mary's Catholic Academy Progression within the Science Curriculum 2025-26

					and organic matter.				
Chemistry ***Materials*** **Concepts** Structure Function Cause and effect Similarity and Difference	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about the differences between materials and changes they notice.	Understand some important processes and changes in the natural world around them, including changing states of matter (ELG).	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	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.		Compare and group materials together, according to whether they are solids, liquids or gases (states of matter). 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) (states of matter).	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. Know that some materials will dissolve in liquid to form a solution and describe		Atomic structure and use of periodic table. Separation techniques. Acid's, alkali's and neutralisation.

			everyday materials on the basis of their simple physical properties.			Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature (States of matter).	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 particular		

							uses of 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 changes associated with burning		

St Mary's Catholic Academy Progression within the Science Curriculum 2025-26

							and the action of acid on bicarbonate of soda.		
Working Scientifically	**Nursery**	**Reception**	**Year 1 and 2**		**Year 3 and 4**		**Year 5 and 6**		**Year 7**
	Talk about what they see, using a wide vocabulary. Explore how things work. *Be able to express a point of view and to debate when they disagree with an adult or a friend, using words as well as actions (communication and language).* *Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" (communication and language).*	Describe what they see, hear and feel whilst outside. *Ask questions to find out more and to check they understand what has been said to them (communication and language).* *Articulate their ideas and thoughts in well-formed sentences (communication and language).* *Use talk to help work out problems and organise thinking*	Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions Gathering and recording data to help in answering questions		Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language,		Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Using test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries,		An introduction into the use of laboratory equipment and rules and basic science skills.

		and activities, and to explain how things work and why they might happen (communication and language).		drawings, labelled diagrams, keys, bar charts, and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings.	including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments.	