St Joseph's Science Progression
Biology

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals including humans	Make observations of animals and explain why some things occur, and talk about changes in life cycles (N – Chicks and butterflies, R – Frogs) Make observations of ourselves (N - labelling our body parts, R – exploring growing up from a baby to an adult) Understand how to make healthy choices (N – Oral Health, R – Handwashing =, the spread of germs and healthy eating) Recognise our senses (N – know that we have 5 senses, R – explore our body parts in relation to our senses)	Identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals 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.	Notice that animals, including humans, have offspring which grow into adults 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 animals have skeletons and muscles for support, protection and movement.	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 of food chains, identifying producers, predators and prey	Describe the changes as humans develop 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 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
Living things and their habitats	Begin to understand the need to respect and care for the natural environment and all living things. Explore the flowers and plants growing in our Nursery and Reception garden, and observe how their colours and appearance change during each season. Know that different animals live in different habitats suited to their needs and requirements (N – farm animals, R – Zoo animals)		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 depend on each other Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from		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 to living things.	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	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

			plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.				
Plants	Explore Nature in Autumn (N – conkers, acorns, pinecones) Observe Spring flowers growing (N – Daffodils) Explore the best place for a plant to grow. Plant and look after seeds, use magnifiers to explore plants and seeds and label the parts of a plant (R – beans and bulbs)	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	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	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 the life cycle of flowering plants, including pollination, seed formation and seed dispersal			
Evolution							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

St Joseph's Science Progression
Chemistry

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Materials	Explore natural materials in the sand and water tray. Distinguish differences in textures of items collected during nature walks. Describe differences in materials and explore how to keep a teddy dry using waterproof materials (R).	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	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses Compare how things move on different surfaces Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching			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 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 and the action of acid on bicarbonate of soda	
Rocks				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			
States of matter	Investigate melting and freezing using ice.				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		

St Joseph's Science Progression
Physics

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Light	Understand the need to stay safe in the sun using sun hats and sun screen (N)			Recognise that they need light in order to see things and that dark is 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 a solid object Find patterns in the way that the size of shadows change.			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 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
Forces	Explore the forces of push and pull (N) using ramps and difference surfaces (R).			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 materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Describe magnets as having 2 poles and predict whether 2 magnets will attract or repel each other, depending on which poles are facing.		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	

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 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 associate metals with being good conductors.		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 Use recognised symbols when representing a simple circuit in a diagram
Seasonal changes/ Sound / Earth and space	**SEASONAL CHANGES** Autumnal walks to explore natural changes in our local area. Explore animals who hibernate in the Winter (N) Understand how to dress for winter weather and observe changes in our outdoor area. Explore and describe the snow and ice. Look for signs of spring and take part in the Great British Birdwatch (N -Robin and blackbird, R – pigeon and magpie)	**SEASONAL CHANGES** Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies			**SOUND** 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	**EARTH AND SPACE** 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	

St Joseph's Science Progression
Working Scientifically

EYFS	KS1	LKS2	UKS2
Ask questions to find out more information Use new vocabulary to talk about what they notice and observe Make comparisons between objects relating to size, length, weight and capacity Choose the right resources to carry out their own investigation Describe what they found out, observed and discovered Present their results in a short sentence (R)	During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: **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	During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: **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, 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	During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: **Planning** different types of scientific enquiries to answer questions, including recognising and controlling varibles where necessary **Taking measurements**, using a range of scientific equipment, with increasing accuracy and precision **Recording data and results** of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs **Using test results to make predictions to set up further comparative and fair tests** Using simple models to describe scientific ideas **Reporting and presenting findings** from enquiries, including conclusions, causal relationships and explanations of 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