Holy Family Science Progression

	Topic Overview					
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	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. Identify and name the roots, trunk, branches and leaves of a tree.	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 part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Explain 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. Know the way in which water is transported within plants.			

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Animals, including humans	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.	Know that animals, including humans, have offspring which grow into adults Know the basic stages in a life cycle for animals, including humans. Find out 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 they cannot make their own food; they get their nutrition from what they eat. Know how nutrients, water and oxygen are transported within animals and humans. Know about the importance of a nutritious, balanced diet. Identify that humans and some other animals have skeletons and muscles for support, protection and movement: Know about the skeletal and muscular system of a human.	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.	Know the life cycle of different living things, e.g. Mammal, amphibian, insect bird. Know the differences between different life cycles. Know the process of reproduction in plants. Know the process of reproduction in animals.	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.

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Living things and their habitats		Explore and compare the difference 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 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 the different sources of food.		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. Know and label the features of a river Recognise that environments can change and that this can sometimes pose danger 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.	Classify living things into broad groups according to observable characteristics and based on similarities and differences. Give reasons for classifying plants and animals based on specific characteristics. Know how animals and plants are adapted to suit their environment. Know about reproduction and offspring (recognising offspring normally vary and are not identical to their parents). Know the ways in which nutrients and water are transported in animals, including humans.

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Evolution and inheritance						Know about evolution and can explain what it is. Know how fossils can be used to find out about the past. 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- recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago

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Materials	Distinguish between and object and the material from which it is made. Identify and name a variety of everyday materials, including wood, metal, plastic, glass, 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 properties.	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 shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Know how soil is made and fossils formed. Know about and explain the difference between sedimentary, metamorphic and igneous rock. Compare and group rocks based on their appearance and physical properties, giving a reason. 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 properties.	Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when heated or cooled, and measure and research the temperature at which this happens in degrees Celsius. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	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 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 wood, metals 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 this kind of change is usually not reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	

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Light and Sound	Name the seasons and know about the type of weather in each season		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 sizes of shadows change.	Know how sound is made associating some of them with vibrating. Know what happens to a sound as it travels from its source to our ears. Know the correlation between the volume of a sound and the strength of the vibrations that produced it. Know how sound travels from a source to our ears. Know the correlation between pitch and the object producing a sound.		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. Know how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.

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Forces (including electricity)			Compare how things move on different surfaces. Know how a simple pulley works and use making lifting an object simpler Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract and 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 two poles. Predict whether two magnets with attract or repel each other, depending on which poles are facing.	Identify common appliances that run on electricity. Safety when using 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 the 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. Know the difference between a conductor and an insulator; giving examples of each.	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object and the impact of gravity on our lives. Identify the effects of air resistance, water resistance and friction, which act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Describe the Sun, Earth and Moon (using the term spherical). Know and demonstrate how night and day are created. Know about and explain the movement of the Moon relative to the Earth. Know about and explain the movement of the Earth and other planets relative to the Sun.	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.

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	Sci1		
	Year 1 Year 2	Year 3 Year 4	Year 5 Year 6
Science 1 Targets	I can ask simple questions about the world around me. I can observe closely, using simple equipment. I can perform simple tests. I can identify and classify. I can use my observations and ideas to suggest answers to questions **Challenge Target** I can gather and record data to help in answering questions.	I ask relevant questions. I can set up simple practical enquiries, comparative and fair tests. I can make accurate measurements using standard units, using a range of equipment, for example thermometers and data loggers. I can gather, record, classify and presenting data in a variety of ways to help in answering questions. I can record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests I can identify differences, similarities or changes related to simple scientific ideas and processes.	I can plan enquiries, including recognising and controlling variables where necessary I can take measurements, using a range of scientific equipment, with increasing accuracy and precision I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models I can report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. I can present findings in written form, displays and other presentations. I can use test results to make predictions to set up further comparative and fair tests. I can use simple models to describe scientific ideas I can identify scientific evidence that has been used to support or refute ideas or arguments.