



Holy Cross Catholic Primary School

Science Long Term Overview

Cycle 1 2021-22

Year Group	Autumn 1 st	Autumn 2 nd	Spring 1 st	Spring 2 nd	Summer 1 st	Summer 2 nd
Nursery	<ul style="list-style-type: none"> • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. <ul style="list-style-type: none"> • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice. <ul style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. 					
Reception/ ELG	<ul style="list-style-type: none"> • Understand the effect of changing seasons on the natural world around them. 					
	<ul style="list-style-type: none"> • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. <ul style="list-style-type: none"> • Explore the natural world around them, making observations and drawing pictures of animals and plants. 					
1	Animals including humans <ul style="list-style-type: none"> • Identify, name, draw and label the basic parts of a human body and say which body part is associated with each sense. 	<ul style="list-style-type: none"> • Everyday materials • Identifying and name a variety of everyday materials. • Distinguish between an object and the material it is made from. 	Animals including humans <ul style="list-style-type: none"> • Identify and name a variety of common animals- <i>mammals, birds, reptiles, fish, amphibians</i>. • Describe and compare the structure of common animals- <i>mammals, birds,</i> 	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 	Animals including humans <ul style="list-style-type: none"> • Identify and name a variety of common animals- <i>mammals, birds, reptiles, fish, amphibians</i>. • Describe and compare the structure of common animals- <i>mammals, birds, reptiles, fish, amphibians</i>. 	Seasonal Change , weather and day length- Summer



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	<ul style="list-style-type: none"> Seasonal Change, weather and day length- Autumn Using their observations and ideas to suggest answers to questions. <p>Pattern Seeking</p>	<ul style="list-style-type: none"> Describe 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. <p>Seasonal Change, weather and day length- Winter</p> <p>Fair Testing</p>	<p>reptiles, fish, amphibians.</p> <ul style="list-style-type: none"> Identify and name a variety of animals that are herbivore, omnivore and carnivore. <p>Seasonal Change, weather and day length- Spring</p> <p>Research</p>	<ul style="list-style-type: none"> flowering plants including trees. <p>Observing Over Time</p>	<ul style="list-style-type: none"> Identify and name a variety of animals that are herbivore, omnivore and carnivore. <p>Identifying and classifying</p>
	<p>Working Scientifically vocabulary question, answer, observe, observing, equipment, identify, sort, group, compare, differences, similarities, describe, measurements, test, results, secondary sources record – diagram, chart</p>				
2	<p>Animals including humans</p> <ul style="list-style-type: none"> Notice that animals, including humans, have 	<p>Uses of Everyday materials</p> <ul style="list-style-type: none"> identify and compare the suitability of a variety of 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> Identify that most living things live in habitats to which they are suited 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> Observe and describe how seeds and bulbs 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> Explore and compare the differences between things that are living, dead, and things that have never been alive



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	<p>offspring which grow into adults.</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. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) <p>Observing Over Time Pattern Seeking</p>	<p>everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <ul style="list-style-type: none"> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <p>Identifying and Classifying</p>	<p>and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <ul style="list-style-type: none"> 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>Research</p>	<p>grow into mature plants</p> <ul style="list-style-type: none"> Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <p>Fair Testing</p>	<ul style="list-style-type: none"> Identify and name a variety of plants and animals in their habitats, including microhabitats Identify and name a variety of plants and animals in their habitats, including microhabitats 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 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 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>Identifying and Classifying Pattern Seeking Observing Over Time</p>
<p style="text-align: center;">Working Scientifically vocabulary question, answer, observe, observing, equipment, identify, sort, group, compare, differences, similarities, describe, measurements, test, results, secondary sources</p>					



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record – diagram, chart

	record – diagram, chart				
3/4	<p>Animals, including humans</p> <ul style="list-style-type: none"> identify that humans and some other animals have skeletons and muscles for support, protection and movement <p>Research</p>	<p>Light</p> <ul style="list-style-type: none"> 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 an opaque object find patterns in the way that the size of 	<p>Forces and magnets</p> <ul style="list-style-type: none"> 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 predict whether 2 magnets will attract or repel each other, depending on which poles are facing <p>Fair Test</p>	<p>Sound</p> <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 recognise that sounds get 	<p>Living things</p> <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 to living things <p>Classifying</p>



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		<p>shadows change</p> <p>Pattern seeking</p>		<p>fainter as the distance from the sound source increases</p> <p>Pattern seeking</p>	
<p>Working Scientifically vocabulary oral and written explanations, conclusion, predictions, criteria, classify, changes, data, contrast, evidence, improve, secondary sources, guides, keys, construct, interpret research – relevant question equipment – thermometer, data – gather, standard units, record, classify, present record – drawings, labelled diagrams, keys, bar charts, tables</p>					
5/6	<p>Properties and changes of materials (Y5)</p> <ul style="list-style-type: none"> use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating compare and group together everyday materials on the basis of their properties, including 	<p>Animals including humans (Y6)</p> <ul style="list-style-type: none"> 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 	<p>Properties and changes of materials (Yr5)</p> <ul style="list-style-type: none"> know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution demonstrate that dissolving, mixing and changes of state are reversible changes <p>Fair Testing</p>	<p>Living things and their habitats (Y5)</p> <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 <p>Living things and their habitats (Y6)</p>	<p>Properties and changes of materials (Y5)</p> <ul style="list-style-type: none"> 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 (focus on toothpaste) <p>Evolution and inheritance (Y6)</p> <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 (Focus - Mary Anning) <p>Observing over time.</p>



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	<p>solubility.</p> <p>Forces (Yr 5)</p> <ul style="list-style-type: none">recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect <p>Pattern seeking</p>	<p>their bodies function</p> <ul style="list-style-type: none">describe the ways in which nutrients and water are transported within animals, including humans <p>Research</p>		<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 animalsgive reasons for classifying plants and animals based on specific characteristics <p>Evolution and inheritance (Y6)</p> <ul style="list-style-type: none">recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to	
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				<p>their parents</p> <p>Link to RSE – see separate planning</p> <p>Classifying</p>	
	<p>Working Scientifically vocabulary</p> <p>plan, variables, measurements, accuracy, precision, repeat readings, predictions, further comparative and fair test, identify, classify and describe, patterns, systematic, quantitative measurements</p> <p>report data – scientific diagrams, labels, classification keys, tables, scatter graphs, bar graph and line graphs</p> <p>report and present – conclusions, casual relationships, explanations, degree of trust, oral and written display and presentation</p> <p>evidence – support, refute, ideas or arguments</p> <p>biology, physics, chemistry</p>				



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Reception/ ELG	<ul style="list-style-type: none"> • Understand the effect of changing seasons on the natural world around them. 					
	<ul style="list-style-type: none"> • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. • Explore the natural world around them, making observations and drawing pictures of animals and plants. 					
1	Animals including humans <ul style="list-style-type: none"> • Identify, name, draw and label the basic parts of a human body and say which body part is associated with each sense. <p>head, nose, ear, neck, tail, fin sight, smell, touch, taste, hearing</p> <ul style="list-style-type: none"> • Seasonal Change, weather and 	<ul style="list-style-type: none"> • Everyday materials • Identifying and name a variety of everyday materials. • Distinguish between an object and the material it is made from. • Describe simple physical properties of a variety of everyday materials. 	Animals including humans <ul style="list-style-type: none"> • Identify and name a variety of common animals- <i>mammals, birds, reptiles, fish, amphibians</i>. • Describe and compare the structure of common animals- <i>mammals, birds, reptiles,</i> 	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. 	Animals including humans <ul style="list-style-type: none"> • Identify and name a variety of common animals- <i>mammals, birds, reptiles, fish, amphibians</i>. • Describe and compare the structure of common animals- <i>mammals, birds, reptiles, fish, amphibians</i>, carnivore wing, beak, <p>Seasonal Change, weather and day length- Summer</p> <ul style="list-style-type: none"> • Identify and name a variety of animals that are herbivore, omnivore and carnivore. <p>Identifying and Classifying</p>	



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	<p>day length- Autumn</p> <ul style="list-style-type: none"> Using their observations and ideas to suggest answers to questions. 	<ul style="list-style-type: none"> Compare and group together a variety of everyday materials on the basis of their simple properties. <p>Seasonal Change, weather and day length- Winter</p> <p>Fair Testing</p>	<p>fish, amphibians.</p> <p>shoulder, arm, elbow, wrist, hand, back, chest, hip, leg, knee, ankle, foot fish, mammals,(+ 1 example of each) herbivore, omnivore,</p> <ul style="list-style-type: none"> Identify and name a variety of animals that are herbivore, omnivore and carnivore. <p>Seasonal Change, weather and day length- Spring</p> <p>Research</p>	<ul style="list-style-type: none"> Observing closely using simple equipment. Gathering and recording data to help in answering questions. <p>Observing Over Time</p> <p>Pattern Seeking</p>	
	<p>Working Scientifically vocabulary question, answer, observe, observing, equipment, identify, sort, group, compare, differences, similarities, describe, measurements, test, results, secondary sources record – diagram, chart</p>				
2	<p>Animals including humans</p> <ul style="list-style-type: none"> Notice that animals, including humans, have offspring which 	<p>Uses of Everyday materials</p> <ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> Identify that most living things live in habitats to which they are suited and 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow into mature plants 	<p>Living things and their habitats</p> <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 and name a variety of plants and animals in their habitats, including microhabitats



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	<p>grow into adults.</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. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) <p>•</p> <p>Pattern Seeking</p> <p>22-23 *to be added: Observing Over Time</p>	<p>including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <ul style="list-style-type: none"> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <p>Identifying and Classifying</p>	<p>describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <ul style="list-style-type: none"> 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>Research</p>	<ul style="list-style-type: none"> Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <p>Fair Testing</p>	<ul style="list-style-type: none"> Identify and name a variety of plants and animals in their habitats, including microhabitats 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 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 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>Identifying and Classifying</p> <p>Observing Over Time</p> <p>Pattern Seeking</p>
<p style="text-align: center;">Working Scientifically vocabulary question, answer, observe, observing, equipment, identify, sort, group, compare, differences, similarities, describe, measurements, test, results, secondary sources record – diagram, chart</p>					



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<p>3/4</p>	<p>Animals including humans</p> <ul style="list-style-type: none"> identify the different types of teeth in humans and their simple functions <p>Observing over time</p>	<p>Animals including humans</p> <ul style="list-style-type: none"> describe the simple functions of the basic parts of the digestive system in humans 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 construct and interpret a variety of food chains, identifying producers, predators and prey. <p>Classifying</p>	<ul style="list-style-type: none"> 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 	<p>Solids, liquids and gases</p> <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 <p>Pattern seeking</p>	<p>Plants</p> <ul style="list-style-type: none"> identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers <ul style="list-style-type: none"> 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 <p>Pattern seeking</p>	<p>Rocks</p> <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 <p>Classification</p>
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			<ul style="list-style-type: none"> recognise some common conductors and insulators, and associate metals with being good conductors <p>Fair test</p>			
<p>Working Scientifically vocabulary oral and written explanations, conclusion, predictions, criteria, classify, changes, data, contrast, evidence, improve, secondary sources, guides, keys, construct, interpret research – relevant question equipment – thermometer, data – gather, standard units, record, classify, present record – drawings, labelled diagrams, keys, bar charts, tables</p>						
5/6	<p>Electricity (Yr 6)</p> <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. Compare and give reasons for variations in how components function, including the 	<p>Forces (Yr 5)</p> <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 	<p>Earth and Space (Yr 5)</p> <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 	<p>Properties and changes of materials (Yr 5)</p> <ul style="list-style-type: none"> Compare and group together everyday materials on the basis of their properties, including <i>transparency</i>. <p>Light (Yr 6)</p> <ul style="list-style-type: none"> Explain that we see things because light 	<p>Evolution and inheritance (Yr 6)</p> <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. Recognise that living things have changed over time. <p>Animals including humans (Yr 5)</p> <ul style="list-style-type: none"> Describe the changes as humans develop to old age. <p>Link to RSE – see separate planning</p> <p>Observing over time</p>	



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	<p>brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p> <ul style="list-style-type: none">• Use recognised symbols when representing a simple circuit in a diagram. <p>Properties and Changes of Materials (Y5)</p> <ul style="list-style-type: none">• Compare and group together everyday materials on the basis of their properties, including their hardness, conductivity, (electrical and thermal) and response to magnets.• Give reasons, based on evidence from comparative and fair tests, for the particular uses	<p>friction, that act between moving surfaces.</p> <p>Fair Testing</p>	<p>approximately spherical bodies.</p> <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 the sky <p>Research</p>	<p>travels from light sources to our eye or from light sources to objects and then to our eyes.</p> <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 reflect light into the eye.• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. <p>Classifying</p>	
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	of everyday materials, including metals, wood and plastic.				
	Pattern seeking	<p>Working Scientifically vocabulary</p> <p>plan, variables, measurements, accuracy, precision, repeat readings, predictions, further comparative and fair test, identify, classify and describe, patterns, systematic, quantitative measurements</p> <p>report data – scientific diagrams, labels, classification keys, tables, scatter graphs, bar graph and line graphs</p> <p>report and present – conclusions, casual relationships, explanations, degree of trust, oral and written display and presentation</p> <p>evidence – support, refute, ideas or arguments</p> <p>biology, physics, chemistry</p>			