Christ the King
Catholic Primary School

LOVE ASPIRE SERVE

Independent Curious Communicators Resilient Reflective

Science Progression Map

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	Children will have the opportunity to observe plants in their environment. They will look at plants that are food and observe plants growing from seeds. They will also observe what happens if you don't look after a plant. They will learn how to: - Explore the natural world around them, making observations and drawing pictures of animals and plants - Plant seeds and care for growing plants.	1. Prior learning recap, cultural capital 2. Identify and name a variety of common and wild garden plants, including deciduous and evergreen trees 3. Identify and describe the basic structure of a variety of common flowering plants, including trees **Working scientifically:** Observing closely, comparing and contrasting familiar plants.	1. Prior learning recap, cultural capital 2. Observe and describe how seeds and bulbs grow into mature plants 3. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Investigate! **Working scientifically:** Observing and recording the growth of a variety of plants Observe similar plants at different stages.	1. Prior learning recap, cultural capital 2. Identify and describe the function of different parts of flowering plants: roots, stem/trunk, leaves and flowers 3. Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) 4. Investigate the way in which water is transported within plants. Celery investigation. 5.Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Compare the effect of different factors on plant growth **Working scientifically:** Observe how water is transported in plants by putting white carnations into coloured water and observing how water travels up the stem to the flowers.			
Animals including humans	Reception will give children the chance to learn about different animals through stories and real-life experiences.	1. Prior learning recap, cultural capital 2. Identify and name a variety of common animals including fish, amphibians,	1. Prior learning recap, cultural capital 2. Notice that animals, including humans, have offspring which grow	1. Prior learning recap, cultural capital 2. Identify that animals, including humans, need the right types and	1. Prior learning recap, cultural capital 2. Describe the simple functions of the basic parts of the digestive	1. Prior learning recap, cultural capital 2. Describe the changes as humans develop to old age.	1. Prior learning recap, cultural capital 2. Identify and name the main parts of the human circulatory

	In Summer term they will have observed chicks hatching from eggs. They will : -Understand the key features of the life cycle of a plant and an animal -Observe animals and living things - Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.	reptiles, birds and mammals 3. Identify and name a variety of common animals that are carnivores, herbivores and omnivores 4. Describe and compare the structure of a variety of common animals 5. Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **Working scientifically:** observing closely to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells	into adults 3. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) 4. Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. **Working scientifically**: Asking simple questions and recognising that they can be answered in different ways	amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat 3. Identify that humans and some other animals have skeletons and muscles for support, protection and movement. **Working scientifically:** Identifying and grouping animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons	system in humans 3. Identify the different types of teeth in humans and their simple functions 4. Construct and interpret a variety of food chains, identifying producers, predators and prey **Working scientifically:** Comparing the teeth of carnivores and herbivores, and suggesting reasons for differences; finding out what damages teeth and how to look after them	**Working scientifically**: Researching the gestation periods of other animals and comparing them with human Finding out and recording the length and mass of a baby as it grows.	system, and describe the functions of the heart, blood vessels and blood 3. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function 4. Describe the ways in which nutrients and water are transported within animals, including humans. **Working scientifically:** Taking measurements, using a range of scientific equipment, with increasing accuracy and precision
Living things and habitats	Reception will give children the chance to learn about different animals through stories and real-life experiences. In Summer term they will have observed chicks hatching from eggs. They will learn how to: -Understand the key features of the life cycle of a plant and an animal -Make observations of animals and living things		1. Prior learning recap, cultural capital 2. Explore and compare the differences between things that are living, dead, and things that have never been alive 3. 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		1. Prior learning recap, cultural capital 2. Recognise that living things can be grouped in a variety of ways - classification 3. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment 4. Recognise that environments can change and that this can sometimes pose dangers to living things.	1. Prior knowledge and cultural capital. Jane Goodall and David Attenborough 2, Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird 3. Describe the life process of reproduction in some plants and animals **Working scientifically**: Grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs	1. Prior knowledge and cultural capital. Carl Linnaeus 2. Describe how micro- organisms are classified into broad groups according to common observable characteristics and based on similarities and differences, . 3. Describe how plants are classified into broad groups according to common observable characteristics and based on similarities and differences

	- Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.		4. Identify and name a variety of plants and animals in their habitats, including microhabitats 5. 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. **Working scientifically:** sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts		Deforestation, global warming, ice caps. 5. Explore how living things adapt to their changing environments in order to survive. **Working scientifically:** Asking relevant questions and using different types of scientific enquiries to answer them. Making systematic and careful observations		4. Describe animals are classified into broad groups according to common observable characteristics and based on similarities and differences, 5. Give reasons for classifying plants and animals based on specific characteristics **Working scientifically**: Using classification systems and keys to identify some animals and plants in the immediate environment. Research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system
Electricity					1. .Prior knowledge and cultural capital- 2. Identify common appliances that run on electricity 3. Construct a simple series circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers 4. Identify whether or not a lamp will light in a simple circuit, based on whether the lamp is part of a complete loop with a battery. 5. Recognise that a switch opens/closes a		1. .Prior knowledge and cultural capital- 2. Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit 3. 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 4. Use recognised symbols when representing a simple circuit in a diagram.

					circuit and associate this with whether a lamp lights in a circuit 6. Recognise some common conductors and insulators, and associate metals with being good conductors. **Working scientifically:** Observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.		**Working scientifically:** Systematically identifying the effect of changing one component at a time in a circuit; 6. Designing and making a set of traffic lights, a burglar alarm or some other useful circuit.
Materials	In EYFS children will explore lots of different materials through their play. They will be introduced to vocabulary to describe what they feel and look like. They will learn to: - Talk about the differences between materials and changes they notice. - Use all their senses in hands on exploration of natural materials. - Explore collections of materials with similar and/or different properties	1. Prior learning recap, cultural capital 2. Distinguish between an object and a material 3. Identify and name the materials that objects have been made from 4. Describe simple physical properties of materials. Link back to EYFS discovering if an object is hard/soft, stretchy/ shift, shiny/dull etc 5. Group materials together based on their properties. 6. Compare and suggest materials for uses. **Working scientifically**: Compare and identify objects and the materials they are made from	1. Prior learning recap, cultural capital – John Dunlop, Charles Macintosh, John McAdam 2. Identify and compare the use of a variety of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard. 3. Explore the uses of different materials (as above) 4. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting, and stretching. 5. Why are some things only made out of one material (e.g. coins made from metal) and others can be made from lots of different materials (e.g. cutlery-		1. Prior learning recap, cultural capital 2. Explore the different states of matter including the connection between particle density. 2. Compare and group materials based on whether they are solid, liquids or gas. 3. Observe that some materials change state when they are heated or cooled. 4. Investigation Measuring the point at which changes occur between states of matter – boiling kettle 5. Understand what is meant by condensation and evaporation 6. Link condensation and evaporation to the water cycle in order to	1. Prior learning recap, cultural capital 2. Compare and group together everyday materials on the basis of their properties. 3. Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution 4. Use knowledge of solids, liquids and gases to decide how mixtures might be separated through filtering, sieving and evaporating. 5. Give reasons based on evidence for from comparative and fair tests for the particular uses of everyday materials, including metals, woods and plastics. 6. Demonstrate that dissolving, mixing and	

			plastic, metal, wood) **Working scientifically:** Compare and identify objects and the materials they are made from		answer our big question **Working scientifically:** Carry out and observe and investigation focusing on: Sc4/1.5 Gathering and recording findings using simple scientific language, drawings and labelled diagrams	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. **Working scientifically**: Carry out tests to answer questions. Research and discuss how chemical changes can have an impact on our lives.	
Understanding our World - Seasonal Changes/ Earth and Space/ Rocks/ Evolution	In EYFS children will explore the world around them and will start to look at seasons and how the weather and environment changes. They will learn how to: - Understand the effect of changing seasons on the natural world around them. - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	1. Prior knowledge and cultural capital 2. Earth, sun and moon- recognise how and why we have different seasons/day and night. **Working scientifically:** 3. Observe changes across the 4 seasons 4. Observe and describe weather associated with the seasons and how day length varies.		1. Prior knowledge and cultural capital 2. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties 3. Describe in simple terms how fossils are formed when things that have lived are trapped within rock 4. Recognise that soils are made from rocks and organic matter **Working scientifically:** Observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time Research and discuss the different kinds of		1. Prior knowledge and cultural capital 2. Describe the movement of the Earth, and other planets, relative to the Sun in the solar system 3. Describe the movement of the Moon relative to the Earth 4. Describe the Sun, Earth and Moon as approximately spherical bodies 5. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. **Working scientifically:** comparing the time of day at different places on the Earth through internet links and direct communication	1. Prior learning recap, cultural capital 2. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago 3. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents 4. Identify how animals and plants are adapted to suit their Environment in different ways and that adaptation may lead to evolution. **Working scientifically:** Observing and raising questions about local animals

				living things whose fossils are found in sedimentary rock and explore how fossils are formed			and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. They might analyse the advantages and disadvantages of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.
Light and sound				1. Prior knowledge and cultural capital 2. Recognise that they need light in order to see things and that dark is the absence of light 3. Notice that light is reflected from surfaces 4. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes 5. Recognise that shadows are formed when the light from a light source is blocked by an opaque object 6. Find patterns in the way that the size of shadows change **Working scientifically:** Looking for patterns in what happens to	1. Prior knowledge and cultural capital 2. Identify how sounds are made, associating some of them with something vibrating 3. Recognise that vibrations from sounds travel through a medium to the ear 4. Find patterns between the pitch of a sound and features of the object that produced it 5. Find patterns between the volume of a sound and the strength of the vibrations that produced it 6. Recognise that sounds get fainter as the distance from the sound source increases.		1. Prior knowledge and cultural capital 2. Recognise that light appears to travel in straight lines 3. 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 4. 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 5. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

				shadows when the light source moves or the distance between the light source and the object changes	**Working scientifically**: Finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. Make earmuffs from a variety of different materials to investigate which provides the best insulation against sound.		**Working scientifically:** Investigating the idea that light appears to travel in straight lines to explain how it works. Investigate the relationship between light sources, objects and shadows by using shadow puppets.
Forces	In EYFS children will explore pushing and pulling and how they can move things around the environment. This continues as they go through KS1. They will learn how to: Explore and talk about different forces they can feel.			1. Prior knowledge and cultural capital 2. Compare how things move on different surfaces 3. Notice that some forces need contact between two objects, but magnetic forces can act at a distance 4. Observe how magnets attract or repel each other and attract some materials and not others 5. Compare and group together everyday materials on whether they are attracted to a magnet 6. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing. **Working scientifically:** Sorting materials into		1. Prior knowledge and cultural capital- Galileo Galilei and Isaac Newton helped to develop the theory of gravitation. 2. Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object 3. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces 4. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. **Working scientifically:** Designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. Explore resistance in water by making and testing boats of different	

				those that are magnetic and those that are not; looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another; identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.		shapes.	