



# Federation of St. Cuthbert's and St. Sebastian's Catholic Primary Schools

## SCIENCE : CURRICULUM : LONG TERM PLAN



	AUTUMN TERM	SPRING TERM	SUMMER TERM
Y1	<p><b><u>Animals including Humans</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body such as head, shoulders, knees, toes, eyes, ears, mouth, nose, back, chest.</li> <li>Name which part of the body is associated with each sense such as using your nose for smelling, using your ears for hearing, using your eyes for looking, using your hands for touching and using your mouth for tasting.</li> </ul> <p><b><u>Animals including Humans</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>Identify &amp; name a variety of common animals that are carnivores, herbivores &amp; omnivores.</li> </ul>	<p><b><u>Everyday materials</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to identify and name a range of different everyday materials such as wood, plastic, metal, glass, brick, rock, paper and cardboard.</li> <li>Be able to identify what different items are made from.</li> <li>To learn various named properties to describe materials such as hard, soft, stretchy, stiff, shiny, dull, ruff, smooth, bendy, not bendy, waterproof, not waterproof, absorbent, not absorbent, opaque and transparent.</li> </ul> <p><b><u>Plants</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to recognise and describe how to plant a bean.</li> <li>Be able to recognise and identify common wild plants such as dandelions, daisies, buttercups, nettles, clover and ivy.</li> <li>Be able to recognise and identify common garden plants such as pansies, lavender, sweet peas, roses, sunflowers and irises.</li> <li>Be able to recognise and identify different types of trees such as Oak, Pine, Silver birch and Sycamore.</li> <li>To recognise and understand that plants need air, water, soil and light to help them to grow well.</li> </ul>	<p><b><u>Seasonal Change</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to identify what the four seasons are such as spring, summer, autumn and winter.</li> <li>Be able to recognise the different types of weather such as raining, sunny, cold, freezing, thunderstorm, frosty, windy, cloudy and cool.</li> <li>Be able to identify and recognise signs of summer such as summer flowers growing, e.g. sunflowers, lavender and daisies. Being able to have a barbeque, picnic, paddling pool and being able to cut the grass. Knowing that various fruit grows in the summer such as strawberries and berries.</li> <li>To be able to recognise and identify how to keep safe in the sun such as wearing a high factor sun cream, wearing a hat to protect the head, wearing sunglasses to protect eyes.</li> </ul>

		<ul style="list-style-type: none"> <li>To be able to identify and recognise parts of a plant and tree such as branches, leaves, stem, petal, roots and seeds.</li> </ul>	
Y2	<p><b><u>Uses of Everyday Materials</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Find out how the shapes of objects made from various materials can be changed by squashing, bending, twisting and stretching.</li> <li>Identify and compare the suitability of different materials such as wood, metal, plastic, glass, brick, rock, paper and cardboard.</li> <li>To identify which type of solid materials can be changed when they are squashed, bent, twisted and stretched.</li> </ul> <p><b><u>Living Things and Their Habitats</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to identify and classify things that are living, dead and never been alive.</li> <li>Be able to identify and name a variety of plants and animals in their habitats.</li> <li>Be able to place animals into their correct groups and describe why they are suitable or not suitable.</li> </ul>	<p><b><u>Animals Including Humans</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Recognise animals, including humans have off spring which grow into adults.</li> <li>Describe the basic needs of animals, including humans.</li> <li>Know how much food should be eat, looking at healthy and unhealthy foods.</li> <li>Be able to understand the importance of keeping our bodies clean, know how important it is to exercise and understand that the heartrate increases through physical activity.</li> </ul> <p><b><u>Uses of Everyday Materials</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to discover what different types of materials can be squashed, bent, twisted and stretched and describe how a solid object can be changed.</li> <li>Be able to understand and investigate the effect of what it looks like to squash a solid object.</li> </ul>	<p><b><u>Plants</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to describe and observe how bulbs grow.</li> <li>Know and describe what a plant needs to stay healthy such as having enough water, daylight and a suitable temperature.</li> <li>To compare how different plants grow.</li> <li>To investigate what plants we eat such as celery, broccoli, artichokes, asparagus, celery and leeks.</li> </ul>
Y3	<p><b><u>'Earth Rocks'</u></b></p> <p><i>Rocks, Soils &amp; Fossils</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Know and be able to identify the names of the different kinds of rocks and talk about their properties such as Igneous, Sedimentar and Metamorphic,</li> <li>Investigate different types of soils.</li> <li>Describe how fossils are made.</li> <li>Distinguish the patters, similarities and differences with different fossils.&amp;</li> </ul>	<p><b><u>'Mirror, mirror'</u></b></p> <p><i>Light and Shadows</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to recognise that light is reflected from surfaces.</li> <li>Be able to recognise that we need light in order to see things.</li> <li>Be able to recognise and understand that light from the sun can be very dangerous.</li> <li>Be able to recognise that shadows are made when the light from the light source is blocked, this being caused from a solid object.</li> </ul>	<p><b><u>'Opposites Attract'</u></b></p> <p><i>Forces &amp; Magnets</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to name some materials that magnets attract such as iron and steel.</li> <li>Be able to name some materials that magnets can not attract such as glass, paper, plastic and wood.</li> <li>Be able to explain that a magnet pole is the end of the magnet.</li> <li>Be able to compare how things move on different surfaces.</li> </ul>

	<p><b><u>'Food and our bodies'</u></b> <i>Animals Including Humans</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>To know that animals and humans need the right amount of nutrition and they can not make their own food.</li> <li>To know what drinks are healthy and unhealthy such as milk, water, coca – cola.</li> <li>To know that animals and humans have skeletons to support movement.</li> <li>To be able to identify different muscles and where they are located in the human body.</li> </ul>	<p><b><u>'How does your garden grow?'</u></b> <i>Plants</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to identify and describe different functions of a plant.</li> <li>Be able to recognise and describe what a plant needs to grow such as soil, water, air and light.</li> <li>Be able to recognise what parts of a flower affect the pollination such as the female and male parts.</li> </ul>	<ul style="list-style-type: none"> <li>Be able to describe the Earth's magnetic field and what it does to magnets.</li> </ul>
Y4	<p><b><u>'What's that sound?'</u></b> <i>Sound</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>To distinguish how different sounds are made.</li> <li>Be able explore why sounds get fainter from a distance.</li> <li>Be able to recognise vibrations from sounds travelling through a medium to the ear.</li> <li>Be able to know which materials can best reduce the sounds that we hear.</li> </ul> <p><b><u>'Living Things'</u></b> <i>Living Things &amp; Their Habitats</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to learn how to group in different ways and categorise a variety of different living things through a classification key, answering different questions.</li> <li>Be able to identify different types of vertebrates and invertebrates such as mammals, birds, reptiles, amphibians, fish, worms, slugs, octopuses.</li> <li>Be able to recognise the difference between a flowering and non-flowering plant.</li> </ul>	<p><b><u>'Looking at States'</u></b> <i>States of Matter</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to identify and sort various solids, liquids and gases.</li> <li>To know that particles are organized tightly together in a solid, looser in a liquid and further apart in a gas.</li> <li>To explore how various materials change state, including water.</li> <li>To observe and investigate how water evaporates.</li> <li>To be able to identify the different stages of a water cycle which are evaporation, convection, precipitation and collection.</li> <li>To understand that liquid water evaporates into water vapor, condenses to form clouds and precipitates back to earth in the form of rain and snow.</li> </ul> <p><b><u>'Teeth and Eating'</u></b> <i>Animals Including Humans</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>To be able to name the different types of teeth such as incisors, molars, canines and wisdom teeth.</li> </ul>	<p><b><u>'Power it up!'</u></b> <i>Electricity</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>Be able to identify common appliances that run on electricity such as a refrigerator, dishwasher, toaster, microwave, shower, tumble dryer and washing machine.</li> <li>To understand the importance of working safely with electricity such as turning off switches and ensuring they are out of the socket.</li> <li>To understand that switches are used to turn electric circuits on and off and to switch electric circuits.</li> <li>To recognise common conductors such as copper, iron, gold, aluminum and silver.</li> </ul>

		<ul style="list-style-type: none"> <li>• To know that incisors are the 4 front teeth on the top and the 4 front teeth and the bottom.</li> <li>• To know that canines are the sharpest teeth and are there for ripping and tearing food apart.</li> <li>• To know that molars are used for chewing and grinding food.</li> <li>• To know that wisdom teeth are used to grind food for proper digestion. These types of foods are raw plants, tough nuts and tough meats.</li> </ul>	
Y5	<p><b><u>'Out of this World'</u></b> <i>Earth &amp; Space</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>• Know the planet names and how they form the solar system such as Earth, Venus, Mars, Jupiter, Uranus, Saturn, Neptune, Saturn, and Mercury.</li> <li>• Find out about the Earth's orbit around the sun.</li> <li>• Distinguish the difference between day and night by watching the movement of the sun.</li> </ul> <p><b><u>'Material World'</u></b> <i>Properties &amp; Changes of Materials</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>• Be able to compare and place materials into different categories based on what properties they have.</li> <li>• Be able to understand what materials are used to make different objects.</li> <li>• Be able to distinguish what materials may dissolve in a liquid.</li> <li>• Be able to describe what reversed/recovered means and explain how a solution becomes them.</li> <li>• Be able to separate solids, liquids and gases by filtering, sieving and evaporating.</li> <li>• Be able to ask a range of different scientific questions based on the knowledge of the different types of materials.</li> </ul>	<p><b><u>'Circle of Life'</u></b> <i>Living Things &amp; Their Habitats</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>• Children can describe how a plant is pollinated. To describe how the different plants create new plants.</li> <li>• To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</li> <li>• Use test results to make predictions.</li> <li>• To research and describe the process of a life cycle.</li> <li>• To describe the life cycle of a butterfly.</li> <li>• To use their own research to describe the life cycle of a frog and can talk about key similarities and differences between the life cycle of a frog and another animal.</li> <li>• To talk about why different animals might become extinct.</li> </ul> <p><b><u>'Let's get Moving'</u></b> <i>Forces</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>• Children will say that object fall to the ground because of the force of gravity.</li> <li>• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</li> </ul>	<p><b><u>'Growing Up and Growing Old'</u></b> <i>Animals Including Humans</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>• Be able to describe the changes that occur as humans develop such as going through puberty.</li> <li>• Be able to collect data on the average height when growing up.</li> <li>• Be able to identify some of the problems that the elderly community might face such as losing people close to them, watching family members grow up, health problems, feeling lonely and missing work and socialising.</li> </ul>

		<ul style="list-style-type: none"> <li>• Children describe how air resistance slows a parachute down.</li> <li>• Children can say that friction is a force between two objects.</li> <li>• Children know that water resistance is a force that can slow objects down.</li> <li>• Children will be able to carry out a fair test including repeat readings, then use their data to draw conclusions and can say why they can trust their results (e.g. use of repeat readings).</li> <li>• Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> <li>• Children design a machine applying their knowledge of different mechanisms.</li> </ul>	
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Y6	<p><b><u>'Classifying Living Things'</u></b> <i>Living things and their habitats</i></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>• Be able to create classification keys and can say how they sorted items.</li> <li>• Use identifiable features to create classification keys. They also use keys if they do not know the name of the plant or invertebrate.</li> <li>• Be able to describe how living things can be organised and suggest why this is useful.</li> <li>• Know living things are grouped into kingdoms and that bacteria are not animals or plants and belong to different kingdom.</li> <li>• Know that fungi is one of the Kingdoms used for classifying living things.</li> </ul>	<p><b><u>Evolution &amp; Inheritance</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>• Know that life has evolved over millions of years and that different forms of life appeared at different times in the Earth's history.</li> <li>• Know that Mary Anning provided evidence through her collection of fossils of what some living things looked like millions of years ago.</li> <li>• Recognise that humans and other living things produce offspring of the same kind. They can describe how in humans the children are not identical to their parents but have some traits.</li> <li>• Identify different ways that their animal or plant has adapted to survive in its habitat.</li> <li>• Explain the definition of evolution.</li> <li>• Know the important discoveries Charles Darwin observed and theories he devised.</li> </ul>	<p><b><u>Electricity</u></b></p> <p><b><u>CORE KNOWLEDGE</u></b></p> <ul style="list-style-type: none"> <li>• Be able to use circuit symbols to draw a circuit.</li> <li>• Be able to read and make circuit diagram and can explain why they do and do not work.</li> <li>• Know that changing the wire in a circuit can affect the brightness of a bulb or loudness of a sound.</li> <li>• Be able to apply their knowledge of circuits including circuit diagrams to make their game and can use standard symbols to draw their circuit.</li> <li>• To research and share an understanding of renewable energy resources.</li> </ul>

**'Healthy Bodies'**

*Animals, including humans*

**CORE KNOWLEDGE**

- To name parts of the circulatory system and describe the function of the heart.
- To know that their heart rate increases with exercise.
- To collect valid data, can say why they trust their data and use it to support their ideas about.
- To know that there are drugs and medicines.
- To know that drugs and medicines affect how the body works.
- To know how smoking and alcohol affect the body.

**Light**

**CORE KNOWLEDGE**

- Know a that light travels in straight lines and when blocked a shadow is made
- Know that the shape of shadows is the same as the objects that made them.
- Be able to describe how light travels and use this knowledge to explain what happens when light is reflected in the periscope.
- Will be able to draw a correct diagram and explain what happens when light is reflected from objects into our eyes.