



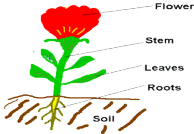



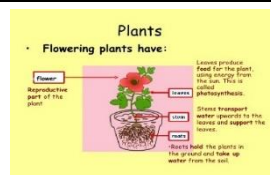
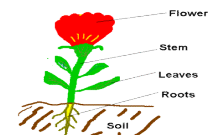



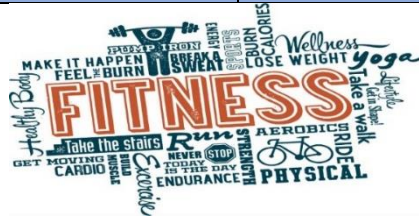

Curriculum Overview: Science

Science at Corpus Christi Catholic Primary


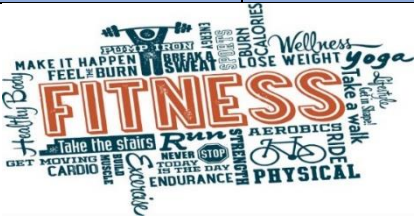

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception						
	<p>Who can help me?</p> <p>All about me / People who help us.</p> <p>Planting seeds</p> <p>Autumn</p> <p>Coverage in year group</p>	<p>What festivals are important to me?</p> <p>Festivals/ Celebrations</p> <p>Diwali Dancing</p>	<p>Who lives behind this door?</p> <p>Alive and Kicking/ Den Man (Inspiration day)</p>	<p>Who lives in my imagination?</p> <p>Science week: 9th March</p>	<p>Who lives in my garden?</p> <p>Mini-beasts</p> <p>Meet a creature.</p>	<p>Where will I travel to?</p> <p>Transport/Journeys</p>

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1						
	<p>Animals, including humans</p> <ul style="list-style-type: none"> * Identify and compare common animals including humans *Identify and name basic body parts *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 * identify, name, draw and label the basic parts of the body and say which part of the body is associated with each sense. 		<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 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 different sources of food. 	<p>Everyday materials</p> <ul style="list-style-type: none"> * Distinguish between materials and objects * Id and name common materials * Describe simple properties of material *Compare and classify materials *find out how the shapes of objects can be changed by squashing, bending etc. 	<p>Plants</p> <ul style="list-style-type: none"> *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. 	<p>Plants (YEAR 3 LINKED)</p> <ul style="list-style-type: none"> *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.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2						
	<p>Animals, including humans</p> <ul style="list-style-type: none"> *notice that animals, including humans, have offspring which grow into adults *find out about and describe the basic needs of animals, inc 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. 		<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 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 different sources of food. 	<p>Uses of every day materials</p> <ul style="list-style-type: none"> *identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard *compare how things move on different surfaces. 	<p>Plants</p> <ul style="list-style-type: none"> *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. 	<p>Plants (YEAR 3 LINKED)</p> <ul style="list-style-type: none"> *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.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	<p style="text-align: center;">Chemical Changes</p> <ul style="list-style-type: none"> A change in which one or more substances are converted into different substances is called a Chemical Change Signs of a Chemical Change: <ul style="list-style-type: none"> Color Change Gas is Released Temperature Change Precipitate – Solid falls out of solution Substance Disappears 					
	<p style="text-align: center;">Chemistry <u>Chemical Changes</u></p> <ul style="list-style-type: none"> Know why not all flames are orange and the colour of the flame is affected by the chemicals which are burning. <ul style="list-style-type: none"> Name some chemical changes. Use simple scientific equipment for electrolysis (ammeters, batteries and electrodes) <ul style="list-style-type: none"> Describe electroplating with copper. Choose appropriate numbers for measurements and observations. <ul style="list-style-type: none"> Recognise a chemical reaction. Link uses of materials to their characteristics or properties. <ul style="list-style-type: none"> Name a range of chemical reactions. Learn that chemical reactions are either reversible or irreversible <ul style="list-style-type: none"> Know that chemical reactions occur at a range of different speeds. Give examples of some of the factors that affect the rates of a reaction e.g. temperature, movement, catalysts. <p style="text-align: center;">Data Gathering and Analysis Graphing and tabulating data</p>		<p style="text-align: center;">Biology <u>Human Health and Fitness</u></p> <ul style="list-style-type: none"> Develop the skill of evaluating a scientific investigation. Make predictions about which types of exercise will cause the biggest change in breathing rate. Learn that we breathe in order to get oxygen into our bodies and remove carbon dioxide. Learn that different forms of exercise cause breathing rate to change. Develop the skill of recording and analysing scientific investigation. <ul style="list-style-type: none"> Be able to make predictions about which types of exercise will cause the biggest change in heart rate. Learn that our heart beats faster when our muscles work harder to deliver more oxygen to them. <ul style="list-style-type: none"> Know that the heart is a 'pump' and pumps blood around the body. Learn that different forms of exercise cause heart rate to change. Know muscles are the parts of the body that permit us to move. <ul style="list-style-type: none"> Learn that muscles work by relaxing and contracting. <ul style="list-style-type: none"> Know how muscles can be trained to make them stronger and larger e.g. for sports. Know that animals with skeletons have muscles attached to the bones. Develop the skill of evaluating experiments in order to improve experimental design. Ensure results are 'reliable' by checking data from other identical experiments. Be able to explain why some data is VALID and why other data is not 		<p style="text-align: center;">Physics <u>Energy and Sound</u></p> <ul style="list-style-type: none"> Develop the skill of being able to ask a question that can be tested. Develop the skill of being able to determine Independent and Dependent variables. Develop the skill of being able to ask a question that can be tested. Learn that Energy is a 'complex' word and there are lots of different types of energy. <ul style="list-style-type: none"> Learn that 'Energy makes things happen'. Be able to describe in simple terms the different types of energy around them. <ul style="list-style-type: none"> Develop the skill of stating and justifying a prediction. Practise the skill of writing a method for a scientific experiment. Learn the term 'thermal' energy and how to apply it to everyday situations and objects. Understand that materials have different thermal properties. <ul style="list-style-type: none"> Develop the skill of stating and justifying a prediction. Practise the skill of writing a method for a scientific experiment. <ul style="list-style-type: none"> Discuss heat loss by evaporation. Observe demonstrations for conduction and convection. Apply their knowledge and understanding of heat transfer to warm clothing by creating a design for an item of outdoor clothing. State a range of independent and dependent variables are for an investigation with some confidence. <ul style="list-style-type: none"> Identify areas for development in their test procedure. Be able to carry out a simple scientific experiment safely and reliably. 	

		<ul style="list-style-type: none"> • Some organisms have endoskeletons and others have exoskeletons. • Know that the bones of the body are all different in size and shape. • Know that some vitamins and minerals are beneficial to strong bones. <ul style="list-style-type: none"> • Know that skeletons provide support and protection. • Know that drugs are chemicals that change the way in which the body normally functions. <ul style="list-style-type: none"> • Understand that some drugs are beneficial but only when given by an adult. <ul style="list-style-type: none"> • Gather evidence to prove/disprove a prediction <ul style="list-style-type: none"> • Recognise warning labels on some products. • Know how to make informed choices about drugs. • Learn to appreciate how tricky it often is to obtain 'accurate' data. • Develop the skill of thinking of scientific questions to test. • Recognise that humans and other animals require food and water to stay alive. • Understand that eating the correct types and amounts of food help humans to stay healthy. <ul style="list-style-type: none"> • Identify parts of the digestive system. 	<ul style="list-style-type: none"> • Begin to use scientific vocabulary with more confidence to describe and explain what they have seen. • Identify areas for development in their test procedure. <ul style="list-style-type: none"> • Learn that light is a form of energy. • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Know that sounds are all produced by vibrations of objects and or particles. • Explain how the pitch of a sound depends on the frequency of vibration. <ul style="list-style-type: none"> • Describe sounds using the terms loudness and pitch • Start to be able to sketch out a complete 'plan' for an investigation. • Develop the skill of building complicated scientific equipment that requires patience and fine motor skills. • Produce diagrams showing how the rubber bands store and transfer energy. <ul style="list-style-type: none"> • Recall/learn that elastic bands can store energy. • Construct a car that uses elastic bands as an energy source. • Learn that it is often very difficult to conduct some science experiments with any degree of real precision or accuracy! • State clearly all of the independent variables that need to be controlled in an experiment. <ul style="list-style-type: none"> • Learn that Kinetic energy is 'movement energy'. • Link the operation of a vacuum bazooka to kinetic energy and the idea of air particles transferring energy. • Learn that it is often very difficult to conduct some science experiments with any degree of real precision or accuracy! • State clearly all of the independent variables that need to be controlled in an experiment. <ul style="list-style-type: none"> • Develop the skill of deciding which range of independent variables to test in an investigation. • Learn how to construct and manipulate a simple electrical circuit. <ul style="list-style-type: none"> • Learn that Kinetic energy is 'movement energy'.
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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4	<p style="text-align: center;">Chemical Changes</p> <ul style="list-style-type: none"> A change in which one or more substances are converted into different substances is called a Chemical Change Signs of a Chemical Change: <ul style="list-style-type: none"> Color Change Gas is Released Temperature Change Precipitate – Solid falls out of solution Substance Disappears 					
	<p style="text-align: center;">Chemistry <u>Chemical Changes</u> See Year 3 plus-</p> <ul style="list-style-type: none"> Identify common chemical changes in everyday life. Know that hydrogels are classed as smart materials because they change shape when there is a change in their environment – this determines their ability to absorb. Develop the skill of using simple scientific equipment (ammeters, batteries and electrodes). <ul style="list-style-type: none"> Collect data choosing appropriate numbers for measurements and observations Be able to analyse a chemical reaction and describe changes in state and where each product ends up. Give examples of slow, medium and fast reactions e.g. – rusting, growth of organisms, fermentation, and explosions. <p style="text-align: center;"><u>Data Gathering and Analysis</u> Graphing and tabulating data</p>		<p style="text-align: center;">Biology <u>Human Health and Fitness</u> See Year Three plus -</p> <ul style="list-style-type: none"> Develop the skill of identifying problems within an experiment and suggest ways of improving it. Understand that the lungs expand when you breathe in and contract when you exhale. Develop the skill of plotting and presenting data graphically. <ul style="list-style-type: none"> Know parts of the circulatory system, and the role blood cells play. Realise that there are often ‘patterns’ in science and these are important for making scientific predictions to test. <ul style="list-style-type: none"> Learn that muscles give you the shape that you have. Explain why comparing their data with some experiments is ‘not reliable’ if the experiments are not identical. <ul style="list-style-type: none"> Suggest ways in which to improve an investigation. Use data recorded to prove /disprove a prediction and explain why. Develop the skill of comparing group data for analysis. Design a simple experiment to test that will generate meaningful data. Understand the functions of parts of the digestive system. 		<p style="text-align: center;">Physics <u>Energy and Sound</u> See Year Three plus -</p> <ul style="list-style-type: none"> Develop the skill of being able to conduct an investigation. Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Devise a physical model for testing ideas about elephants cooling. <ul style="list-style-type: none"> Explain simply the chemical process taking place. Recognise that objects that are non-luminous are ‘reflectors’ and these can be categorised as very good to very poor. Be able to list a variety of objects that ‘emit’ light these are ‘luminous’. Explore ideas and raise different kinds of questions; select and plan the most appropriate type of scientific enquiry to use to answer scientific questions. <ul style="list-style-type: none"> Recognise that louder sounds carry more energy. Explore ideas and raise different kinds of questions. Be able to explain simple multi-stage energy transfers observed. Explain the use and importance of a ‘control’ in an experiment. <ul style="list-style-type: none"> Draw a graph of the results from their investigation. Apply energy transfers to real-life situations such as cycle helmets. Develop the skill of recording a whole planning section for an investigation. <ul style="list-style-type: none"> Consider strategies to improve the reliability of results. Apply energy transfers to real-life situations such as cycle helmets. 	

		<ul style="list-style-type: none">• Understand the effects of some legal and illegal drugs.• Learning how to examine an experimental methodology to state where it impacts on the validity of data.• Make a detailed diagram with labels for each part of the digestive system.• Describe what happens to food as it travels through the body.<ul style="list-style-type: none">• Know that enzymes aid in the breakdown of food.	<ul style="list-style-type: none">• Discuss ways to improve the reliability of test data.• Use the terms <i>elastic potential</i> and <i>kinetic</i> in explanations.• Explain the links between mass, speed and kinetic energy.• Find out how a small toy 'spud gun' works and draw a simple diagram to illustrate the principle used.• Explain the use and importance of a 'control' in an experiment.<ul style="list-style-type: none">• Make suggestions to control the risks identified.• State some factors that affect kinetic energy.• Consider the impact on the environment of waste products.• Describe two alternative energy sources for transport.
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