



**ST CHARLES' CATHOLIC PRIMARY  
SCHOOL**



**DT PROGRESSION OF SKILLS,  
KNOWLEDGE AND VOCABULARY**

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
<b>DESIGN</b>	<b>STRUCTURES</b>						
		<p>Learning the importance of a clear design criteria</p> <p>Including individual preferences and requirements in a design</p>	<p>Generating and communicating ideas using sketching and modelling</p> <p>Learning about different types of structures, found in the natural world and in everyday objects</p>	<p>Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect</p> <p>Building frame structures designed to support weight</p>		<p>Designing a stable structure that is able to support weight</p> <p>Creating frame structure with focus on triangulation</p>	
	<b>MECHANISMS / MECHANICAL SYSTEMS</b>						
			<p>Creating a class design criteria for a moving monster</p> <p>Designing a moving monster for a specific audience in accordance with a design criteria</p>	<p>Designing a shape that reduces air resistance</p> <p>Drawing a net to create a structure from</p> <p>Choosing shapes that increase or decrease speed as a result of air resistance</p> <p>Personalising a design</p>		<p>Designing a pop-up book which uses a mixture of structures and mechanisms</p> <p>Naming each mechanism, input and output accurately</p> <p>Storyboarding ideas for a book</p>	
	<b>ELECTRICAL SYSTEMS (KS2 ONLY)</b>						
					Designing a torch, giving consideration to the target audience and		Designing a steady hand game - identifying and

					creating both design and success criteria focusing on features of individual design ideas		<p>naming the components required</p> <p>Drawing a design from three different perspectives</p> <p>Generating ideas through sketching and discussion</p> <p>Modelling ideas through prototypes</p> <p>Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'</p>
	COOKING AND NUTRITION						
		Designing smoothie carton packaging by-hand or on ICT software	Designing a healthy wrap based on a food combination which work well together	Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish		<p>Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients</p> <p>Writing an amended method for a recipe to incorporate the relevant changes to ingredients</p> <p>Designing appealing packaging to reflect a recipe</p>	<p>Writing a recipe, explaining the key steps, method and ingredients</p> <p>Including facts and drawings from research undertaken</p>
TEXTILES							

		Using a template to create a design for a puppet			Writing design criteria for a product, articulating decisions made  Designing a personalised Book sleeve		Designing a stuffed toy considering the main component shapes required and creating an appropriate template  Considering the proportions of individual components
	<b>DIGITAL WORLD (KS2 ONLY)</b>						
					Problem solving by suggesting potential features on a Micro: bit and justifying my ideas  Developing design ideas for a technology pouch  Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge		
	<b>EYFS</b>	<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>	<b>YEAR 6</b>
<b>MAKE</b>	<b>STRUCTURES</b>						
	Explore, use and refine a variety of artistic effects to express their ideas and feelings.  Return to and build on their previous learning, refining ideas and developing their ability to	Making stable structures from card, tape and glue  Following instructions to cut and assemble the supporting structure of a windmill  Making functioning	Making a structure according to design criteria  Creating joints and structures from paper/card and tape	Creating a range of different shaped frame structures  Making a variety of free standing frame structures of different shapes and sizes  Selecting		Making a range of different shaped beam bridges Using triangles to create truss bridges that span a given distance and supports a load  Building a wooden bridge structure	

	<p>represent them.</p> <p>Progress towards a more fluent style of moving, with developing control and grace.</p> <p>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</p> <p>Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.</p> <p>Create collaboratively, sharing ideas, resources and skills.</p> <p><b><u>ELG</u></b></p> <p>Use a range of small tools, including scissors, paintbrushes and cutlery.</p>	turbines and axles which are assembled into a main supporting structure		<p>appropriate materials to build a strong structure and for the cladding</p> <p>Reinforcing corners to strengthen a structure</p> <p>Creating a design in accordance with a plan</p> <p>Learning to create different textural effects with materials</p>		<p>Independently measuring and marking wood accurately</p> <p>Selecting appropriate tools and equipment for particular tasks</p> <p>Using the correct techniques to saws safely</p> <p>Identifying where a structure needs reinforcement and using card corners for support</p> <p>Explaining why selecting appropriating materials is an important part of the design process</p> <p>Understanding basic wood</p>	
	<b>MECHANISMS / MECHANICAL SYSTEMS</b>						
			<p>Making linkages using card for levers and split pins for pivots</p> <p>Experimenting with linkages adjusting the</p>	<p>Measuring, marking, cutting and assembling with increasing accuracy</p>		<p>Following a design brief to make a pop-up book, neatly and with focus on accuracy</p>	

			widths, lengths and thicknesses of card used  Cutting and assembling components neatly	Making a model based on a chosen design		Making mechanisms and/or structures using sliders, pivots and folds to produce movement  Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result	
	<b>ELECTIRICAL SYSTEMS (KS2 ONLY)</b>						
					Making a torch with a working electrical circuit and switch  Using appropriate equipment to cut and attach materials  Assembling a torch according to the design and success criteria		Constructing a stable base for a game  Accurately cutting, folding and assembling a net  Decorating the base of the game to a high quality finish  Making and testing a circuit Incorporating a circuit into a base
	<b>COOKING AND NUTRITION</b>						
		Chopping fruit and vegetables safely to make a smoothie  Identifying if a food is a fruit or a vegetable  Learning where and how fruits and vegetables grow	Slicing food safely using the bridge or claw grip  Constructing a wrap that meets a design brief	Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination  Following the instructions within a recipe		Cutting and preparing vegetables safely  Using equipment safely, including knives, hot pans and hobs  Knowing how to avoid cross-contamination  Following a step by step method	Following a recipe, including using the correct quantities of each ingredient  Adapting a recipe based on research  Working to a given timescale  Working safely and hygienically with independence

						carefully to make a recipe	
	<b>TEXTILES</b>						
		<p>Cutting fabric neatly with scissors</p> <p>Using joining methods to decorate a puppet</p> <p>Sequencing steps for construction</p>			<p>Making and testing a paper template with accuracy and in keeping with the design criteria</p> <p>Measuring, marking and cutting fabric using a paper template</p> <p>Selecting a stitch style to join fabric, working neatly sewing small neat stitches</p> <p>Incorporating fastening to a design</p>		<p>Creating a 3D stuffed toy from a 2D design</p> <p>Measuring, marking and cutting fabric accurately and independently</p> <p>Creating strong and secure blanket stitches when joining fabric</p> <p>Using applique to attach pieces of fabric decoration</p>
	<b>DIGITAL WORLD (KS2 ONLY)</b>						
					<p>Using a template when cutting and assembling the pouch</p> <p>Following a list of design requirements</p> <p>Selecting and using the appropriate tools and equipment for cutting, joining, shaping and decorating a foam pouch</p> <p>Applying functional features such as using foam to create soft buttons</p>		

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
<b>EVALUATE</b>	<b>STRUCTURES</b>						
	<b>ELG</b> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.	Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't  Suggest points for improvements	Exploring the features of structures  Comparing the stability of different shapes  Testing the strength of own structures  Identifying the weakest part of a structure  Evaluating the strength, stiffness and stability of own structure	Evaluating structures made by the class  Describing what characteristics of a design and construction made it the most effective  Considering effective and ineffective designs		Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary  Suggesting points for improvements for own bridges and those designed by others	
	<b>MECHANISMS / MECHANICAL SYSTEMS</b>						
			Evaluating own designs against design criteria  Using peer feedback to modify a final design	Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance		Evaluating the work of others and receiving feedback on own work  Suggesting points for improvement	
	<b>ELECTIRICAL SYSTEMS (KS2 ONLY)</b>						
					Evaluating electrical products  Testing and evaluating the success of a final product and taking inspiration from the work of peers		Testing own and others finished games, identifying what went well and making suggestions for improvement  Gathering images and information about existing children's toys

							Analysing a selection of existing children's toys
	<b>COOKING AND NUTRITION</b>						
		<p>Tasting and evaluating different food combinations</p> <p>Describing appearance, smell and taste</p> <p>Suggesting information to be included on packaging</p>	<p>Describing the taste, texture and smell of fruit and vegetables</p> <p>Taste testing food combinations and final products</p> <p>Describing the information that should be included on a label</p> <p>Evaluating which grip was most effective</p>	<p>Establishing and using design criteria to help test and review dishes</p> <p>Describing the benefits of seasonal fruits and vegetables and the impact on the environment</p> <p>Suggesting points for improvement when making a seasonal tart</p>		<p>Identifying the nutritional differences between different products and recipes</p> <p>Identifying and describing healthy benefits of food groups</p>	<p>Evaluating a recipe, considering: taste, smell, texture and origin of the food group</p> <p>Taste testing and scoring final products</p> <p>Suggesting and writing up points of improvements in productions</p> <p>Evaluating health and safety in production to minimise cross</p>
	<b>TEXTILES</b>						
		<p>Reflecting on a finished product, explaining likes and dislikes</p>			<p>Testing and evaluating an end product against the original design criteria</p> <p>Deciding how many of the criteria should be met for the product to be considered successful</p> <p>Suggesting modifications for improvement</p>		<p>Testing and evaluating an end product and giving point for further improvements</p>
	<b>DIGITAL WORLD (KS2 ONLY)</b>						
					<p>Analysing and evaluating an existing product</p>		



					Identifying the key features of a pouch		
	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
TECHNICAL KNOWLEDGE	STRUCTURES						
		<p>Describing the purpose of structures, including windmills</p> <p>Learning how to turn 2D nets into 3D structures</p> <p>Learning that the shape of materials can be changed to improve the strength and stiffness of structures</p> <p>Understanding that cylinders are a strong type of structure that are often used for windmills and lighthouses</p> <p>Understanding that windmill turbines use wind to turn and make the machines inside work</p> <p>Understanding that axles are used in structures and mechanisms to make parts turn in a circle</p>	<p>Identifying natural and man-made structures</p> <p>Identifying when a structure is more or less stable than another</p> <p>Knowing that shapes and structures with wide, flat bases or legs are the most stable</p> <p>Understanding that the shape of a structure affects its strength</p> <p>Using the vocabulary: strength, stiffness and stability</p> <p>Knowing that materials can be manipulated to improve strength and stiffness</p> <p>Building a strong and stiff structure by folding paper</p>	<p>To understand what a frame structure is</p> <p>To know that a 'free-standing' structure is one which can stand on its own</p> <p>To know that a pavilions ia a decorative building or structure for leisure activities</p> <p>To know that cladding can be applied to structures for different effects.</p> <p>To know that aesthetics are how a product looks</p> <p>To know that a product's function means its purpose</p> <p>To understand that the target audience means the person or group of people a product is designed for</p> <p>To know that architects consider</p>		<p>Exploring how to create a strong beam</p> <p>Identifying arch and beam bridges and understanding the terms: compression and tension</p> <p>Identifying stronger and weaker structures</p> <p>Finding different ways to reinforce structures</p> <p>Understanding how triangles can be used to reinforce bridges</p> <p>Articulating the difference between beam, arch, truss and suspension bridges</p>	

		Developing awareness of different structures for different purposes		light, shadow and patterns when designing			
	<b>MECHANISMS / MECHANICAL SYSTEMS</b>						
			<p>To know that mechanisms are a collection of moving parts that work together as a machine to produce movement</p> <p>To know that there is always an input and output in a mechanism</p> <p>To know that an input is the energy that is used to start something working</p> <p>To know that an output is the movement that happens as a result of the input</p> <p>To know that a lever is something that turns on a pivot</p> <p>To know that a linkage mechanism is made up of a series of levers</p>	<p>To understand that all moving things have kinetic energy</p> <p>To understand that kinetic energy is the energy that something (object/person) has by being in motion</p> <p>To know that air resistance is the level of drag on an object as it is forced through the air</p> <p>To understand that the shape of a moving object will affect how it moves due to air resistance.</p> <p>To understand that products change and evolve over time</p> <p>To know that aesthetics means how an object or product looks in design and technology</p>		<p>Knowing that an input is the motion used to start a mechanism</p> <p>Knowing that output is the motion that happens as a result of starting the input</p> <p>Knowing that mechanisms control movement</p> <p>Describing mechanisms that can be used to change one kind of motion into another</p>	

			<p>To know some real-life objects that contain mechanisms</p>	<p>To know that a template is a stencil you can use to help you draw the same shape accurately</p> <p>To know that a birds-eye view means a view from a high angle (as if a bird in flight)</p> <p>To know that graphics are images which are designed to explain or advertise something</p> <p>To know that it is important to assess and evaluate design ideas and models against a list of design criteria.</p>			
	<b>ELECTRICAL SYSTEMS (KS2 ONLY)</b>						
					<p>Learning how electrical items work</p> <p>Identifying electrical products</p> <p>Learning what electrical conductors and insulators are</p> <p>Understanding that a battery contains stored electricity and can be used to power products</p>		<p>Learning that batteries contain acid, which can be dangerous if they leak</p> <p>Identifying and naming the circuit components in a steady hand game</p>

					Identifying the features of a torch		
					Understanding how a torch works		
					Articulating the positives and negatives about different torches		
	COOKING AND NUTRITION						
		Understanding the difference between fruits and vegetables  Describing and grouping fruits by texture and taste	Understanding what makes a balanced diet  Knowing where to find the nutritional information on packaging  Knowing the five food groups	To know that not all fruits and vegetables can be grown in the UK  To know that climate affects food growth  To know that vegetables and fruit grow in certain seasons  To know that cooking instructions are known as a 'recipe'  To know that imported food is food which has been brought into the country  To know that exported food is food which has been sent to another country.		Understanding where food comes from - learning that beef is from cattle and how beef is reared and processed  Understanding what constitutes a balanced diet  Learning to adapt a recipe to make it healthier Comparing two adapted recipes using a nutritional calculator and then identifying the healthier option	Learning how to research a recipe by ingredient  Recording the relevant ingredients and equipment needed for a recipe  Understanding the combinations of food that will complement one another  Understanding where food comes from, describing the process of 'Farm to Fork' for a given ingredient

				<p>To understand that imported foods travel from far away and this can negatively impact the environment</p> <p>To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre</p> <p>To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health</p> <p>To know safety rules for using, storing and cleaning a knife safely</p> <p>To know that similar coloured fruits and vegetables often have similar nutritional benefits</p>			
	<b>TEXTILES</b>						
					<p>Testing and evaluating an end product against the original design criteria</p> <p>Deciding how many of the criteria should be met for the</p>		<p>Testing and evaluating an end product and giving point for further improvements</p>

					product to be considered successful		
					Suggesting modifications for improvement		
	<b>DIGITAL WORLD (KS2 ONLY)</b>						
					<p>To understand that in programming a 'loop' is code that repeats something again and again until stopped</p> <p>To know that a Micro:bit is a pocket-sized, codeable computer</p> <p>Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm</p> <p>To know what the 'Digital Revolution' is and features of some of the products that have evolved as a result</p> <p>To know that in Design and technology the term 'smart' means a programmed product</p> <p>To know the difference between</p>		

					<div>analogue and digital technologies</div> <div>•</div> <div>To understand what is meant by 'point of sale display'</div> <div>To know that CAD stands for Computer-aided design</div>		
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