



## Design and Technology at Marazion School

*“A design isn’t finished until someone is using it.” Brenda Laurel*



### Our Vision Statement:

Design and technology at Marazion inspires children to use their imagination and creativity, solve real problems through study of their material environment and the application of multidisciplinary skills. Through the cyclical process of planning, design and evaluation, children develop a critical understanding set against a backdrop of cultural and historical contexts and people’s needs and wants. Children are encouraged to become autonomous and reflective risk – takers, testing their ideas and applying skills from maths, science, art and information technology to create high quality prototypes. Children develop skills and knowledge that allow them to not only participate confidently in everyday tasks, but in an increasingly technological world. In keeping with our school ethos, our children evaluate the impact of design on the environment and learn how quality design impacts on the health and future - proofing of the planet.

### **Marazion School Concepts and Skills Progression**

Design and Technology skills will be taught when possible in units to provide meaningful contexts and real-world application.

<b>EYFS Curriculum Content</b>	<p>The EYFS framework is structured differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. This section identifies how the skills taught in EYFS feed into national curriculum subjects.</p> <p>Children will be taught to:</p> <ul style="list-style-type: none"><li>• Use a range of small tools, including scissors, paint brushes and cutlery</li><li>• Safely use and explore a variety of materials, tools and techniques,</li></ul>
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		<ul style="list-style-type: none"> <li>• experimenting with colour, design, texture, form, and function;</li> <li>• Share their creations, explaining the process they have used;</li> <li>• Make use of props and materials when role playing characters in narratives and stories.</li> </ul>
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<b>KS1 Curriculum Content</b>		Pupils should be taught to: <ul style="list-style-type: none"> <li>• the knowledge, understanding and skills needed to engage in an iterative process of designing and making</li> <li>• work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].</li> <li>• design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>• generate, develop, model and communicate their ideas through</li> <li>• select from and use a range of tools and equipment to perform practical tasks</li> <li>• select from and use a wide range of materials and components,</li> <li>• explore and evaluate a range of existing products and their own ideas</li> <li>• build structures</li> <li>• explore and use mechanisms</li> <li>• use the basic principles of a healthy and varied diet to prepare dishes</li> <li>• understand where food comes from</li> </ul>				
		<ul style="list-style-type: none"> <li>• Design</li> </ul> <p>Design and make purposeful, functional and appealing products.</p>	<ul style="list-style-type: none"> <li>• Make</li> </ul> <p>Use given tools for a variety of tasks e.g. scissors, needles, pins, templates, glue, tape.</p> <p>Select and name the tools needed to</p>	<ul style="list-style-type: none"> <li>• Evaluate</li> </ul> <p>Explore and evaluate existing products.</p> <p>Say what they like and do not like about products they have made.</p>	<ul style="list-style-type: none"> <li>• Technical Knowledge</li> </ul> <p>Build structures and investigate how they can be made stronger, stiffer and more stable.</p> <p>Insert paper fasteners for card linkages.</p>	<ul style="list-style-type: none"> <li>• Cooking and Nutrition</li> </ul> <p>Use given tools for a variety of tasks e.g. Knife, grater, peelers, chopping board, scissors,</p>

		<p>Use pictures and words to convey what they want to design and make.</p> <p>Use drawings with notes to record ideas as they are developed.</p> <p>Describe and explain what they are making, how it works and what they need to do next.</p>	<p>work the materials. E.g. needles, yarn, scissors, saws, drills.</p> <p>Join appropriately for different materials and situations.</p> <p>Explore ideas by rearranging materials e.g. paper, card, fabrics, sequins, buttons, tubes, dowel, cotton reels, paper, card, mouldable materials.</p> <p>Select materials from a limited range to meet design criteria.</p>	<p>Consider and explain how the finished product could be improved.</p> <p>Talk about their developing designs and identify good points and areas to improve throughout the design process.</p> <p>Evaluate their product and its appearance against a design criteria.</p>	<p>Use a range of materials to create models with wheels, axels or hinges.</p> <p>Investigate temporary, fixed and moving joining's.</p>	<p>Prepare a simple dish safely and hygienically</p> <p>Recognise that food comes from plants and animals</p> <p>Name and sort food into the five groups in the <i>Eatwell Guide</i>.</p> <p>Recognise that everyone should eat at least five portions of fruit and vegetables every day.</p>
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<b>KS2 Curriculum Content</b>		<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• the knowledge, understanding and skills needed to engage in an iterative process of designing and making</li> <li>• work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment</li> <li>• use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</li> </ul>
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		<ul style="list-style-type: none"> <li>• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> <li>• select from and use a wider range of tools and equipment to perform practical tasks</li> <li>• select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> <li>• investigate and analyse a range of existing products</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>• understand how key events and individuals in design and technology have helped shape the world Technical knowledge</li> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>• understand and use mechanical systems in their products</li> <li>• understand and use electrical systems in their products</li> <li>• apply their understanding of computing to program, monitor and control their products.</li> <li>• understand and apply the principles of a healthy and varied diet</li> <li>• prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>• understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>				
<b>Year 3/4 Skills Progression</b>		<ul style="list-style-type: none"> <li>• Design</li> </ul> <p>Use research and develop design criteria to design functional and appealing products that are fit for purpose.</p> <p>Record plan by drawing labelled</p>	<ul style="list-style-type: none"> <li>• Make</li> </ul> <p>Think ahead about the order of their work and plan tools and materials needed. E.g. glue gun, ruler.</p> <p>Consider working characteristics of materials.</p>	<ul style="list-style-type: none"> <li>• Evaluate</li> </ul> <p>Investigate and analyse a range of existing products.</p> <p>Use investigations of existing products to inform planning of their own product.</p>	<ul style="list-style-type: none"> <li>• Technical Knowledge</li> </ul> <p>Create shell or frame structures and make structures more stable.</p> <p>Join and combine materials with temporary, fixed or moving joining.</p>	<ul style="list-style-type: none"> <li>• Cooking and Nutrition</li> </ul> <p>Think ahead about the order of their work and plan tools and materials needed. E.g. Weighing scales, mixing spoons, measuring jug</p>

		<p>sketches or writing and discuss this while working.</p> <p>Consider different ways in which they can creatively record their planning to engage an audience.</p>	<p>Join and combine a range of materials, some with temporary, fixed or moving joints.</p>	<p>Identify strengths and areas to improve in their own design.</p> <p>Check their work as it develops and modify approach in light of progress.</p> <p>Discuss how well their product meets the design criteria and the needs of the user.</p>	<p>Incorporate a circuit with a bulb or buzzer into a model.</p> <p>Strengthen frames with diagonal struts.</p> <p>Use lolly sticks/card to make levers and linkages.</p>	<p>Use tools and equipment, including those needed to weigh and measure ingredients, with accuracy.</p> <p>Apply the principles of a healthy and varied diet.</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p> <p>Begin to talk about seasonality, knowing where a and how a variety of ingredients are grown, reared, caught and processed.</p>
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<b>Year 5/6 Skills Progression</b>		<ul style="list-style-type: none"> <li>• Design</li> </ul>	<ul style="list-style-type: none"> <li>• Make</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate</li> </ul>	<ul style="list-style-type: none"> <li>• Technical Knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Cooking and Nutrition</li> </ul>
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		<p>Use research and develop design criteria to design innovative, functional and appealing products that are fit for purpose and aimed at particular groups or individuals</p> <p>Develop and communicate design ideas using annotated sketches, detailed plans, oral and digital presentations and computer based tools.</p>	<p>Select and use tools and equipment for a range of uses. E.g. join fabrics, cut accurately and safely, use bradawl to mark holes, hand drill and pin and tacks during textile work.</p> <p>Select from and use a wider range of materials, components and ingredients taking into account their aesthetic properties.</p> <p>Join and combine a range of materials and ingredients using appropriate methods. E.g. drilling, glueing, sewing, screwing.</p>	<p>Show a clear understanding of the specification and use this to inform decisions.</p> <p>Justify decisions about materials and methods of construction.</p> <p>Test, evaluate and refine ideas and products against a specification.</p> <p>Evaluate products and use of information sources throughout the process and use this to inform planning.</p>	<p>Build complex frameworks using a range of materials e.g. wood, corrugated card, plastic to support mechanisms.</p> <p>Use linkages to make movement larger or more varied.</p> <p>Incorporate motor and a switch into a model.</p> <p>Use a CAM to make an up and down mechanism.</p> <p>Control a model using an ICT control programme.</p>	<p>Think ahead about the order of their work and plan tools and materials needed. E.g. Weighing scales, mixing spoons, measuring jug</p> <p>Use tools and equipment, including those needed to weigh and measure ingredients, with accuracy.</p> <p>Join and combine a range of ingredients using appropriate methods. E.g. beating, rubbing in,</p> <p>Apply the principles of a healthy and varied diet.</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p>
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						Discuss seasonality, knowing where and how a variety of ingredients are grown, reared, caught and processed.
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