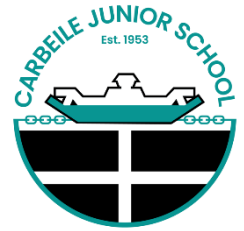




# Carbeile Design and Technology Skills

## Progression



<p>Developing, planning and communicating ideas</p>	<p style="text-align: center;"><b><u>Year 3 &amp; 4</u></b></p> <ul style="list-style-type: none"> <li>• With growing confidence generate ideas for an item, considering its purpose and the user/s.</li> <li>• Start to order the main stages of making a product.               <ul style="list-style-type: none"> <li>• Identify a purpose and establish criteria for a successful product.</li> <li>• Understand how well products have been designed, made, what materials have been used and the construction technique.</li> </ul> </li> <li>• Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.               <ul style="list-style-type: none"> <li>• Start to understand whether products can be recycled or reused.</li> </ul> </li> <li>• Know to make drawings with labels when designing.</li> <li>• When planning explain their choice of materials and components including function and aesthetics.</li> <li>• Put together a step-by-step plan which shows the order and also what equipment and tools they need.</li> </ul>	<p style="text-align: center;"><b><u>Year 5 &amp; 6</u></b></p> <ul style="list-style-type: none"> <li>• Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD.               <ul style="list-style-type: none"> <li>• Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</li> </ul> </li> <li>• With growing confidence apply a range of finishing techniques, including those from art and design               <ul style="list-style-type: none"> <li>• Draw up a specification for their design- link with Mathematics and Science.</li> </ul> </li> <li>• Use results of investigations, information sources, including ICT when developing design ideas.</li> <li>• With growing confidence select appropriate materials, tools and techniques.               <ul style="list-style-type: none"> <li>• Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.                   <ul style="list-style-type: none"> <li>• Produce a range of ideas after collecting information.</li> <li>• Produce a detailed step-by step plan.</li> <li>• Suggest some alternative plans and say what the good points and drawbacks are about each</li> <li>• Explain how their product will appeal to the audience and work within a monetary budget.</li> </ul> </li> </ul> </li> </ul>
<p>Working with tools, equipment, materials and components to make quality products</p>	<p style="text-align: center;"><b><u>Year 3 &amp; 4</u></b></p> <ul style="list-style-type: none"> <li>• Select a wider range of tools and techniques for making their product i.e. construction materials and kits,</li> </ul>	<p style="text-align: center;"><b><u>Year 5 &amp; 6</u></b></p> <p>Select a wider range of tools and techniques for making their product safely.</p>

	<p>textiles, food ingredients, mechanical components and electrical components.</p> <ul style="list-style-type: none"> <li>• Explain their choice of tools and equipment in relation to the skills and techniques they will be using. <ul style="list-style-type: none"> <li>• Start to understand that mechanical and electrical systems have an input, process and output.</li> <li>• Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement.</li> </ul> </li> <li>• Know how simple electrical circuits and components can be used to create functional products. <ul style="list-style-type: none"> <li>• Measure, mark out, cut, score and assemble components with more accuracy.</li> <li>• Start to work safely and accurately with a range of simple tools.</li> <li>• Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work.</li> <li>• Start to measure, tape or pin, cut and join fabric with some accuracy.</li> <li>• Use equipment safely.</li> <li>• Attempt to make sure that their product looks attractive.</li> <li>• Make choices of material both for its appearance and qualities.</li> <li>• Select the most appropriate tools and techniques to use for a given task.</li> <li>• Make a product which uses both electrical and mechanical components.</li> <li>• Work accurately to make cuts and holes - e.g. to measure and then use equipment to cut. <ul style="list-style-type: none"> <li>• Try alternative ways of fixing something if the first attempt is not successful .</li> </ul> </li> <li>• Join fabrics using a running stitch</li> <li>• Create and use simple gears, pulleys, cams, levers and linkages. <ul style="list-style-type: none"> <li>• Build models incorporating circuits with buzzers and bulbs.</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.</li> <li>• Start to join and combine materials and components accurately in temporary and permanent ways. <ul style="list-style-type: none"> <li>• Know how mechanical systems such as cams or pulleys or gears create movement.</li> <li>• Understand how more complex electrical circuits and components can be used to create functional products.</li> </ul> </li> <li>• Continue to learn how to program a computer to monitor changes in the environment and control their products. <ul style="list-style-type: none"> <li>• Understand how to reinforce and strengthen a 3D framework.</li> </ul> </li> <li>• Now sew using a range of different stitches, to weave and knit.</li> <li>• Demonstrate how to measure, tape or pin, cut and join fabric with some accuracy.</li> <li>• Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment.</li> <li>• Measure carefully and show initiative to check so as not to make mistakes. <ul style="list-style-type: none"> <li>• Persevere with their product even though their original idea might not have worked.</li> </ul> </li> <li>• Use pulleys, levers and linkages in their product. <ul style="list-style-type: none"> <li>• Build a model which incorporates a motor.</li> </ul> </li> <li>• Use a glue gun with close supervision. (one to one)</li> <li>• Create a more complex pop up. (e.g. card)</li> <li>• Use a simple pattern to create a textile item.</li> </ul>
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<p>Evaluating processes and products</p>	<p style="text-align: center;"><b><u>Year 3 &amp; 4</u></b></p> <ul style="list-style-type: none"> <li>• Start to evaluate a product against the original design criteria e.g. how well it meets its intended purpose.</li> <li>• Suggest some improvements and say what was good and not so good about their original design.</li> <li>• Begin to disassemble and evaluate familiar products and consider the views of others to improve them.</li> <li>• Begin to evaluate how the key designs of individuals in design and technology have helped shape the world.</li> </ul>	<p style="text-align: center;"><b><u>Year 5 &amp; 6</u></b></p> <ul style="list-style-type: none"> <li>• Start to evaluate a product against the original design specification and by carrying out tests.</li> <li>• Evaluate their work both during and at the end of the assignment. <ul style="list-style-type: none"> <li>• Begin to seek evaluation from others.</li> </ul> </li> <li>• Evaluate how the key designs of individuals in design and technology have helped shape the world. <ul style="list-style-type: none"> <li>• Evaluate appearance and function against original criteria.</li> </ul> </li> </ul>
<p>Food and Nutrition</p>	<p style="text-align: center;"><b><u>Year 3 &amp; 4</u></b></p> <ul style="list-style-type: none"> <li>• Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. <ul style="list-style-type: none"> <li>• Understand how to prepare and cook a variety of dishes including experience of using a heat source.</li> <li>• Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>• Know how a healthy diet is made up from a variety and balance of different food and drink.</li> <li>• Begin to know that to be active and healthy, food and drink are needed to provide energy for the body. (and begin to distinguish healthy high energy foods)</li> <li>• Be able to identify foods which come from the UK and other countries in the world.</li> </ul> </li> </ul>	<p style="text-align: center;"><b><u>Year 5 &amp; 6</u></b></p> <p>Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</p> <ul style="list-style-type: none"> <li>• Begin to understand that seasons may affect the food available.</li> <li>• Understand how food is processed into ingredients that can be eaten or used in cooking.</li> <li>• Know how to prepare and cook a variety of predominantly savoury dishes including the use of a heat source.</li> <li>• Demonstrate increasing confidence in how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>• Evaluate a meal and consider if they contribute towards a balanced diet.</li> <li>• Begin to understand that different food and drink contain different substances (nutrients, water and fibre) that are needed for health.</li> <li>• Explain what times of year particular foods are eaten in. <ul style="list-style-type: none"> <li>• Describe what to do to be hygienic and safe.</li> </ul> </li> <li>• Use appropriate tools and equipment, weighing and measuring with scales.</li> </ul>