

## Design Technology Milestones

		Milestone 1	Milestone 2	Milestone 3
<p><b>To master practical skills</b></p> <p>This concept involves developing the skills needed to make high quality products</p>	<b>Mechanics</b>	Create products using levers, sliders, wheels and axles	Create products using a range of links and leverages mechanisms	Convert rotary motion to linear using cams  Use innovative combinations of electronics (or computing) and mechanics in product designs
	<b>Construction</b>	Use materials to practice drilling, screwing, gluing and nailing materials to make and strengthen products	Choose suitable techniques to construct products or to repair items  Strengthen materials using suitable techniques	Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding)
	<b>Materials</b>	<p>Cut materials safely using tools provided</p> <p>Measure and mark out to the nearest centimetre</p> <p>Demonstrate a range of cutting and shaping techniques (Eg tearing, cutting, folding, curling)</p> <p>Demonstrate a range of joining techniques (Eg gluing, using hinges or combining materials to strengthen)</p>	<p>Cut materials accurately and safely by selecting appropriate tools</p> <p>Measure and mark out to the nearest millimetre</p> <p>Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (Eg slots, cut-outs)</p> <p>Select appropriate joining techniques</p>	<p>Cut materials with precision and refine the finish with appropriate tools (Eg sanding wood after cutting)</p> <p>Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (Eg fabric needing sharper scissors than needed for paper)</p>
	<b>Electricals and Electronics</b>		Create series and parallel circuits	Create circuits using electronics kits that employ a number of components (eg. LEDs, resistors, transistors and chips)
	<b>Computing</b>		Control and monitor models using software designed for this purpose	Write code to control and monitor models or products
	<b>Food</b>	<p>Cut, peel, or grate ingredients safely and hygienically</p> <p>Measure or weigh using measuring cups or electronic scales</p> <p>Assemble or cook ingredients</p>	<p>Prepare ingredients hygienically using appropriate utensils</p> <p>Measure ingredients to the nearest gram</p> <p>Follow a recipe</p> <p>Assemble or cook ingredients (controlling the temperature of the oven or hob if cooking)</p>	<p>Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms)</p> <p>Measure accurately and calculate ratios of ingredients to scale up or down from a recipe</p>

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<p><b>To design, make, evaluate and improve</b></p> <p>This concept involves developing the process of design thinking and seeing design as a process.</p>	<p>Design products that have a clear purpose and an intended user</p> <p>Make products, refining the design as work progresses</p> <p>Use software to design</p>	<p>Design with purpose by identifying opportunities to design</p> <p>Make products by working efficiently (such as carefully selecting materials)</p> <p>Refine work and techniques as work progresses, continually evaluating the product design.</p>	<p>Design with the user in mind, motivated by the service a product will offer (rather than simply the profit)</p> <p>Make products through stages of prototypes, making continual refinements</p> <p>Ensure products have a high-quality finish, using art skills where appropriate</p> <p>Use prototypes, cross-sectional diagrams and computer-aided designs to represent designs</p>
<p><b>To take inspiration from design throughout history</b></p> <p>This concept involves appreciating the design process that has influenced the products we use in everyday life.</p>	<p>Explore objects and designs to identify likes and dislikes of the designs</p> <p>Suggest improvements to existing designs</p> <p>Explore how products have been created</p>	<p>Identify some of the great designers in your area of study to generate ideas for designs</p> <p>Improve upon existing designs, giving reasons for choices</p> <p>Disassembly products to understand how they work</p>	<p>Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices</p> <p>Create innovating designs that improve upon existing products</p> <p>Evaluate the design of products so as to suggest improvements to the user experience</p>