

DT Framework - Milestone 3

Intent		
<ul style="list-style-type: none"> • Significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes. • An excellent attitude to learning, resilience and independent working. • The ability to use time efficiently and work constructively and productively with others. • The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs. • The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely. • A thorough knowledge of which tools, equipment and materials to use to make their products. • The ability to apply art, mathematical, science and computing knowledge as well as other skills gained across the curriculum. • The ability to manage risks exceptionally well to manufacture products safely and hygienically. • A passion for the subject and knowledge of, up-to-date technological innovations in materials, products and systems. 		
Threshold Concepts	Skills	
Master practical skills This concept involves developing the skills needed to make high quality products (we have highlighted a range of skills but they may be added to or changed	Food	<ul style="list-style-type: none"> • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.
	Materials	<ul style="list-style-type: none"> • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).

		<ul style="list-style-type: none"> • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).
	Textiles	<ul style="list-style-type: none"> • Create objects (such as a cushion) that employ a seam allowance. • Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).
	Electricals and electronics	<ul style="list-style-type: none"> • Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).
	Computing	<ul style="list-style-type: none"> • Write code to control and monitor models or products.
	Construction	<ul style="list-style-type: none"> • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding).
	Mechanics	<ul style="list-style-type: none"> • Convert rotary motion to linear using cams. • Use innovative combinations of electronics (or computing) and mechanics in product designs.
<p>Design, make, evaluate and improve This concept involves developing the process of design thinking and seeing design as a process.</p>		<ul style="list-style-type: none"> • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
<p>Take inspiration from design throughout history</p>		<ul style="list-style-type: none"> • Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.

This concept involves appreciating the design process that has influenced the products we use in everyday life.

- Create innovative designs that improve upon existing products.
- Evaluate the design of products so as to suggest improvements to the user experience.