



Highfields Primary Academy Progression Document for Design Technology

MILESTONE 1		MILESTONE 2	MILESTONE 3
Master Practical Techniques			
Materials	Cut materials safely using tools provided. Measure and mark out to the nearest cm. Demonstrate a range of cutting and shaping techniques (such as gluing, using hinges or combining materials to strengthen).	Cut materials accurately and safely by selecting appropriate tools. Measure and mark out to the nearest mm. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). Select appropriate joining techniques.	Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or using a more precise scissor cut after roughly cutting out a shape). Show an understanding of the qualities of materials in order to choose appropriate tools to cut and shape (e.g. the nature of fabric may require sharper scissors than would be used to cut paper).
Structures	Practise 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).
Mechanisms	Create products using levers, wheels and winding mechanisms.	Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as linked levers or pneumatics).	Convert rotary motion to linear using cams. Use innovative combinations of electronics (or computing) and mechanisms in products designs.
Food and Nutrition	Cut, peel and grate ingredients safely and hygienically. Measure or weigh using measuring cups or electronic scales.	Prepare ingredients hygienically using appropriate utensils. Measure ingredients accurately to the nearest gram. Follow a recipe.	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.

	Assemble and cook ingredients.	Assemble and cook ingredients (controlling the temperature of the hob if cooking).	Demonstrate a range of baking and cooking techniques. Create and refine recipes, including ingredients, methods, cooking times and temperatures.
Electrics and Computing		Create products with series and parallel circuits. Control and monitor models using apps designed for this purpose.	Create products using electronics kits that employ a number of components (such as LEDs or resistors). Write a code to control and monitor models or products.
Take Inspiration from Design			
Explore objects and designs to identify likes and dislikes. Suggest improvements to existing designs. Explore how products have been created.	Identify some of the great designs in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. Improve upon existing designs, giving reasons for choices. Disassemble products to understand how they work.	Combine elements of designs from a range of inspirational designers throughout history, giving reasons for choices. Create innovative designs that improve upon existing products. Evaluate the design of products so as to suggest improvements to the user experience.	
Design, Make, Evaluate and Improve			
Design products that have a clear purpose and an intended user. Make products, refining the design as work progresses. Use software to design.	Design with purpose by identifying opportunities to designs. Make products by working efficiently (such as by carefully selecting materials). Refine work and techniques as work progresses, continually evaluating the product design. Use apps to design and represent product designs.	Design with the user in mind, motivated by the service of 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.
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