

Meldreth Primary Progression in Design Technology

Design Technology Skills Progression & Prior Learning

EYFS (Development Matters): Explore, use and refine a variety of artistic effects to express their ideas and feelings. ♣ return to and build on their previous learning, refining ideas and developing their ability to represent them. ♣ create collaboratively, sharing ideas, resources and skills.

KS1 (National Curriculum): Pupils should be taught to: design purposeful, functional, appealing products for themselves and other users based on design criteria ♣ generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology ♣ select from and use a range of tools and equipment to perform practical tasks ♣ select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics ♣ explore and evaluate a range of existing products ♣ evaluate their ideas and products against design criteria ♣ build structures, exploring how they can be made stronger, stiffer and more stable ♣ explore and use mechanisms, in their products.

KS2 (National Curriculum): Pupils should be taught to: 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 ♣ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design ♣ select from and use a wider range of tools and equipment to perform practical tasks ♣ 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 ♣ investigate and analyse a range of existing products ♣ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ♣ understand how key events and individuals in design and technology have helped shape the world ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ♣ understand and use mechanical systems in their products ♣ understand and use electrical systems in their products ♣ apply their understanding of computing to program, monitor and control their products.

EYFS	Year 1 and Year 2	Year 3 and Year 4	Year 5 and Year 6
Materials			
Children will use natural materials to create pictures/objects (mud pictures/leaf hats/instruments) Children will know which glue or tape to use for their chosen purpose.	Cut materials safely using tools provided. Measure and mark out to the nearest centimetre. Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). Demonstrate a range of joining 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 millimetre. 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			
Children will know how to make treasury tag join. They will know how to make the flange join to join. Children will know how to make an I-brace join.	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			
Children will know how to make a slot join. Children will know how to make a tab join. Children will know how to make a split pin join. Children will know how to sew to join.	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 mechanics in product designs.
Food and nutrition			
Cut, peel and grate ingredients safely and hygienically.	Measure or weigh using measuring cups or electronic scales. Assemble and cook ingredients	Prepare ingredients hygienically using appropriate utensils. Measure ingredients accurately to the nearest gram. Follow a recipe. Assemble and cook ingredients (controlling the temperature of the hob, if cooking).	Understand the importance of correct storage and handling of ingredients (using knowledge of microorganisms). 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.
Electronics			
		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 and resistors). Write code to control and monitor models or products.
Take inspiration from design			
Children will safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	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 designers 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 design 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			
Share their creations, explaining the process they have used. Make use of props and materials when role playing characters in narratives and stories.	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 design. 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 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.
Deeper Thinking EYFS/KS1: <ul style="list-style-type: none"> • What could you do to make your design better? • Find one thing that is better about someone else's design. • How would you help someone who wanted to make their own...? • What is the best/worst thing about your design? 		Greater Depth at KS2: <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 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. 	