

Design and Technology
St Thomas and St Anne's CE Primary
School



Long Term Rolling Programme

2024 – 2025

2025 - 2026

Our curriculum is designed to equip all children with the knowledge, including skills, that will enable them to be successful and creative in their future lives. Our curriculum is underpinned by the basic principles that:

1. Learning is change to long-term memory
2. Our aim is to ensure that our pupils experience a wide breadth of study and that they have a long-term memory of an ambitious body of procedural and semantic knowledge.

Our curriculum has been developed using the Chris Quigley 'Essentials Curriculum'.

Our Long, medium- and short-term planning are supported by the resource 'Project on a Page' which is structured to address the six D&T principles – user, purpose, functionality, design decisions, innovation and authenticity.

When planning, each topic should be completed within 8-12 hours for most projects with one project being completed termly. There is flexibility in how and when our projects are completed to enable our pupils to fully develop the knowledge needed to be able to meet and explore the six principles of DT. Each term, pupils will complete a project focused on one of the threshold concepts and across the year they will experience projects which have met all three of the threshold concepts. By revisiting the threshold concepts, pupils will be able to develop both the practical skills and the knowledge needed to complete a range of projects.

Our rolling programme has been adopted to cater for our mixed age class structure and provide our pupils with a spiral curriculum which enables them to revisit the 'Threshold Concepts' within history. This will be reviewed regularly depending on the overall school structure as our class groups often change from year to year.

Decisions regarding which projects the children will complete have been based on outcomes of a curriculum review and to support what we feel is the Capital Culture of DT for our pupils.

We ensure that children are building on previously learning by referring to progression grids (see below) as well as our milestones for DT (see below).

Our threshold concepts (key areas of learning that the children revisit in each unit of work) for DT are:

Master practical skills (MPS)

This concept involves developing the skills needed to make high quality products.

Design, make, evaluate and improve (DMEI)

This concept involves developing the process of design thinking and seeing design as a process.

(TI)Take inspiration from design throughout history

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

Cycle Year	Fir Class		
1 2024 -2025	MPS How will you cut and stick	TI Investigating Products	DMEI Chairs for Three Bears

Cycle Year	Elm Class		
1 2024-2025	MPS Mechanisms Levers and sliders	TI Food	DMEI Shell structures
2 2025-2026	DMEI Textiles - stocking	TI Mechanisms Wheels and axles	MPS food

Cycle Year	Ash		
1 2024-2025	MPS Structures	TI Electrical systems	DMEI Textiles - Sewing
2 2025-2026	MPS Food	TI Mechanical systems	DMEI Electrical systems

Cycle Year	Oak		
1 2024-2025	TI Textile - Decorations	MPS Electrical systems	DMEI Food
2 2025-2026	DMEI Mechanical systems	MPS Food	TI Structures

Threshold Concept		Milestone 1	Milestone 2	Milestone 3
<p>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)</p>	Food	<ul style="list-style-type: none"> • Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients. 	<ul style="list-style-type: none"> • Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). 	<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 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, hinges or combining materials to strengthen). 	<ul style="list-style-type: none"> • 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. 	<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). • 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"> • Shape textiles using templates. • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). 	<ul style="list-style-type: none"> • Understand the need for a seam allowance. • Join textiles with appropriate stitching. • Select the most appropriate techniques to decorate 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"> • Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage). 	<ul style="list-style-type: none"> • Create series and parallel circuits 	<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"> • Model designs using software. 	<ul style="list-style-type: none"> • Control and monitor models using software designed for this purpose. 	<ul style="list-style-type: none"> • Write code to control and monitor models or products.
Construction	<ul style="list-style-type: none"> • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. 	<ul style="list-style-type: none"> • Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques. 	<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"> • Create products using levers, wheels and winding mechanisms. 	<ul style="list-style-type: none"> • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). 	<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 products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. • Use software to design. 	<ul style="list-style-type: none"> • 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 software to design and represent product designs. 	<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 This concept involves appreciating the design process that has influenced the products we use in everyday life.</p>		<ul style="list-style-type: none"> • Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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.