

# Design and Technology

St Thomas and St Anne's CE Primary School



Long Term Rolling Programme

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 met 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 Design and Technology. 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 our pupils need in DT.

We ensure that children are building on previously learning by referring to progression grids known as our Milestones for DT.

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.

**Take inspiration from design throughout history (TI)**

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

| Cycle Year | Fir Class  |  |  |
|------------|--|--|--|
| 1          | TI<br>Construction                                     | MPS<br>Food – preparing fruit and veg              | DMEI<br>Freestanding structures                    |
| 2          | MPS<br>Sliders and levers                              | TI/MPS<br>computing                                | DMEI<br>textiles – template and joining techniques |
| 3          | MPS<br>construction – templates and joining techniques | TI<br>electrical and electronics – simple circuits | DMEI<br>computing – NOT project on a page          |
| 4          | MPS<br>textiles  | TI<br>mechanics – sliders and levers               | DMEI<br>Food                                       |

| Cycle Year | Elm Class   |  |   |
|------------|---|--|---|
| 1          | DMEI<br>Textiles - stockings                                      | MPS<br>Food – preparing fruit and veg<br>Healthy diet            | TI<br>Freestanding structures             |
| 2          | MPS<br>Materials – sliders and levers<br>levers and linkages      | TI / MPS<br>Computing  | DMEI                                      |
| 3          | MPS<br>Construction – free standing structures / shell structures | TI<br>electrical and electronics<br>simple circuits and switches | DMEI<br>Computing – NOT project on a page |
| 4          | MPS<br>Textiles   | TI<br>mechanics – sliders and levers                             | DMEI<br>Food                              |

| Cycle Year | Ash  |   |  |
|------------|--|---|--|
| 1          | TI<br>Pulleys or gears   | MPS<br>Food – healthy varied diet / culture and seasonality | DMEI<br>Shell structures / frame structures                  |
| 2          | MPS<br>Materials – levers and linkages / combining different materials | TI<br>Computing – Lego Wedo                                 | DMEI<br>Textiles – 2d/3d shape to product                    |
| 3          | MPS<br>Electrical and electronics / more complex circuits and switches | TI<br>construction  | DMEI<br>Computing – Not project on a page                    |
| 4          | MPS<br>textiles  | TI<br>mechanisms – pulleys or gears                         | DMEI<br>Food - healthy varied diet / culture and seasonality |

| Cycle Year | Oak  |                                       |   |
|------------|--|---------------------------------------|---|
| 1          | TI<br>Pulleys or gears   | MPS<br>Food – culture and seasonality | DMEI<br>frame structures                      |
| 2          | MPS<br>Materials – combining different materials                       | TI<br>Computing – Lego Wedo           | DMEI<br>Textiles – combining different shapes |
| 3          | MPS<br>Electrical and electronics / more complex circuits and switches | TI<br>construction                    | DMEI<br>Computing – 3D modelling using CAD    |
| 4          | MPS<br>textiles  | TI<br>mechanisms – pulleys or gears   | DMEI<br>Food - culture and seasonality        |

| Threshold Concept  |           | Milestone 1   | Milestone 2  | Milestone 3  |
|--|-----------|---|--|--|
| <p><b>Master practical skills</b><br/>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"> <li>• Cut, peel or grate ingredients safely and hygienically.</li> <li>• Measure or weigh using measuring cups or electronic scales.</li> <li>• Assemble or cook ingredients.</li> </ul>   | <ul style="list-style-type: none"> <li>• Prepare ingredients hygienically using appropriate utensils.</li> <li>• Measure ingredients to the nearest gram accurately.</li> <li>• Follow a recipe.</li> <li>• Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).</li> </ul>  | <ul style="list-style-type: none"> <li>• Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).</li> <li>• Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.</li> <li>• Demonstrate a range of baking and cooking techniques.</li> <li>• Create and refine recipes, including ingredients, methods, cooking times and temperatures.</li> </ul> |
|  | Materials | <ul style="list-style-type: none"> <li>• Cut materials safely using tools provided.</li> <li>• Measure and mark out to the nearest centimetre.</li> <li>• Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</li> <li>• Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).</li> </ul> | <ul style="list-style-type: none"> <li>• Cut materials accurately and safely by selecting appropriate tools.</li> <li>• Measure and mark out to the nearest millimetre.</li> <li>• Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).</li> <li>• Select appropriate joining techniques.</li> </ul> | <ul style="list-style-type: none"> <li>• 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).</li> <li>• 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).</li> </ul>   |