

# DT Curriculum – 2 Year Cycle

## Years 5 & 6



### Intent

Learning is a change to long term memory. Our aims are to ensure that our students experience a wide breadth of study based on the national curriculum and have, by the end of each key stage, long-term memory of curriculum knowledge.

We aim to inspire in pupils a curiosity and fascination about D&T in order to encourage them to be creative and innovative in order to make products and solve real and relevant problems within a variety of contexts.

### Implementation

D&T is taught through the 'Threshold Concepts' of Master Practical Techniques, Take Inspiration from Design and Design, Make, Evaluate and Improve. Each threshold concept is split into knowledge categories that teachers will explore with the children. Deliberate practise of these, whereby knowledge will be revisited, will enable a gradual deepening of their understanding. We believe that learning is most effective with this spaced repetition and the interleaving between topics and frequently revisiting them, aids long term retention.

Teachers will utilise real life examples, a variety of mediums and a range of teaching styles in order to develop their understanding of D&T so that children are increasingly able to design, make, evaluate and improve their own ideas.

### Impact

Because learning is a change to long term memory it is impossible to see impact in the short term. However, we do use probabilistic assessment based on deliberate practise. This means that we look at the practices taking place to determine whether they are appropriate, related to our end of key stage goals. We use comparative judgements against Milestone statements, in the tasks we set (POP tasks) and in tracking students' work over time. We use lesson observations to see if the pedagogical style matches our depth expectations.

Impact is also measured through key questioning skills built into lessons, child-led assessment against the objective (WAGBA), and summative assessments aimed at targeting next steps in learning.

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| Year Group | Cycle    | Autumn  | Spring   | Summer   |
|------------|----------|---|--|--|
|            |          | <i>Threshold Concepts / Knowledge Categories</i>  |  |  |
| 5/6        | <b>A</b> | <p><b>Textiles: combining fabric or using CAD</b></p> <p><b>Cooking</b><br/> <i>Master practical skills<br/>           Design, make, evaluate and improve<br/>           Take inspiration from design throughout history<br/>           Technical Knowledge / Practical Knowledge / Design inspiration / Design Process</i></p>           | <p><b>Mechanical systems: pulleys or gears</b></p> <p><i>Master practical skills<br/>           Design, make, evaluate and improve<br/>           Take inspiration from design throughout history<br/>           Technical Knowledge / Practical Knowledge / Design inspiration / Design Process</i></p>             | <p><b>Structures: Frames</b></p> <p><b>Cooking</b><br/> <i>Master practical skills<br/>           Design, make, evaluate and improve<br/>           Take inspiration from design throughout history<br/>           Technical Knowledge / Practical Knowledge / Design inspiration / Design Process</i></p> |
|            | <b>B</b> | <p><b>Electrical Systems: complex switches and circuits</b></p> <p><b>Cooking</b><br/> <i>Master practical skills<br/>           Design, make, evaluate and improve<br/>           Take inspiration from design throughout history<br/>           Technical Knowledge / Practical Knowledge / Design inspiration / Design Process</i></p> | <p><b>Mechanical systems: Cams</b></p> <p><b>Moving toys</b><br/> <i>Master practical skills<br/>           Design, make, evaluate and improve<br/>           Take inspiration from design throughout history<br/>           Technical Knowledge / Practical Knowledge / Design inspiration / Design Process</i></p> | <p><b>Food: Celebrating cultures and seasons</b></p> <p><i>Master practical skills<br/>           Technical Knowledge / Practical Knowledge</i></p>  |

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### Years 5/6 Teaching Sequence for DT (Milestone 3) CYCLE A

| Weeks               | Autumn Term   | Spring Term   | Summer Term   |
|---------------------|---|---|---|
| <b>Topic Title:</b> | <b>Textiles: combining fabric or using CAD<br/>Cooking</b>  | <b>Mechanical systems: pulleys &amp; gears</b>  | <b>Food Nutrition and Cooking</b>   |
| <b>1</b>            | <i>Textiles/Technical knowledge/Practical knowledge/Design inspiration:</i> Look at a variety of different cushions both in the classroom and online, from past and present. What do you notice? How are materials joined? What decorations are used? Practise using blanket stitch to join two small pieces of material; then back stitch and running stitch. Understand need for seam allowance. (Nat Curric) | <i>Pulleys &amp; Gears/Technical knowledge/ Practical knowledge:</i> They are types of mechanisms. Gears can be used to change the speed/direction of movements; Pulley is a grooved wheel on an axle. They change the direction of a force. <b>P385-386</b><br><b>Practical practise - finger fluency:</b> make a lift using a simple pulley <b>P388</b>                                       | <i>Food/Technical knowledge:</i> Discuss need for hygiene and safety in cooking and how we can maintain this whilst cooking/preparing. Food groups and what it means to have a balanced diet<br><b>P419 &amp; 453</b>   |
| <b>2</b>            | <b>Retrieval</b>  | <b>Retrieval</b>  | <b>Retrieval</b>  |
| <b>3</b>            | <i>Design/Design process:</i> a cushion for comfort. Consider what the decoration would be and what materials would be used. Use computer to design cushion.  | <i>Practical practise/Practical knowledge - finger fluency continued:</i> make a lift using a simple pulley / make a flagpole using a simple pulley / make gears from cardboard / assemble pre-cut gears <b>P388 - 389</b>  | <i>Technical skills – practice finger fluency/ Practical knowledge:</i> Discuss how different foods are prepared and what different preparation is needed. Practise cutting / slicing / grating / chopping.   |
| <b>4</b>            | <b>Retrieval</b>  | <b>Retrieval</b>  | <b>Retrieval</b>  |
| <b>5</b>            | <i>Make cushion design/Design process:</i> Ensure cutting materials accurately, measure/mark out to the nearest mm, apply appropriate cutting/shaping/stitching/show precision. Select appropriate joining techniques. Select appropriate techniques to decorate textiles.  | <i>Design/Design inspiration:</i> Look at existing products for inspiration, eg: cable car at Sugarloaf Mountain, Brazil and designs from the past. Design an aerial tramway (cable car). Complete a product outline, include labels indicating how it will work. Apply knowledge of techniques to decide appropriate way to construct and which materials will be needed.<br><b>P393 - 395</b> | <i>Food/ Design inspiration:</i> Taste test a variety of different types of bread and evaluate them. Is there a particular element from one of these breads that they would want to include in their bread. Design their own type of bread they would want to make. |

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| 6  | Retrieval   | Retrieval  | Retrieval   |
|----|---|--|---|
| 7  | <b>Make cushion design/Design process:</b> Continue and attach designs to cushion. Evaluate and amend as necessary.   | <b>Make/Design process:</b> Make design using prior skills of cutting, shaping, joining, finishing) Evaluate and amend as necessary.   | <b>Make bread/Design process:</b> To provide the carbohydrate part of a meal. Discuss need for kneading<br><b>P431 - 437</b>  |
| 8  | Retrieval   | Retrieval  | Retrieval   |
| 9  | <b>Evaluate/Design process:</b> Are you happy with the design? What do others think of your design (peer assessment). What would you do differently next time? Photograph into books with written explanation and evaluation.                   | <b>Evaluate/Design process:</b> what works well, what could be improved. How far can it travel? Photograph into books with written explanation and evaluation.   | <b>Food – Bolognese/Technical knowledge:</b> Describe what this is and how it can be adapted to create different dishes (lasagne, oven baked etc). Consider what safety elements of cooking/storage are needed when preparing this meal. Research ingredients.<br><b>P441 - 443</b> |
| 10 | Retrieval   | Retrieval  | Retrieval   |
| 11 | <b>POP TASK</b> – What tools would you use to appropriately cut material? What safety elements do you need to be aware of and act accordingly for? What joining techniques work well with different textiles? Why do you need a seam allowance? | <b>POP TASK</b> – Draw annotated diagrams of a simple pulley and 'gearing up'. Explain how they work.  | <b>Make Bolognese/Design process:</b> Follow step by step recipe. Taste test as go through to ensure enough salt etc. Evaluate finished product. What would you do differently next time?<br><b>P446</b>  |
| 12 | <b>Cooking/Practical knowledge:</b> Christmas theme – Cheese stars<br><a href="https://www.bbcgoodfood.com/recipes/cheese-stars">https://www.bbcgoodfood.com/recipes/cheese-stars</a>   | <b>Cooking/Practical knowledge:</b> Easter theme – hot cross buns<br><a href="https://www.deliciousmagazine.co.uk/recipes/hot-cross-buns/">https://www.deliciousmagazine.co.uk/recipes/hot-cross-buns/</a> | <b>POP TASK</b> – What do you need to consider when preparing food? How does this change when including fish or meat? Describe precautions to take when using an oven or hob. Why are kitchen plasters blue? List safety and hygiene considerations for the kitchen area at school. |

CAD – links to Art:

Show precision in techniques.

Choose from a range of stitching techniques.

Combine previously learned techniques to create pieces

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### Years 5/6 Teaching Sequence for DT (Milestone 3) CYCLE B

| Weeks               | Autumn Term   | Spring Term   | Summer Term   |
|---------------------|---|---|---|
| <b>Topic Title:</b> | <b>Electrical Systems: Motors<br/>Cooking</b>   | <b>Mechanics: Cams<br/>Moving toys</b>  | <b>Food: Celebrating cultures and<br/>seasons</b>   |
| <b>1</b>            | <b>Electrical systems/ Technical knowledge/Practical knowledge:</b> How do electric motors work? They produce rotary movement. Provide examples to be discussed. Finger fluency: attach fans to motors and frame structures to make portable desk fan run on a circuit. <b>P337</b> | <b>Mechanics/Technical knowledge:</b> what is a Cam? (Linear reciprocating motion)Use diagrams to show movement begin dependent upon shape – pear, snail, eccentric. <b>P403</b><br><b>Finger fluency/Practical knowledge:</b> practise making pulleys that can be controlled by a mechanism. <b>P405</b> | <b>Food throughout the year/Technical knowledge:</b> Discuss seasonal food and how food eaten in season tastes better. How do menus change across the year? What foods are available only at certain times and which are available throughout the year. Describe a menu for a main course and a dessert for each season. Explain choices. What foods are in season throughout the year and give examples of those that are only available at some points during the year. <b>P419</b> |
| <b>2</b>            |   |   |   |
| <b>3</b>            | <b>Design/Design inspiration:</b> a motorised car. Look at current/past products. Label diagrams to show where the circuit and power source will be placed and attached. <b>P343 - 344</b>  | <b>Design/Design inspiration/Design process:</b> Look at moving toys from past/present. a moving toy to entertain a young child. Draw annotated diagram with explanation as to how it will work. <b>P409</b>  | <b>Chinese New Year/ Technical knowledge:</b> Discuss the celebration and background stories. Introduce foods eaten during this celebration. Tasting session and explain opinions for each thing tasted. <b>P421</b>  |
| <b>4</b>            |   |   |   |
| <b>5</b>            | <b>Make Car/Design process:</b> From design begin to construct motorised car. Through ongoing evaluations, amend as necessary.  | <b>Make/Design process</b> the moving toy. Evaluate throughout to ensure it works.  | <b>Ramadan/Technical knowledge:</b> Discuss the celebration and background stories. Introduce foods eaten during this celebration. Tasting session and explain opinions for each thing tasted. <b>P424</b>  |
| <b>6</b>            |   |   |   |

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|    |  |  |   |
|----|--|--|---|
| 7  | <b>Evaluate</b> <i>Design process</i> : Evaluate car through testing it. Does it work? Would you have changed anything about the design?   | <b>Continue to make</b> <i>Design process</i> moving toy. Evaluate throughout to ensure it works.  | <b>Diwali</b> <i>Technical knowledge</i> : Discuss the celebration and background stories. Introduce foods eaten during this celebration. Tasting session and explain opinions for each thing tasted. <b>P423</b>   |
| 8  |  |  |   |
| 9  | <b>Introduction to AI</b> <i>Technical knowledge</i> : What is Artificial Intelligence? Discuss personal devices and those in the home. Write up examples such as thermostat, door bell, Alexa etc. <b>P317</b>  | <b>Evaluate</b> <i>Design process</i> : toy. What works? What could have been improved. Take to Reception children to show them and let them have a go and get their opinion on design. Take photos, possibly with Reception child as well.            | <b>Hanukkah</b> <i>Technical knowledge</i> : Discuss the celebration and background stories. Introduce foods eaten during this celebration. Tasting session and explain opinions for each thing tasted. <b>P425</b>   |
| 10 |  |  |   |
| 11 | <b>POP TASK</b> – Draw annotated diagram to show the effect of attaching a motor to a fan, a pulley or a propellor. What is AI? Give some examples in life.  | <b>POP TASK</b> – What is the purpose of a Cam? Draw annotated diagrams of pear/snail/eccentric shaped. What is 'reciprocating movement'? and what does 'dwell' mean?  | <b>Christmas</b> <i>Technical knowledge</i> : Discuss the celebration and background stories. Introduce foods eaten during this celebration. Tasting session and explain opinions for each thing tasted. <b>P422</b>  |
| 12 | <b>Cooking</b> <i>Practical knowledge</i> : alternative healthy Christmas recipes for the party:<br><a href="https://www.eatsamazing.co.uk/christmas/healthy-christmas-recipes/fun-easy-rudolf-the-reindeer-tortilla-roll-ups-recipe">https://www.eatsamazing.co.uk/christmas/healthy-christmas-recipes/fun-easy-rudolf-the-reindeer-tortilla-roll-ups-recipe</a><br><a href="https://www.eatsamazing.co.uk/christmas/healthy-christmas-recipes/santa-sandwich-skewers-fun-christmas-party-food">https://www.eatsamazing.co.uk/christmas/healthy-christmas-recipes/santa-sandwich-skewers-fun-christmas-party-food</a> | <b>Cooking</b> <i>Practical knowledge</i> : an Easter dish – Roasted carrot and ginger soup<br><a href="https://www.homecookingadventure.com/roasted-carrot-and-ginger-soup/">https://www.homecookingadventure.com/roasted-carrot-and-ginger-soup/</a> | <b>POP TASK</b> – Describe tradition Christmas foods from across the World.<br>List some food traditionally eaten at an Iftar.<br>List some food eaten at Chinese New Year and explain the reasons behind the dishes.<br>Describe some dishes traditionally eaten at Diwali.<br>What is traditionally eaten at Hannukah. Describe any foods |

**\*\*Choose one celebration to cook an item or items to then taste** *Practical knowledge*