Design and Technology Long Term Plan YEAR B

D&T is woven into our LMTW curriculum topics; this ensures children understand key concepts and knowledge around the design and evaluation process and have the opportunity to apply skills to different contexts; the topics also ensure the children can see links to the real world and to other curriculum subjects. We plan for enrichment days, visits and visitors so the children see the application of the D&T process in real life contexts. To ensure full coverage and progression for each year group, we have a two year rolling programme using the D&T Association 'Projects On A Page' (POAP) and have half-termly 'technology days'. This approach helps children to retain knowledge whilst practicing and developing practical skills.

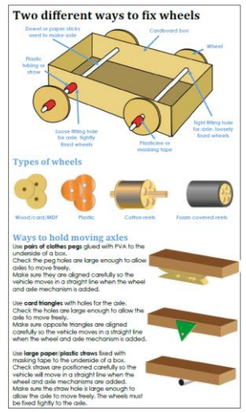
<table>
<tr><th colspan="3">Autumn Term 2024</th></tr>
<tr><th></th><th>Autumn 1</th><th>Autumn 2</th></tr>
<tr><td>Nursery</td><td>N1: Explore a range of materials and tools through continuous provision

N2: Show a preference for a dominant hand
Develop their own ideas and then decide which materials to use to express them</td><td>N1: Explore materials with different properties using all their senses to investigate them

N2: Shape and join materials; combine and mix ingredients. Explore collections of materials with similar and/ or different properties. Explore different materials freely to develop their ideas about how to use them and what to make</td></tr>
<tr><td>Puffins
R</td><td>Use a range of materials to explore and experiment with including joining with clips, pegs and glue.
• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function
• Share their creations, explaining the process they have used
• Create collaboratively, sharing ideas, resources and skills</td><td>• To be able to talk about preferences</td></tr>
<tr><td>Puffins
1</td><td colspan="2"><u>Autumn 2nd Half</u>

Aspect of D&T: Mechanisms Focus: Wheels and Axles A

Designing
• Generate initial ideas and simple design criteria through talking and using own experiences.
• Develop and communicate ideas through drawings and mock-ups.
Making
• Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.
• Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.
Evaluating
• Explore and evaluate a range of products with wheels and axles.
• Evaluate their ideas throughout and their products against original criteria.
Technical knowledge and understanding
• Explore and use wheels, axles and axle holders.
• Distinguish between fixed and freely moving axles.
• Know and use technical vocabulary relevant to the project.

 
</td></tr>
<tr><td>Choughs
2</td><td colspan="2"><u>Autumn 2nd Half</u>

Aspect of D&T: Mechanisms Focus: Wheels and Axles B

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 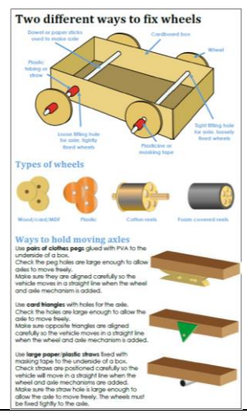
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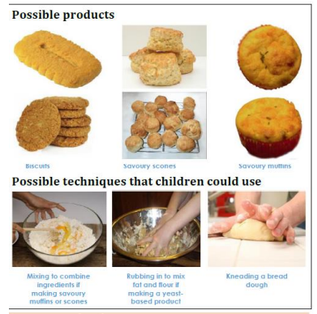
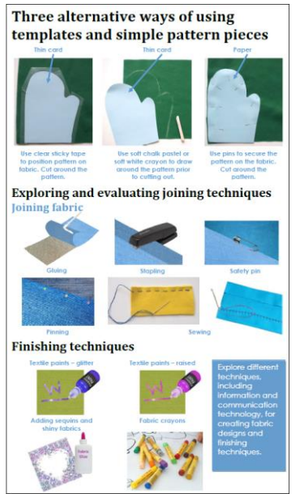
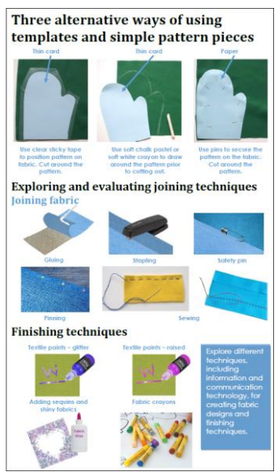
Choughs 3 Choughs 4	**Autumn 2nd Half** **Aspect of D&T:** Electrical Systems **Focus:** Simple Circuits and Switches **Designing** • Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. **Making** • Order the main stages of making. • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. **Evaluating** • Investigate and analyse a range of existing battery-powered products. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. **Technical knowledge and understanding** • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project. 
Razorbills 5 Razorbills 6	**Autumn 2nd Half** **Aspect of D&T:** Food **Focus:** Celebrating Culture and Seasonality D **Designing** • Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. • Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. • Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. **Making** • Write a step-by-step recipe, including a list of ingredients, equipment and utensils • Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. • Make, decorate and present the food product appropriately for the intended user and purpose. **Evaluating** • Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Understand how key chefs have influenced eating habits to promote varied and healthy diets. **Technical knowledge and understanding** • Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. • Know and use relevant technical and sensory vocabulary. 

Spring Term 2025			
	Spring 1		**Spring 2**
Nursery	N1: Build independently with a range of appropriate resources. Manipulate and play with different materials N2: Use a comfortable grip with good control Explore how things work. Join different materials and explore different textures		N1: Use their imagination as they consider what they can do with different materials N2: Choose the right resources to carry out their own plan Explore light sources
Puffins R	**'Come Fly with Me' - Asia** To know that Chinese dragons are an important feature of Chinese culture and make their own model using bright colours		
Puffins 1	**Spring 1st Half** **Aspect of D&T:** Textiles **Focus:** Templates and Joining Techniques A **Designing** • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. **Making** • Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. • Select from and use textiles according to their characteristics. **Evaluating** • Explore and evaluate a range of existing textile products relevant to the project being undertaken. • Evaluate their ideas throughout and their final products against original design criteria. **Technical knowledge and understanding** • Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. • Know and use technical vocabulary relevant to the project.		
Choughs 2	**Spring 1st Half** **Aspect of D&T:** Textiles **Focus:** Templates and Joining Techniques B **Designing** • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. **Making** • Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. • Select from and use textiles according to their characteristics. **Evaluating** • Explore and evaluate a range of existing textile products relevant to the project being undertaken. • Evaluate their ideas throughout and their final products against original design criteria. **Technical knowledge and understanding** • Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. • Know and use technical vocabulary relevant to the project.		

Choughs 3
Choughs 4

Spring 1st Half

Aspect of D&T: Textiles **Focus:** 2D Shape to 3D Product

Designing
• Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.
• Produce annotated sketches, prototypes, final product sketches and pattern pieces.

Making
• Plan the main stages of making.
• Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.
• Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.

Evaluating
• Investigate a range of 3-D textile products relevant to the project.
• Test their product against the original design criteria and with the intended user.
• Take into account others' views.
• Understand how a key event/individual has influenced the development of the chosen product and/or fabric.

Technical knowledge and understanding
• Know how to strengthen, stiffen and reinforce existing fabrics.
• Understand how to securely join two pieces of fabric together.
• Understand the need for patterns and seam allowances.
• Know and use technical vocabulary relevant to the project.

Razorbills 5
Razorbills 6

Spring 2nd Half

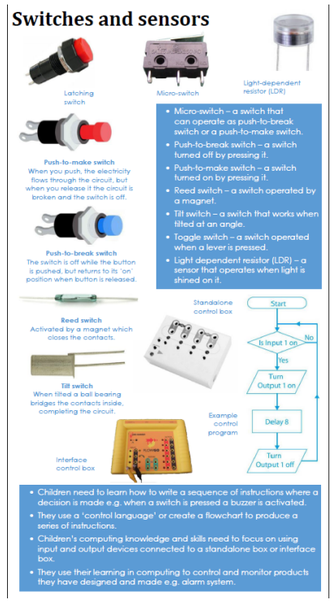
Aspect of D&T: Electrical Systems **Focus:** More Complex Circuits and Switches

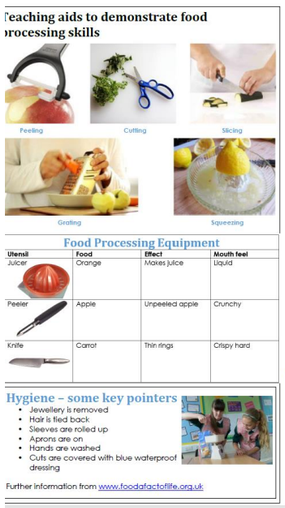
Designing
• Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost.
• Generate and develop innovative ideas and share and clarify these through discussion.
• Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.

Making
• Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.
• Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.
• Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.

Evaluating
• Continually evaluate and modify the working features of the product to match the initial design specification.
• Test the system to demonstrate its effectiveness for the intended user and purpose.
• Investigate famous inventors who developed ground-breaking electrical systems and components.

Technical knowledge and understanding
• Understand and use electrical systems in their products.
• Apply their understanding of computing to program, monitor and control their products.
• Know and use technical vocabulary relevant to the project.



Summer Term 2025			
	Summer 1		**Summer 2**
Nursery	N1: Explore being creative with a wide range of materials N2: Develop their own ideas and then decide which materials to use to express them		N1: Make simple models which express their feelings; start to develop pretend play, pretending that one object represents another. N2: Make imaginative and complex 'small worlds' with blocks and construction kits Explore different materials freely, in order to develop their ideas about how to use them and what to make
Puffins R			• To identify what someone else prefers and design specifically for them
Puffins 1	**Summer 2nd Half** **Aspect of D&T:** Food **Focus:** Preparing Fruit and Vegetables B **Designing** • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk and drawings. **Making** • Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. • Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. **Evaluating** • Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. • Evaluate ideas and finished products against design criteria, including intended user and purpose. **Technical knowledge and understanding** • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of *The Eatwell Guide*. • Know and use technical and sensory vocabulary relevant to the project.		
Choughs 2	**Summer 2nd Half** **Aspect of D&T:** Food **Focus:** Preparing Fruit and Vegetables B **Designing** • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk and drawings. **Making** • Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. • Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. **Evaluating** • Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. • Evaluate ideas and finished products against design criteria, including intended user and purpose. **Technical knowledge and understanding** • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of *The Eatwell Guide*. • Know and use technical and sensory vocabulary relevant to the project.		

Choughs 3 Choughs 4	**Summer 2nd Half** **Aspect of D&T:** Food **Focus:** Healthy and Varied Diet B **Designing** • Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. **Making** • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. **Evaluating** • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. **Technical knowledge and understanding** • Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately.
Razorbills 5 Razorbills 6	**Summer 2nd Half** **Aspect of D&T:** Mechanical Systems **Focus:** Pulleys or Gears **Designing** • Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide their thinking. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost. **Evaluating** • Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. • Investigate famous manufacturing and engineering companies relevant to the project. **Technical knowledge and understanding** • Understand that mechanical and electrical systems have an input, process and an output. • Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project.