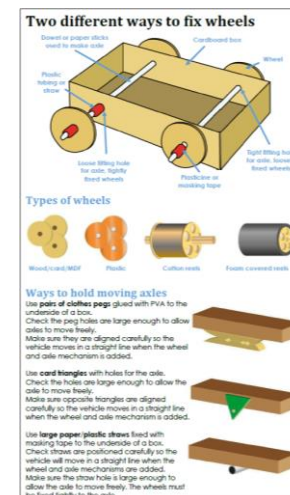
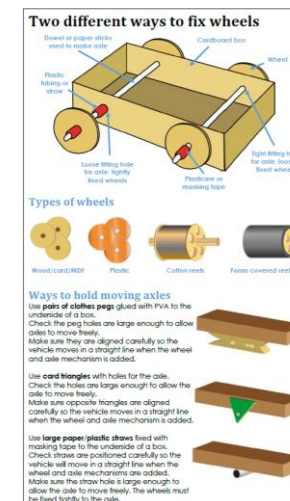


D&T is woven into our LMTW curriculum topics; this ensures children understand key concepts and knowledge around the design and evaluation process and have the opportunity to apply skills to different contexts; the topics also ensure the children can see links to the real world and to other curriculum 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.

Autumn Term 2024		
	Autumn 1	Autumn 2
Nursery	<p>N1: Explore a range of materials and tools through continuous provision</p> <p>N2: Show a preference for a dominant hand Develop their own ideas and then decide which materials to use to express them</p>	<p>N1: Explore materials with different properties using all their senses to investigate them</p> <p>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</p>
Puffins R	<p>Use a range of materials to explore and experiment with including joining with clips, pegs and glue.</p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> To be able to talk about preferences
Puffins 1	<p>Autumn 2nd Half</p> <p>Aspect of D&T: Mechanisms Focus: Wheels and Axles A</p> <p>Designing</p> <ul style="list-style-type: none"> Generate initial ideas and simple design criteria through talking and using own experiences. Develop and communicate ideas through drawings and mock-ups. <p>Making</p> <ul style="list-style-type: none"> 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. <p>Evaluating</p> <ul style="list-style-type: none"> Explore and evaluate a range of products with wheels and axles. Evaluate their ideas throughout and their products against original criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Explore and use wheels, axles and axle holders. Distinguish between fixed and freely moving axles. Know and use technical vocabulary relevant to the project. 	
Choughs 2	<p>Autumn 2nd Half</p> <p>Aspect of D&T: Mechanisms Focus: Wheels and Axles B</p> <p>Designing</p> <ul style="list-style-type: none"> Generate initial ideas and simple design criteria through talking and using own experiences. Develop and communicate ideas through drawings and mock-ups. <p>Making</p> <ul style="list-style-type: none"> 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. <p>Evaluating</p> <ul style="list-style-type: none"> Explore and evaluate a range of products with wheels and axles. Evaluate their ideas throughout and their products against original criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Explore and use wheels, axles and axle holders. Distinguish between fixed and freely moving axles. Know and use technical vocabulary relevant to the project. 	



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.

Making secure connections



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.

Possible products



Possible techniques that children could use




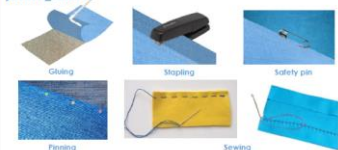



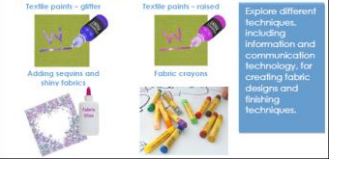
Sensory evaluation

When carrying out sensory evaluations of products and/or separate ingredients, begin with a whole class activity then use group work to develop ideas.

Example of a recording table:

Type of cultural/seasonal food product	Appearance	Smell	Texture	Taste
Savoury scone	Golden/brown	Fresh/baked	Crumbly	Cheesy

Children can also use simple ranking and rating tables as well as star diagrams. Use packaging and/or the internet to find out about the nutritional content of the food products and the ingredients. Link this to the principles of a healthy and varied diet. Edible plants grown in the school grounds can also be evaluated and considered as potential ingredients for products the children will later design, make and evaluate. The benefits/difficulties of selecting seasonal, organic and/or locally sourced ingredients can be discussed here.

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 <div> <p>Aspect of D&T: Textiles Focus: Templates and Joining Techniques A</p> <p>Designing</p> <ul style="list-style-type: none"> 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. <p>Making</p> <ul style="list-style-type: none"> 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. <p>Evaluating</p> <ul style="list-style-type: none"> 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. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> 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. </div> <div> <p>Three alternative ways of using templates and simple pattern pieces</p>  <p>Exploring and evaluating joining techniques</p> <p>Joining fabric</p>  <p>Finishing techniques</p>  </div>	
Choughs 2	Spring 1st Half <div> <p>Aspect of D&T: Textiles Focus: Templates and Joining Techniques B</p> <p>Designing</p> <ul style="list-style-type: none"> 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. <p>Making</p> <ul style="list-style-type: none"> 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. <p>Evaluating</p> <ul style="list-style-type: none"> 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. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> 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. </div> <div> <p>Three alternative ways of using templates and simple pattern pieces</p>  <p>Exploring and evaluating joining techniques</p> <p>Joining fabric</p>  <p>Finishing techniques</p>  </div>	

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.

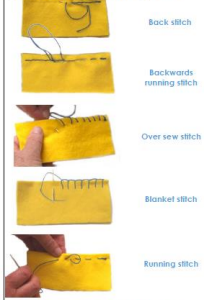
Evaluating

- 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.

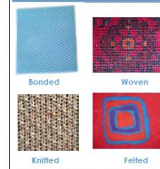
Teaching aids –
joining techniques



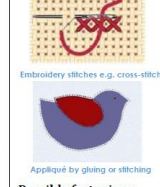
Cutting out techniques



To move children's learning on, as enhancement activities, children could research into different types of fabrics and how they are constructed. They could carry out tests to check e.g. strength, waterproofness or flexibility to ensure their chosen fabric can be used to create a product that meets the needs of user and is fit for purpose.



Decorative Techniques



Possible fastenings



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.

Switches and sensors

- Micro-switch – a switch that can operate as push-to-break switch or a push-to-make switch.
- Push-to-break switch – a switch turned off by pressing it.
- Push-to-make switch – a switch turned on by pressing it.
- Reed switch – a switch operated by a magnet.
- Tilt switch – a switch that works when tilted at an angle.
- Toggle switch – a switch operated when a lever is pressed.
- Light dependent resistor (LDR) – a sensor that operates when light is shined on it.

- Children need to learn how to write a sequence of instructions where a decision is made e.g. when a switch is pressed a buzzer is activated.
- They use a 'control language' or create a flowchart to produce a series of instructions.
- Children's computing knowledge and skills need to focus on using input and output devices connected to a standalone box or interface box.
- They use their learning in computing to control and monitor products they have designed and made e.g. alarm system.

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			<ul style="list-style-type: none"> To identify what someone else prefers and design specifically for them 																
Puffins 1	Summer 2nd Half <div> <p>Aspect of D&T: Food Focus: Preparing Fruit and Vegetables B</p> <p>Designing</p> <ul style="list-style-type: none"> 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. <p>Making</p> <ul style="list-style-type: none"> 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. <p>Evaluating</p> <ul style="list-style-type: none"> 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. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> 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 <i>The Eatwell Guide</i>. Know and use technical and sensory vocabulary relevant to the project. </div> <div> <p>Teaching aids to demonstrate food processing skills</p>  <table border="1"> <caption>Food Processing Equipment</caption> <thead> <tr> <th>Utensil</th><th>Food</th><th>Effect</th><th>Mouth feel</th></tr> </thead> <tbody> <tr> <td>Juicer</td><td>Orange</td><td>Makes juice</td><td>Liquid</td></tr> <tr> <td>Peeler</td><td>Apple</td><td>Unpeeled apple</td><td>Crunchy</td></tr> <tr> <td>Knife</td><td>Carrot</td><td>Thin rings</td><td>Crispy hard</td></tr> </tbody> </table> <p>Hygiene – some key pointers</p> <ul style="list-style-type: none"> Jewellery is removed Hair is tied back Sleeves are rolled up Aprons are on Hands are washed Cuts are covered with blue waterproof dressing <p>Further information from www.foodatactoffie.org.uk</p> </div>			Utensil	Food	Effect	Mouth feel	Juicer	Orange	Makes juice	Liquid	Peeler	Apple	Unpeeled apple	Crunchy	Knife	Carrot	Thin rings	Crispy hard
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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.

Wings, Frito based sandwich, Sandwich

Skills and techniques

Grating cheese, Spreading butter on bread, Cutting using the bridge technique, Cutting using the claw technique

Investigating and Evaluating Activities

Children can analyse existing products related to their project using sensory evaluations and record their results in a table. Explain that tasting is not the same as eating. Provide kitchen towel so children can spit out food they do not like. Provide water to cleanse palette between tasting products.

Analysing existing products

Filling	Appearance	Smell	Flavour/Taste	Texture	Dislike	Neither	Like
1							
2							
3							
4							

Word bank

	Colour/taste	Smell	Flavour/Taste	Texture	Dislike	Neither	Like
1	Dark/white	Rich	Salty	Crisp			
2	Greasy	Smoky	Spicy	Crunchy			
3	Waxy	Oniony	Spicy	Soft			
4		Garlicky	Rich	Chewy			

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.

Developing understanding of gears and pulleys

Using construction kits, ask children to explore gear ratio using combinations of two gears e.g.

No. teeth	Ratio
8, 16	2:1
8, 40	5:1
8, 24	3:1
40, 40	1:1

Building gears or pulleys into children's products

Construct a chassis using wooden strips (frame) or corrugated plastic. Add a pulley and/or wheels and an electric motor with battery housing. The chassis can be used for a vehicle or to drive machines such as fairground rides.

An example of a handmade reversing switch

Two round discs, Paper fasteners, Motor driven gears, Paper fastener