

## D&T Progression Map – Year 4

	Autumn 2	Spring 2	Summer 2
Topic	Tea	Tea	Electricity
Aspect of D&T	Structures	Food	Electrical Systems
Focus	Shell Structures using Computer Aided Design (CAD)	Healthy and Varied Diet	Simple Circuits and Switches
Product, user and purpose	Packaging for Tea for shop customers for marketing purposes	Biscuits for their Alice In Wonderland celebration tea with family	A model town linked to Pied Piper of Hamelin as a prop to retell the story.
Learning Objective (from DC Pro)	<p>I can produce a plan to show how my product features will be appealing to myself and others.</p> <p>I can recognise if I need to make my product more appealing by changing features.</p> <p>I can create fit for purpose products by researching the needs of my user.</p> <p>I can discuss why I have selected the tools and materials for my products and use them carefully (including measuring).</p> <p>I can evaluate my product, referring to both its appearance and the way it works.</p> <p>I can discuss inventors and their contribution to design and technology.</p> <p>I can suggest some improvements and say what was good and not so good about my original design.</p>	<p>I can write a simple recipe and use my cooking techniques to create the dish, being hygienic and safe.</p> <p>I know the difference between food that is grown and food that is processed.</p> <p>I can describe seasonality in food production.</p> <p>I can produce a plan to show how my product features will be appealing to myself and others.</p> <p>I can create fit for purpose products by researching the needs of my user.</p> <p>I can suggest some improvements and say what was good and not so good about my original design.</p>	<p>I can produce a plan to show how my product features will be appealing to myself and others.</p> <p>I can recognise if I need to make my product more appealing by changing features.</p> <p>I can create fit for purpose products by researching the needs of my user.</p> <p>I can discuss why I have selected the tools and materials for my products and use them carefully (including measuring).</p> <p>I can evaluate my product, referring to both its appearance and the way it works.</p> <p>I can discuss inventors and their contribution to design and technology.</p> <p>I can suggest some improvements and say what was good and not so good about my original design.</p> <p>I can make a product which uses both electrical and mechanical components.</p>

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Skills	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product.</li> <li>• Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Plan the order of the main stages of making.</li> <li>• Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy.</li> <li>• Explain their choice of materials according to functional properties and aesthetic qualities.</li> <li>• Use computer-generated finishing techniques suitable for the product they are creating.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used.</li> <li>• Test and evaluate their own products against design criteria and the intended user and purpose.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Plan the main stages of a recipe, listing ingredients, utensils and equipment.</li> <li>• Select and use appropriate utensils and equipment to prepare and combine ingredients.</li> <li>• Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.</li> <li>• Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Order the main stages of making.</li> <li>• Select from and use tools and equipment to cut, shape, join and finish with some accuracy.</li> <li>• Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Investigate and analyse a range of existing battery-powered products.</li> <li>• Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.</li> </ul>
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Key Learning/ Technical Knowledge	<p><b>Prior learning</b></p> <ul style="list-style-type: none"> <li>• Experience of using different joining, cutting and finishing techniques with paper and card.</li> <li>• A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science.</li> <li>• Familiarity with general purpose software that can be used to draw accurate shapes, such as Microsoft Word, or simple computer-aided design (CAD), such as 2D Primary by Techsoft.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</li> <li>• Develop and use knowledge of how to construct strong, stiff shell structures.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<p><b>Prior learning</b></p> <ul style="list-style-type: none"> <li>• Know some ways to prepare ingredients safely and hygienically.</li> <li>• Have some basic knowledge and understanding about healthy eating and <i>The eatwell plate</i>.</li> <li>• Have used some equipment and utensils and prepared and combined ingredients to make a product.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Know how to use appropriate equipment and utensils to prepare and combine food.</li> <li>• Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</li> <li>• Know and use relevant technical and sensory vocabulary appropriately.</li> </ul>	<p><b>Prior learning</b></p> <ul style="list-style-type: none"> <li>• Constructed a simple series electrical circuit in science, using bulbs, switches and buzzers.</li> <li>• Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.</li> <li>• Apply their understanding of computing to program and control their products.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>
Vocabulary	<p>shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity</p> <p>marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating</p> <p>font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype</p>	<p>name of products, names of equipment, utensils, techniques and ingredients</p> <p>texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury</p> <p>hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested</p> <p>healthy/varied diet</p> <p>planning, design criteria, purpose, user, annotated sketch, sensory evaluations</p>	<p>series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip</p> <p>control, program, system, input device, output device</p> <p>user, purpose, function, prototype, design criteria, innovative, appealing, design brief</p>

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<p>Tools</p>	<p>collection of shell structures for different purposes and users</p> <p>card, squared paper, coloured paper, adhesive tape, masking tape, PVA glue, glue spreaders, acetate sheet, pencils, felt-tip pens, rulers, scissors</p> <p>computer with computer-aided design (CAD)</p> <p>software such as Techsoft 2D Primary or Microsoft Word, printer</p>	<p>information about foods from around the world, basic recipes</p> <p>range of relevant example foods to taste and evaluate</p> <p>suitable equipment and utensils such as: knives, chopping board, weighing scales, measuring jugs, bowls, baking trays, spoons – various sizes, parchment paper, plastic film</p>	<p>handling collection of battery-powered electrical products</p> <p>switches including toggle, push-to-make and push-to-break</p> <p>aluminium foil, paper fasteners, paper clips, card, corrugated plastic, reclaimed materials, finishing materials and media</p> <p>buzzers, bulbs, bulb holders, batteries, battery holders, wire, automatic wire strippers</p> <p>suitable control program with interface box or standalone control box</p> <p>scissors, PVA glue, cutting mats</p>
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