

**Cheadle Primary – the school at the heart of the village, free to flourish, ready to learn and succeed. Progression of Skills and Knowledge: DESIGN TECHNOLOGY Year 6**

	Autumn 1	Autumn 2	Spring 1	Spring 2/Summer 1	Summer 1 and 2
Topic	World War Two		Mountains	South America-Brazil	Britain Since 1066-Focus on Battles
<b>National Curriculum Learning Intentions</b>	<p>Design - use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups; • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Make - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; • select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.</p> <p>Evaluate - investigate and analyse a range of existing products; • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work; • understand how key events and individuals in design and technology have helped shape the world</p> <p>Technical Knowledge - apply their understanding of how to strengthen, stiffen and reinforce more complex structures; • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]; • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]; • apply their understanding of computing to program, monitor and control their products. Cooking and Nutrition - understand and apply the principles of a healthy and varied diet; • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques; • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>				
<b>DT Units</b>	<b>Food - Celebrating seasonality (link to rationing)</b>	<b>Mechanical Systems - cams</b>		<b>Textiles - Combining different fabric shapes and using computer-aided design (CAD)</b> Felt Phone Cases	
<b>Design</b>	<ul style="list-style-type: none"> <li>Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.</li> <li>Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.</li> <li>Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</li> </ul>	<ul style="list-style-type: none"> <li>Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.</li> <li>Develop a simple design specification to aid their thinking.</li> <li>Develop and communicate ideas through discussion, annotated drawings and drawings from different views.</li> </ul>		<ul style="list-style-type: none"> <li>Generate innovative ideas by carrying out research using surveys, interviews and questionnaires.</li> <li>Develop, model and communicate ideas through talking, drawing, annotated sketches, cross-sectional drawing, exploded diagrams, templates, mock-ups and prototypes including computer-aided design.</li> <li>Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</li> <li>Make design decisions, taking account of constraints such as time, resources and cost.</li> </ul>	
<b>Make</b>	<ul style="list-style-type: none"> <li>Write a step-by-step recipe, including a list of ingredients, equipment and utensils.</li> <li>Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> <li>Make, decorate and present the food product appropriately for the intended user and purpose.</li> <li>Follow procedures for safety and hygiene.</li> </ul> <p>See science curriculum:</p> <ul style="list-style-type: none"> <li>Make circuits using buzzers , bulbs, motors, switches.</li> </ul>	<ul style="list-style-type: none"> <li>Produce detailed lists of tools, equipment and materials and formulate a step-by-step plan.</li> <li>Select from and use a range of tools, materials equipment and components that are suitable for the task and make products that are accurately assembled and well finished.</li> <li>Explain their choice of materials and components according to the functional properties and aesthetic qualities.</li> <li>Accurately assemble, join and combine materials and components.</li> <li>Accurately measure, mark out, cut and shape materials and components (ART)</li> <li>Accurately apply a range of finishing techniques, including those from art and design (ART)</li> <li>Work within constraints of time and resources.</li> </ul>		<ul style="list-style-type: none"> <li>Produce detailed lists of equipment and fabrics relevant to their tasks.</li> <li>Formulate step-by-step plans.</li> <li>Select from, and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished.</li> <li>Work within the constraints of time, resources and cost.</li> <li>Accurately measure, mark out, cut and shape materials and components (ART)</li> <li>Accurately apply a range of finishing techniques, including those from art and design (ART)</li> </ul>	
<b>Evaluate</b>	<ul style="list-style-type: none"> <li>Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using tables/graphs/charts etc.</li> <li>Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</li> <li>To understand how key chefs have influenced eating habits to promote varied and healthy diets.</li> </ul>	<ul style="list-style-type: none"> <li>Compare final products to the original design.</li> <li>Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>Consider the views of others, including the intended users, to improve their work.</li> </ul>		<ul style="list-style-type: none"> <li>Investigate and analyse textile products linked to their final product and find out: how well they have been designed and made; why the materials have been chosen; what methods of construction have been used; how well the products work and achieve their purpose; how much it costs to make; how the products meet the user needs and wants; how sustainable the materials in the product are.</li> <li>Compare the final product to the original design specification.</li> <li>Test product with the intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>identify the strengths and areas for development in their ideas and products</li> <li>Consider the views of others to improve their work.</li> </ul>	
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li>Know that a recipe can be adapted by adding or substituting one or more ingredients and how/why this was necessary during WW2.</li> <li>Know how to use utensils and equipment including heat sources to prepare and cook food.</li> <li>Understand about seasonality in relation to food products and the source of different food products.</li> <li>Know and use relevant technical and sensory vocabulary.</li> </ul> <p>See science curriculum:</p> <ul style="list-style-type: none"> <li>How more complex electrical circuits and components can be used to create functional products.</li> </ul>	<ul style="list-style-type: none"> <li>Understand that mechanical systems such as cams produce different types of movement and change the direction of movement.</li> <li>Understand that mechanical systems have an input, process and an output.</li> <li>Know how to reinforce and strengthen a 3D framework.</li> <li>Use learning from mathematics to help design and make products that work.</li> <li>Know that materials can be combined and mixed to create more useful characteristics.</li> <li>Know and use the correct technical vocabulary for the projects they are undertaking.</li> </ul>		<ul style="list-style-type: none"> <li>Know that a 3D textiles product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</li> <li>Know that fabrics can be strengthened, stiffened and reinforced where appropriate.</li> <li>Know that materials have both functional properties and aesthetic qualities.</li> </ul>	

<b>Cooking and Nutrition</b>	<ul style="list-style-type: none"> <li>• Prepare and cook a seasonal savoury dish safely and hygienically, where appropriate, using a heat source.</li> <li>• Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading, combining, folding and baking.</li> <li>• Know that recipes can be adapted to change the appearance, taste, texture and aroma based on the availability of ingredients.</li> <li>• Know that recipes can be adapted for food intolerances.</li> <li>• Know how food is processed into ingredients that can be eaten or used in cooking. Know the advantages and disadvantages of processed foods.</li> <li>• Understand that food and drink contain different substances - nutrients, water and fibre - that are needed for health.</li> </ul>		
<b>Key Skills</b>	<ul style="list-style-type: none"> <li>• Understand what seasonality means and name some foods which are reared, caught and processed.</li> <li>• Generate a range of simple ideas for a balanced, seasonal recipe, choosing one for a final design,</li> <li>• Prepare, assemble and cook a range of ingredients safely and hygienically.</li> <li>• Use a wide range of preparation and cooking techniques including: chopping, squeezing, peeling, grating, slicing, mixing, combining, folding and cooking.</li> <li>• Use a heat source (hot plate) safely and effectively.</li> </ul>	<ul style="list-style-type: none"> <li>• Cut materials accurately and safely by selecting appropriate tools</li> <li>• Design and assemble a simple cam mechanism.</li> <li>• Use tools (glue guns, hacksaws and hand drills) with increasing accuracy.</li> <li>• Measure, mark out and cut materials accurately and safely to the nearest cm.</li> <li>• Select appropriate materials to make a framework, handle and cam mechanism.</li> <li>• Use peer feedback and design criteria to evaluate the final product.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a design criteria that is aimed at a target market.</li> <li>• Use a backstitch and at least one other type of stitch.</li> <li>• Create simple decorative patterns.</li> <li>• Create an accurate paper template.</li> <li>• Measure and mark a sewing and cutting line.</li> </ul>
<b>Learning Intentions</b>	<ul style="list-style-type: none"> <li>• To explain what seasonality means and know when different fruit and vegetables are in season in the United Kingdom.</li> <li>• To explain where, when and how a variety of ingredients are reared, caught and processed.</li> <li>• To taste and evaluate seasonal and/or processed foods.</li> <li>• To know what a balanced diet looks like and explain the importance of protein as a proportion of a healthy and varied diet.</li> <li>• To generate, evaluate and refine recipe ideas.</li> <li>• To prepare, cook and evaluate a healthy seasonal meal.</li> </ul>	<ul style="list-style-type: none"> <li>• To explain how simple cam mechanisms work.</li> <li>• To select materials according to their functional properties.</li> <li>• To use research and develop design criteria to inform my design.</li> <li>• To build a framework, accurately using a wider range of tools and equipment.</li> <li>• To evaluate my product.</li> <li>• To understand and use a mechanical system.</li> </ul>	<ul style="list-style-type: none"> <li>• To write a design criteria for a mobile phone case.</li> <li>• To generate a range of design ideas and clearly communicate my final design.</li> <li>• To make a paper template.</li> <li>• To practise using different types of stitches and choose the best one to use on the final product.</li> <li>• To organise my ideas into a step-by-step plan.</li> <li>• To select decorative techniques and fastenings according to their functional properties and aesthetic qualities.</li> <li>• To evaluate my product.</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• A selection of fruit and vegetables from different seasons.</li> <li>• An example of a raw food next to a selection of their processed foods e.g. tomato, tinned tomatoes, tomato ketchup, tomato juice, pasta sauce etc.</li> <li>• Basic recipes</li> <li>• Equipment and utensils to make and cook recipes such as: hot plates, weighing scales, measuring jugs, bowls, spoons (various sizes), knives, chopping boards, pans, peelers, baking trays, parchment paper.</li> </ul>	<ul style="list-style-type: none"> <li>• Videos and photographs of cams, models or toys with different cam mechanisms.</li> <li>• MDF, card or wooden wheels, plastic or wooden cams, dowel, card boxes, PVA glue, masking tape, double-sided tape, corrugated plastic, split pins, cotton reel, foam.</li> <li>• Hacksaws, bench hooks, hammer, hand drill.</li> </ul>	<ul style="list-style-type: none"> <li>• Examples of existing textile products (mobile phone cases). examples of fastenings (hook and eye, press studs, buttons, ribbon, velcro).</li> <li>• Felt, pins, needles, thread, measuring tape, left/right handed fabric scissors, pinking shears, fabric glue, 1cm squared paper.</li> <li>• Finishing materials such as sequins, buttons, fabric paints etc.</li> <li>• Computer software such as Techsoft 2D Primary, Wild Things by Wild Ginger, Paint and Microsoft Word.</li> </ul>
<b>Vocabulary</b>	<p>Seasonal, Spring, Summer, Autumn, Winter, reared, caught, processed, imported, sustainable.</p> <p>Balanced, protein, fat, sugar, carbohydrate, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality.</p> <p>Ingredients, utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, blanch, fry, chop, slice, peel, grate</p>	<p>Cam, snail cam, off-centre cam, peg cam, pear shaped cam, finish, join.</p> <p>Follower, axle, shaft, crank, handle. housing, framework.</p> <p>Rotation, rotary motion, oscillating motion, reciprocating motion.</p> <p>Annotated sketches.</p> <p>Mechanical system, input movement, process, output movement.</p> <p>Design decisions, research, functionality, innovation, authentic, user, purpose, design specification, design brief.</p>	<p>Design criteria, aesthetics, functional, specification, innovative, annotate, design process/decisions, user, purpose, evaluate, mock-up, prototype.</p> <p>Seam, seam allowance, reinforce, right side, wrong side, hem, template, pattern pieces, precisely, accurately, scale, measurements, millimetre, centimetre.</p> <p>Computer aided design (CAD), computer aided manufacture (CAM), font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip.</p> <p>Whipstitch, backstitch, running stitch, blanket stitch, fastenings, decoration, felt.</p>