



## Design & Technology Progression by strand, concept and year

Based on the D&T Association 'Projects on a page'

Mechanisms		
Year 1/2	Year 3/4	Y3/4
<b>Sliders &amp; Levers</b>	<b>Levers and linkages</b>	<b>Pneumatics</b>
<b>Prior learning</b>		
<ul style="list-style-type: none"> <li>• Early experiences of working with paper and card to make simple flaps and hinges.</li> <li>• Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape.</li> </ul>	<ul style="list-style-type: none"> <li>• Explored and used mechanisms such as flaps, sliders and levers.</li> <li>• Gained experience of basic cutting, joining and finishing techniques with paper and card.</li> </ul>	<ul style="list-style-type: none"> <li>• Explored simple mechanisms, such as sliders and levers, and simple structures.</li> <li>• Learnt how materials can be joined to allow movement.</li> <li>• Joined and combined materials using simple tools and techniques.</li> </ul>
<b>Designing</b>		
<ul style="list-style-type: none"> <li>• Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</li> <li>• Develop, model and communicate their ideas through drawings and mock-ups with card and paper.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.</li> <li>• Use annotated sketches and prototypes to develop, model and communicate ideas.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user.</li> <li>• Use annotated sketches and prototypes to develop, model and communicate ideas.</li> </ul>
<b>Making</b>		
<ul style="list-style-type: none"> <li>• Plan by suggesting what to do next.</li> <li>• Select and use tools, explaining their choices, to cut, shape and join paper and card.</li> <li>• Use simple finishing techniques suitable for the product they are creating.</li> </ul>	<ul style="list-style-type: none"> <li>• Order the main stages of making.</li> <li>• Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.</li> <li>• Select from and use finishing techniques suitable for the product they are creating.</li> </ul>	<ul style="list-style-type: none"> <li>• Order the main stages of making.</li> <li>• Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons.</li> <li>• Select from and use finishing techniques suitable for the product they are creating.</li> </ul>



<b>Evaluating</b>		
<ul style="list-style-type: none"><li>• Explore a range of existing books and everyday products that use simple sliders and levers.</li><li>• Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.</li></ul>	<ul style="list-style-type: none"><li>• Investigate and analyse books and, where available, other products with lever and linkage mechanisms.</li><li>• Evaluate their own products and ideas against criteria and user needs, as they design and make.</li></ul>	<ul style="list-style-type: none"><li>• Investigate and analyse books, videos and products with pneumatic mechanisms.</li><li>• Evaluate their own products and ideas against criteria and user needs, as they design and make.</li></ul>
<b>Technical knowledge &amp; understanding</b>		
<ul style="list-style-type: none"><li>• Explore and use sliders and levers.</li><li>• Understand that different mechanisms produce different types of movement.</li><li>• Know and use technical vocabulary relevant to the project.</li></ul>	<ul style="list-style-type: none"><li>• Understand and use lever and linkage mechanisms.</li><li>• Distinguish between fixed and loose pivots.</li><li>• Know and use technical vocabulary relevant to the project.</li></ul>	<ul style="list-style-type: none"><li>• Understand and use pneumatic mechanisms.</li><li>• Know and use technical vocabulary relevant to the project.</li></ul>



Mechanisms		
Year 1/2	Y5/6	Y5/6
<b>Wheels &amp; axles</b>	<b>Cams</b>	<b>Pulleys or Gears*</b>
<b>Prior learning</b>		
<ul style="list-style-type: none"> <li>Assembled vehicles with moving wheels using construction kits.</li> <li>Explored moving vehicles through play.</li> <li>Gained some experience of designing, making and evaluating products for a specified user and purpose.</li> <li>Developed some cutting, joining and finishing skills with card.</li> </ul>	<ul style="list-style-type: none"> <li>Experience of axles, axle holders and wheels that are fixed or free moving.</li> <li>Basic understanding of different types of movement.</li> <li>Experience of cutting and joining techniques with a range of materials including card, plastic and wood.</li> <li>An understanding of how to strengthen and stiffen structures.</li> </ul>	<ul style="list-style-type: none"> <li>Experience of axles, axle holders and wheels that are fixed or free moving.</li> <li>Basic understanding of electrical circuits, simple switches and components.</li> <li>Experience of cutting and joining techniques with a range of materials including card, plastic and wood.</li> <li>An understanding of how to strengthen and stiffen structures.</li> </ul>
<b>Designing</b>		
<ul style="list-style-type: none"> <li>Generate initial ideas and simple design criteria through talking and using your own experiences.</li> <li>Develop and communicate ideas through drawings and mock-ups.</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 guide their thinking.</li> <li>Develop and communicate ideas through discussion, annotated drawings, exploded 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, questionnaires and web-based resources.</li> <li>Develop a simple design specification to guide their thinking.</li> <li>Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.</li> </ul>
<b>Making</b>		
<ul style="list-style-type: none"> <li>Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.</li> <li>Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.</li> </ul>	<ul style="list-style-type: none"> <li>Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.</li> </ul>	<ul style="list-style-type: none"> <li>Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.</li> </ul>



<b>Evaluating</b>		
<ul style="list-style-type: none"><li>• Explore and evaluate a range of products with wheels and axles.</li><li>• Evaluate their ideas throughout and their products against original criteria.</li></ul>	<ul style="list-style-type: none"><li>• Compare the final product to the original design specification.</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 to improve their work.</li><li>• Investigate famous manufacturing and engineering companies relevant to the project.</li></ul>	<ul style="list-style-type: none"><li>• Compare the final product to the original design specification.</li><li>• Test products with intended users and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li><li>• Consider the views of others to improve their work.</li><li>• Investigate famous manufacturing and engineering companies relevant to the project.</li></ul>
<b>Technical knowledge &amp; understanding</b>		
<ul style="list-style-type: none"><li>• Explore and use wheels, axles and axle holders.</li><li>• Distinguish between fixed and freely moving axles.</li><li>• Know and use technical vocabulary relevant to the project.</li></ul>	<ul style="list-style-type: none"><li>• Understand that mechanical systems have an input, process and an output.</li><li>• Understand how cams can be used to produce different types of movement and change the direction of movement.</li></ul>	<ul style="list-style-type: none"><li>• Understand that mechanical and electrical systems have an input, process and an output.</li><li>• Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.</li><li>• Know and use technical vocabulary relevant to the project.</li></ul>



Structures	
Year 1/2	Year 5/6
<b>Freestanding structures</b>	<b>Frame Structures</b>
<b>Prior learning</b>	
<ul style="list-style-type: none"> <li>• Experience of using construction kits to build walls, towers and frameworks.</li> <li>• Experience of using basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card.</li> <li>• Experience of different methods of joining card and paper.</li> </ul>	<ul style="list-style-type: none"> <li>• Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials.</li> <li>• Basic understanding of what structures are and how they can be made stronger, stiffer and more stable.</li> </ul>
<b>Designing</b>	
<ul style="list-style-type: none"> <li>• Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</li> <li>• Develop, model and communicate their ideas through talking, mock-ups and drawings.</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.</li> <li>• Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.</li> <li>• Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.</li> </ul>
<b>Making</b>	
<ul style="list-style-type: none"> <li>• Plan by suggesting what to do next.</li> <li>• Select and use tools, skills and techniques, explaining their choices.</li> <li>• Select new and reclaimed materials and construction kits to build their structures.</li> <li>• Use simple finishing techniques suitable for the structure they are creating.</li> </ul>	<ul style="list-style-type: none"> <li>• Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.</li> <li>• Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.</li> <li>• Use finishing and decorative techniques suitable for the product they are designing and making.</li> </ul>



## Evaluating

- Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.
- Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.

- Investigate and evaluate a range of existing frame structures.
- Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
- Research key events and individuals relevant to frame structures.

## Technical knowledge & understanding

- Know how to make freestanding structures stronger, stiffer and more stable.
- Know and use technical vocabulary relevant to the project.

- Understand how to strengthen, stiffen and reinforce 3-D frameworks.
- Know and use technical vocabulary relevant to the project.



Structures	
Year 1/2 (unit adapted from Y3/4)	Year 3/4
<b>Shell Structures</b>	<b>Shell structures (with CAD)</b>
<b>Prior learning</b>	
<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> </ul>	<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/Google Docs, or simple computer-aided design (CAD), such as 2D Primary by Techsoft.</li> <li>• Experience of making a basic net using paper /card</li> </ul>
<b>Designing</b>	
<ul style="list-style-type: none"> <li>• Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product.</li> <li>• Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas.</li> </ul>	<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>
<b>Making</b>	
<ul style="list-style-type: none"> <li>• Order the main stages of making.</li> <li>• Select and use appropriate tools 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 finishing techniques suitable for the product they are creating.</li> </ul>	<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>



<b>Evaluating</b>	
<ul style="list-style-type: none"><li>• Investigate and evaluate a range of existing 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>	<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>
<b>Technical knowledge &amp; understanding</b>	
<ul style="list-style-type: none"><li>• Develop and use knowledge of how to construct strong, stiff shell structures.</li><li>• Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</li><li>• Know and use technical vocabulary relevant to the project.</li></ul>	<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><li>• Technical knowledge of navigating around specific computer software</li></ul>



Electrical Systems	
Year 3/4 (ideally Y4)	Year 5/6 (ideally Y6)
<b>Simple circuits and switches</b>	<b>More complex switches and circuits</b>
<b>Prior learning</b>	
<ul style="list-style-type: none"> <li>Constructed a simple series electrical circuit in science, using bulbs, switches and buzzers. <i>(NOTE - Science Y4 Electricity unit must be taught first or at the same time)</i></li> <li>Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue.</li> </ul>	<ul style="list-style-type: none"> <li>Understanding of the essential characteristics of a series circuit and experience of creating a battery-powered, functional, electrical product. (previous unit) <i>(NOTE - Science Y6 Electricity unit must be taught first or at the same time)</i></li> </ul>
<b>Designing</b>	
<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>	<ul style="list-style-type: none"> <li>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.</li> <li>Generate and develop innovative ideas and share and clarify these through discussion.</li> <li>Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.</li> </ul>
<b>Making</b>	
<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>	<ul style="list-style-type: none"> <li>Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</li> <li>Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.</li> </ul>



<b>Evaluating</b>	
<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>	<ul style="list-style-type: none"><li>• Continually evaluate and modify the working features of the product to match the initial design specification.</li><li>• Test the system to demonstrate its effectiveness for the intended user and purpose.</li><li>• Investigate famous inventors who developed ground-breaking electrical systems and components.</li></ul>
<b>Technical knowledge &amp; understanding</b>	
<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>	<ul style="list-style-type: none"><li>• Understand and use electrical systems in their products.</li><li>• Know and use technical vocabulary relevant to the project.</li></ul>



Food		
Year 1/2	Year 3/4	Year 5/6
<b>Fruit smoothies / Soup (fruit &amp; veg)</b>	<b>Pizza / Fruit crumble (including healthy options)</b>	<b>Celebrating culture and seasonality Bread</b>
<b>Prior learning</b>		
<ul style="list-style-type: none"> <li>• Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell.</li> <li>• Experience of cutting soft fruit and vegetables using appropriate utensils.</li> </ul>	<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>	<ul style="list-style-type: none"> <li>• Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet.</li> <li>• Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients.</li> </ul>
<b>Designing</b>		
<ul style="list-style-type: none"> <li>• Design appealing products for a particular user based on simple design criteria.</li> <li>• Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</li> <li>• Communicate these ideas through talk and drawings.</li> </ul>	<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>	<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>
<b>Making</b>		
<ul style="list-style-type: none"> <li>• Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.</li> <li>• Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create</li> </ul>	<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> </ul>	<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</li> </ul>



<p>a chosen product.</p>	<ul style="list-style-type: none"> <li>• Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</li> </ul>	<p>ingredients.</p> <ul style="list-style-type: none"> <li>• Make, decorate and present the food product appropriately for the intended user and purpose.</li> </ul>
<p><b>Evaluating</b></p>		
<ul style="list-style-type: none"> <li>• Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.</li> <li>• Evaluate ideas and finished products against design criteria, including intended user and purpose.</li> </ul>	<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>	<ul style="list-style-type: none"> <li>• 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.</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>• Understand how key chefs have influenced eating habits to promote varied and healthy diets.</li> </ul>
<p><b>Technical knowledge &amp; understanding</b></p>		
<ul style="list-style-type: none"> <li>• Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</li> <li>• 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 plate</i>.</li> <li>• Know and use technical and sensory vocabulary relevant to the project.</li> </ul>	<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>	<ul style="list-style-type: none"> <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>



Textiles			
Year 1/2	Year 3/4	Year 5/6	Year 5/6
Templates & joining techniques	2D shape to 3D products	Combining different fabric shapes	Using CAD in textiles
<b>Prior learning</b>			
<ul style="list-style-type: none"> <li>• Explored and used different fabrics.</li> <li>• Cut and join fabrics with simple techniques.</li> <li>• Thought about the user and purpose of products.</li> </ul>	<ul style="list-style-type: none"> <li>• Have joined fabric in simple ways by glueing and stitching.</li> <li>• Have used simple patterns and templates for marking out.</li> <li>• Have evaluated a range of textile products.</li> </ul>	<ul style="list-style-type: none"> <li>• Experience of basic stitching, joining textiles and finishing techniques.</li> <li>• Experience of making and using simple pattern pieces.</li> </ul>	<ul style="list-style-type: none"> <li>• Experience of stitching, joining and finishing techniques in textiles.</li> <li>• Experience of making and using textiles pattern pieces.</li> <li>• Experience of simple computer-aided design applications.</li> </ul>
<b>Designing</b>			
<ul style="list-style-type: none"> <li>• Design a functional and appealing product for a chosen user and purpose based on simple design criteria.</li> <li>• Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.</li> <li>• Produce annotated sketches, prototypes, final product sketches and pattern pieces.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.</li> <li>• Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, 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> </ul>	<ul style="list-style-type: none"> <li>• Generate innovative ideas through research including surveys, interviews and questionnaires.</li> <li>• Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using 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> </ul>
<b>Making</b>			
<ul style="list-style-type: none"> <li>• Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.</li> </ul>	<ul style="list-style-type: none"> <li>• Plan the main stages of making.</li> <li>• Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.</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 and, if appropriate, allocate tasks within a team.</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 and, if appropriate, allocate tasks within a team.</li> </ul>



<ul style="list-style-type: none"> <li>• Select from and use textiles according to their characteristics.</li> </ul>	<ul style="list-style-type: none"> <li>• Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.</li> </ul>	<ul style="list-style-type: none"> <li>• Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.</li> </ul>	<ul style="list-style-type: none"> <li>• Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.</li> </ul>
<p><b>Evaluating</b></p>			
<ul style="list-style-type: none"> <li>• Explore and evaluate a range of existing textile products relevant to the project being undertaken.</li> <li>• Evaluate their ideas throughout and their final products against original design criteria.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate a range of 3-D textile products relevant to the project.</li> <li>• Test their product against the original design criteria and with the intended user.</li> <li>• Take into account others' views.</li> <li>• Understand how a key event/individual has influenced the development of the chosen product and/or fabric.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate and analyse textile products linked to their final product.</li> <li>• Compare the final product to the original design specification.</li> <li>• Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>• Consider the views of others to improve their work.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate and analyse textile products linked to their final product.</li> <li>• Compare the final product to the original design specification.</li> <li>• Test products with 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 to improve their work</li> </ul>
<p><b>Technical knowledge &amp; understanding</b></p>			
<ul style="list-style-type: none"> <li>• Understand how simple 3-D textile products are made, using a template to create two identical shapes.</li> <li>• Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</li> <li>• Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to strengthen, stiffen and reinforce existing fabrics.</li> <li>• Understand how to securely join two pieces of fabric together.</li> <li>• Understand the need for patterns and seam allowances.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</li> <li>• Fabrics can be strengthened, stiffened and reinforced where appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>• A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</li> <li>• Fabrics can be strengthened, stiffened and reinforced where appropriate.</li> </ul>



### Progression in objectives by process

DESIGNING	KEY STAGE 1	KEY STAGE 2
<p><b>Understand contexts, users and purposes</b></p>	<p><b>Across KS1 pupils should:</b></p> <ul style="list-style-type: none"> <li>● Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment.</li> <li>● State what products they are designing and making</li> <li>● Say whether their products are for themselves or other users</li> <li>● Describe what their products are for</li> <li>● Say how their products will work</li> <li>● Say how they will make their products suitable for their intended users.</li> <li>● Use simple design criteria to help develop their ideas</li> </ul>	<p><b>Across KS2 pupils should;</b></p> <ul style="list-style-type: none"> <li>● Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and wider environment</li> <li>● Describe the purpose of their products</li> <li>● Indicate the design features of their products that will appeal to intended users</li> <li>● Explain how particular parts of their products work</li> </ul> <p><b>Y3/4</b></p> <ul style="list-style-type: none"> <li>● Gather information about the needs and wants of particular individuals and groups</li> <li>● Develop their own design criteria and use these to inform their ideas</li> </ul> <p><b>Y5/6</b></p> <ul style="list-style-type: none"> <li>● Carry out research, using surveys, interviews, questionnaires and web-based resources</li> <li>● Identify the needs, wants, preferences and values of particular individuals and groups</li> <li>● Develop a simple design specification to guide their thinking</li> </ul>
MAKING	KEY STAGE ONE	KEY STAGE TWO
<p><b>Planning</b></p>	<p><b>Across KS1 pupils should;</b></p> <ul style="list-style-type: none"> <li>● Plan by suggesting what to do next</li> </ul>	<p><b>Across KS2 pupils should;</b></p> <ul style="list-style-type: none"> <li>● Select tools and equipment suitable for the task</li> </ul>



	<ul style="list-style-type: none"> <li>● Select from a range of tools and equipment, explaining their choices</li> <li>● Select from a range of materials and components according to their characteristics</li> </ul>	<ul style="list-style-type: none"> <li>● Explain their choice of tools and equipment in relation to the skills and techniques they will be using</li> <li>● Select materials and components suitable for the task</li> <li>● Explain their choice of materials and components according to functional properties and aesthetic qualities</li> </ul> <p><b>Y3/4</b></p> <ul style="list-style-type: none"> <li>● Order the main stages of making</li> </ul> <p><b>Y5/6</b></p> <ul style="list-style-type: none"> <li>● Produce appropriate lists of tools, equipment and materials that they need</li> <li>● Formulate step-by-step plans as a guide to making</li> </ul>
<p><b>Practical skills and techniques</b></p>	<p><b>Across KS1 pupils should;</b></p> <ul style="list-style-type: none"> <li>● Follow procedures for safety and hygiene</li> <li>● Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components</li> <li>● Measure, mark out, cut and shape materials and components</li> <li>● Assemble, join and combine materials and components</li> <li>● Use finishing techniques, including those from art and design</li> </ul>	<p><b>Across KS2 pupils should</b></p> <ul style="list-style-type: none"> <li>● Follow procedures for safety and hygiene</li> <li>● Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</li> </ul> <p><b>Y3/4</b></p> <ul style="list-style-type: none"> <li>● Measure, mark out, cut and shape materials and components with some accuracy</li> <li>● Assembly, join and combine materials and components with some accuracy</li> <li>● Apply a range of finishing techniques, including those from art and design, with some accuracy</li> </ul> <p><b>Y5/6</b></p> <ul style="list-style-type: none"> <li>● Accurately measure, mark out, cut and shape materials and components</li> </ul>



		<ul style="list-style-type: none"> <li>● Accurately assemble, join and combine materials and components</li> <li>● Accurately apply a range of finishing techniques, including those from art and design</li> <li>● Use techniques that involve a number of steps</li> <li>● Demonstrate resourcefulness when tackling practical problems</li> </ul>
<b>EVALUATING</b>	<b>KEY STAGE ONE</b>	<b>KEY STAGE TWO</b>
<b>Own ideas and products</b>	<p><b>Across KS1 pupils should;</b></p> <ul style="list-style-type: none"> <li>● Talk about their design ideas and what they are making</li> <li>● Make simple judgements about their products and ideas against design criteria</li> <li>● Suggest how their products could be improved</li> </ul>	<p><b>Across KS2 pupils should;</b></p> <ul style="list-style-type: none"> <li>● Identify the strengths and areas for development in their ideas and products</li> <li>● Consider the views of others, including intended users, to improve their work</li> </ul> <p><b>Y3/4</b></p> <ul style="list-style-type: none"> <li>● Refer to their design criteria as they design and make</li> <li>● Use their design criteria to evaluate their completed products</li> </ul> <p><b>Y5/6</b></p> <ul style="list-style-type: none"> <li>● Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</li> <li>● Evaluate their ideas and products against their original design specification</li> </ul>
<b>Existing products</b>	<p><b>Across KS1 pupils should explore;</b></p> <ul style="list-style-type: none"> <li>● What products are</li> <li>● Who products are for</li> <li>● What products are for</li> <li>● How products work</li> <li>● How products are used</li> <li>● Where products might be used</li> </ul>	<p><b>Across KS2 pupils should investigate and analyse;</b></p> <ul style="list-style-type: none"> <li>● How well products have been designed</li> <li>● How well products have been made</li> <li>● Why materials have been chosen</li> <li>● What methods of construction have been used</li> <li>● How well products work</li> <li>● How well products achieve their purposes</li> </ul>



	<ul style="list-style-type: none"> <li>• What materials products are made from</li> <li>• What they like and dislike about products</li> </ul>	<ul style="list-style-type: none"> <li>• How well products meet user needs and wants</li> </ul> <p><b>Y3/4</b></p> <ul style="list-style-type: none"> <li>• Who designed and made the products</li> <li>• Where products were designed and made</li> <li>• When products were designed and made</li> <li>• Whether products can be recycled or reused</li> </ul> <p><b>Y5/6</b></p> <ul style="list-style-type: none"> <li>• How much products cost to make</li> <li>• How innovative products are</li> <li>• How sustainable the materials in products are</li> <li>• What impact products have beyond their intended purposes</li> </ul>
<b>Key events and individuals</b>	<b>Not a requirement in KS1</b>	<p><b>Across KS2 pupils should know;</b></p> <ul style="list-style-type: none"> <li>• About inventors, designers, engineers, chiefs and manufacturers who have developed ground-breaking products</li> </ul>
<b>TECHNICAL KNOWLEDGE</b>	<b>KEY STAGE ONE</b>	<b>KEY STAGE TWO</b>
<b>Making products work</b>	<p><b>Across KS1 pupils should know;</b></p> <ul style="list-style-type: none"> <li>• About the simple working characteristics of materials and components</li> <li>• About the movement of simple mechanisms such as levers, sliders, wheels and axles</li> <li>• How freestanding structures can be made stronger, stiffer and more stable</li> <li>• That a 3D textiles product can be assembled from two identical fabric shapes</li> </ul>	<p><b>Across KS2 pupils should know;</b></p> <ul style="list-style-type: none"> <li>• How to use learning from science to help design and make products that work</li> <li>• How to use learning from mathematics to help design and make products that work</li> <li>• That materials have both functional properties and aesthetic qualities</li> <li>• That materials can be combined and mixed to create more useful characteristics</li> <li>• That mechanical and electrical systems have an input, process and output</li> </ul>



	<ul style="list-style-type: none"> <li>● That food ingredients should be combined according to their sensory characteristics</li> <li>● The correct technical vocabulary for the products they are undertaking</li> </ul>	<ul style="list-style-type: none"> <li>● The correct technical vocabulary for the projects they are undertaking</li> </ul> <p><b>Y3/4</b></p> <ul style="list-style-type: none"> <li>● How mechanical systems such as levers and linkages or pneumatic systems create movement</li> <li>● How simple electrical circuits and components can be used to create functional products</li> <li>● How to program a computer to control their products</li> <li>● How to make strong, stiff shell structures</li> <li>● That a single fabric shape can be used to make a 3D textiles product</li> <li>● That food ingredients can be fresh, pre-cooked and processed</li> </ul> <p><b>Y5/6</b></p> <ul style="list-style-type: none"> <li>● How mechanical systems such as cams or pulleys or gears create movement</li> <li>● How more complex electrical circuits and components can be used to create functional products</li> <li>● How to program a computer to monitor changes in the environment and control their products</li> <li>● How to reinforce and strengthen a 3D framework</li> <li>● That a 3D textiles product can be made from a combination of fabric shapes</li> <li>● That a recipe can be adapted by adding or substituting one or more ingredients</li> </ul>
<p><b>COOKING &amp; NUTTITION</b></p>	<p><b>KEY STAGE ONE</b></p>	<p><b>KEY STAGE TWO</b></p>
<p><b>Where food comes from</b></p>	<p><b>Across KS1 pupils should know;</b></p> <ul style="list-style-type: none"> <li>● That all food comes from plants or animals</li> <li>● That food has to be farmed, grown elsewhere (e.g home) or caught</li> </ul>	<p><b>Across KS2 pupils should know;</b></p> <ul style="list-style-type: none"> <li>● That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world</li> </ul>



		<p><b>Y5/6</b></p> <ul style="list-style-type: none"> <li>● That seasons may affect the food available</li> <li>● How food is processed into ingredients that can be eaten or used in cooking</li> </ul>
<p><b>Food preparation, cooking and nutrition</b></p>	<p><b>Across KS1 pupils should know;</b></p> <ul style="list-style-type: none"> <li>● How to name and sort foods into the five groups in The Eatwell plate</li> <li>● That everyone should eat at least 5 portions of fruit and vegetables every day</li> <li>● How to prepare simple dishes safely and hygienically, without using a heat source</li> <li>● How to use techniques such as cutting, peeling and grating</li> </ul>	<p><b>Across KS2 pupils should know;</b></p> <ul style="list-style-type: none"> <li>● How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>● How to use a range of techniques such as peeling, chopping, slicing, grating, mixing and spreading, kneading and baking</li> </ul> <p><b>Y3/4</b></p> <ul style="list-style-type: none"> <li>● That a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell plate</li> <li>● That to be active and healthy, food and drink are needed to provide energy for the body</li> </ul> <p><b>Y5/6</b></p> <ul style="list-style-type: none"> <li>● That recipes can be adapted to change the appearance, taste, texture and aroma</li> <li>● That different food and drink contain different substances – nutrients, water and fibre – that are needed for health</li> </ul>