



## Design and Technology Curriculum Sequence – Year 5

<p style="text-align: center;"><u>Honesty</u></p> <p>Learning to communicate with confidence Asking for help when necessary Giving criticism kindly</p>	<p style="text-align: center;"><u>Love</u></p> <p>Offering to help  Giving praise to self and others</p>	<p style="text-align: center;"><u>Forgiveness</u></p> <p>Being able to accept kind criticism Learn to be patient when sharing</p>	<p style="text-align: center;"><u>Respect</u></p> <p>Appreciating the efforts of others Looking after equipment, materials, the classroom environment, and each other's work</p>	<p style="text-align: center;"><u>Cultural Capital Opportunities</u></p> <p>Investigating products in the school environment, the locality and at home Learning about the impact of nutrition on health Learn about significant designers who have shaped the locality, the UK and the world, e.g. Edward Leader Williams, <b>Edward Leader Williams, Isambard Kingdom Brunel, Emily Warren Roebling</b> (civil engineers), Mary Quant, Stella McCartney (fashion designers)  Learning where food comes from  Learning to use unfamiliar equipment and materials</p>		
<p style="text-align: center;"><u>A Love Of Language</u></p> <p><u>Reading:</u> -reading technical and other key vocabulary -reading instructions -reading age appropriate information about designers and products -reading peers' writing</p> <p><u>Listening:</u> -listening to instructions -listening to video clips -listening to partners and team members</p> <p><u>Speaking:</u> -communicating with partners and team members -asking questions -using technical and other key vocabulary -describing and explaining ideas, decisions and opinions</p> <p><u>Writing:</u> -labelling drawings -writing technical and other key vocabulary -writing instructions -writing product evaluations</p>	<p style="text-align: center;"><u>Aspirations</u></p> <p>Identify the ways a product will meet the design criteria  Identify the positive effect the product will have on the intended user  Self-evaluate their use of equipment and skills and set their own targets for improvement  Aspire to become a designer, inventor, mechanical engineer, architect, chef  Aspire to use own creativity and practical skills to improve people's ways of life</p>	<p style="text-align: center;"><u>Bringing Learning To Life</u></p> <p>Evaluating a variety of existing products  Visits to the locality to investigate products  Practical use of a range of techniques and materials  Making products that function and are appealing</p>	<p style="text-align: center;"><u>Emotional Well-Being</u></p> <p>Learning to be supportive and cooperative  Being proud of what they have accomplished</p>	<p style="text-align: center;"><u>Resilience</u></p> <p>Being willing to take risks  Persevering with new techniques and equipment  Know that practise brings improvement</p>	<p style="text-align: center;"><u>Valuing Our Diversity</u></p> <p>Learning about foods from around the world  Finding out about and valuing people's preferences</p>	<p style="text-align: center;"><u>Respect and Responsibility</u></p> <p>Listening to safety instructions and using equipment with care  Looking after equipment, materials, the classroom / local environment and each other's work  Giving praise (to self as well as others)  Giving criticism kindly  Accept kind criticism  Asking for help when necessary  Offer to help  Learn to cooperate and be patient when sharing</p>

What will they learn?		In what order?			End points
Key Concepts	Key Skills	Autumn	Spring	Summer	
<p>Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.</p> <p>Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut out paper).</p> <p>Join textiles with a combination</p>	<p><b>CAD IN TEXTILES: Combining Different Textile Shapes Designing</b></p> <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 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> <p><b>Making</b></p> <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> <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>• 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</li> </ul>	<p><b>STRUCTURES: Frame Structures</b></p> <p><b>Bridges</b></p> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Know and use technical vocabulary relevant to the project: <b>frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, beam / arch / truss bridge, civil engineer, abutment, deck, supports, span</b></li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Investigate and evaluate a range of existing frame structures.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Investigate the history of frame structures such as towers and bridges.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Research key events and individuals relevant to frame structures, e.g. Edward Leader Williams, Isambard Kingdom Brunel, Emily Warren Roebling.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Understand how to</li> </ul>	<p><b>TEXTILES: Combining Textile Shapes</b></p> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Know and use technical vocabulary relevant to the project: <b>design brief, design criteria, design decisions, innovative, prototype, seam, seam allowance, wadding, reinforce, hem, template, pattern pieces, names of textiles and fastenings used, pins, needles, thread, fastenings, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype</b></li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Investigate and analyse textile products linked to their final product.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Know that a 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Know how fabrics can be strengthened, stiffened and reinforced.</li> </ul>	<p><b>COOKING AND NUTRITION</b></p> <p><b>Celebrating Culture and Seasonality Savoury Breads</b></p> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Know and use relevant technical and sensory vocabulary: <b>ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble, slice, chop, grate, dice, names of vegetables, design specification, innovative, research, evaluate, design brief</b></li> </ul> <p><b>Evaluating</b></p> <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.</li> </ul> <p><b>Technical knowledge and</b></p>	<p><b>Autumn:</b></p> <ul style="list-style-type: none"> <li>• Investigates and evaluates a range of existing frame structures.</li> <li>• Conducts research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.</li> <li>• Researches key events and individuals relevant to frame structures.</li> <li>• Uses a variety of techniques to strengthen, stiffen and reinforce 3-D frameworks.</li> <li>• Formulates a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.</li> <li>• Generates, develops and models innovative ideas, through discussion, prototypes and annotated sketches.</li> <li>• Competently selects from and uses appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.</li> <li>• Uses finishing and decorative techniques suitable for the product they are designing and making.</li> <li>• Knows and uses relevant technical vocabulary.</li> <li>• Critically evaluates their products against their design specification, intended user and purpose.</li> <li>• Identifies strengths and areas for development, carrying out appropriate tests.</li> </ul>

<p>of stitching techniques (such as back stitch for seams and running stitch to attach decoration).</p> <p>Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).</p> <p>Use innovative combinations of electronics (or computing) and</p>	<p>the design, manufacture, functionality and fitness for purpose.</p> <ul style="list-style-type: none"> <li>Consider the views of others to improve their work.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <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>Know and use technical vocabulary relevant to the project.</li> </ul> <p><b>FRAME STRUCTURES</b></p> <p><b>Designing</b></p> <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> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.</li> </ul>	<p>strengthen, stiffen and reinforce 3-D frameworks.</p> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Carry out research into user needs and existing products, using books and web-based resources.</li> </ul> <p><b>Designing</b></p> <ul style="list-style-type: none"> <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> </ul> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.</li> </ul> <p><b>Making</b></p> <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> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join</li> </ul>	<p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.</li> </ul> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</li> </ul> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Produce detailed lists of equipment and fabrics relevant to their tasks.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Select from and use a</li> </ul>	<p><b>understanding</b></p> <ul style="list-style-type: none"> <li>Know how to use utensils and equipment including heat sources to prepare and cook food.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Understand about seasonality in relation to food products and the source of different food products.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Understand how key chefs have influenced eating habits to promote varied and healthy diets, e.g. Nadiya Hussain.</li> </ul> <p>purpose.</p> <p><b>Designing</b></p> <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> </ul> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Explore a range of initial ideas and make design decisions to develop a final product linked to user and</li> </ul> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Use words, annotated sketches and information and communication</li> </ul>	<p><b>Spring:</b></p> <ul style="list-style-type: none"> <li>Investigates and analyses textile products linked to their final product.</li> <li>Generates innovative ideas by carrying out research including surveys, interviews and questionnaires.</li> <li>Knows and uses technical vocabulary relevant to the project.</li> <li>Strengthens, stiffens and reinforces fabrics</li> <li>Makes a 3-D textile product by accurately combining pattern pieces of different shapes and fabrics.</li> <li>Develops, models and communicates ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design.</li> <li>Designs purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</li> <li>Produces detailed lists of equipment and fabrics relevant to their tasks.</li> <li>Formulates step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>Selects from and uses 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> <li>Compares the final product to the original design specification.</li> <li>Tests products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>Considers the views of others to improve their work.</li> </ul>
---	---	---	--	--	---

<p>mechanics in product designs.</p> <p>Make products through stages of prototypes, making continual refinements.</p> <p>Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.</p>	<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> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Investigate and evaluate a range of existing frame structures.</li> <li>• Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.</li> <li>• Research key events and individuals relevant to frame structures.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• Understand how to strengthen, stiffen and reinforce 3-D frameworks.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul> <p><b><u>CELEBRATING CULTURE AND SEASONALITY</u></b></p> <p><b>Designing</b></p> <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> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Write a step-by-step recipe, including a list of ingredients,</li> </ul>	<p>construction materials to make frameworks.</p> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Use finishing and decorative techniques suitable for the product they are designing and making.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.</li> </ul>	<p>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.</p> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Compare the final product to the original design specification.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>• Consider the views of others to improve their work.</li> </ul>	<p>technology as appropriate to develop and communicate ideas.</p> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Write a step-by-step recipe, including a list of ingredients, equipment and utensils</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> </ul> <p><b>Making</b></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>• 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> </ul>	<p><b>Summer:</b> Evaluates the sensory qualities of existing products and ingredients.</p> <p>Understands the influence and effects of key designers. Knows where and how foods are grown and processed.</p> <p>Uses utensils, equipment and heat sources to prepare and bake foods.</p> <p>Develops design specifications.</p> <p>Makes design decisions to develop a final product linked to user and purpose.</p> <p>Writes a step-by-step recipe, including a list of ingredients, equipment and utensils.</p> <p>Uses writing, ICT, tables and cross-sectional diagrams to record ideas.</p> <p>Selects and accurately uses utensils and equipment to measure and combine ingredients.</p> <p>Makes and presents the food product appropriately for the intended user and purpose. Knows and uses relevant technical and sensory vocabulary.</p> <p>Evaluates the final product against the design brief and specification, taking into account the views of others when identifying improvements.</p>
---	--	--	---	---	--

	<p>equipment and utensils</p> <ul style="list-style-type: none"><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></ul> <p><b>Evaluating</b></p> <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 and understanding</b></p> <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>				
--	--	--	--	--	--