



Design and Technology Curriculum Sequence – Year 4

<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. Ada Lovelace, Alan Turing (pioneers in electronics), Heribert Bauer, Myra Juliet Farrell (press studs), and George de Mestral (Velcro). 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 be patient when sharing</p>

What will they learn?		In what order?			End points
Key Concepts	Key Skills	Autumn 1	Spring 1	Summer 1	
<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 of stitching</p>	<p>TEXTILES:</p> <p><u>2D SHAPE TO 3D PRODUCT</u></p> <p>Designing</p> <ul style="list-style-type: none"> • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Produce annotated sketches, prototypes, final product sketches and pattern pieces. <p>Making</p> <ul style="list-style-type: none"> • Plan the main stages of making. • Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. • Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate a range of 3-D textile products relevant to the project. • Investigate the work of designers such as Heribert Bauer and George de Mestral. • Test their product against the original design criteria and with the intended user. • Take into account others' views. • Understand how a key event/individual has influenced the development of the chosen product and/or fabric. 	<p><u>Monitoring and Control : USING CIRCUITS AND SWITCHES</u></p> <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know and use technical vocabulary relevant to the project: <i>simple circuit, series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, light emitting diode (LED), bulb, bulb holder, USB cable, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device, process,</i> 	<p>TEXTILES:</p> <p><u>2D SHAPE TO 3D PRODUCT</u></p> <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know and use technical vocabulary relevant to the project: <i>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces</i> 	<p>COOKING and NUTRITION: <u>HEALTHY AND VARIED DIET Savoury Wraps</u></p> <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know and use relevant technical and sensory vocabulary appropriately: <i>name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet, planning, design criteria, purpose, user, annotated sketch, sensory evaluations</i> <p>Evaluating</p> <ul style="list-style-type: none"> • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. <p>Evaluating</p>	<p>Autumn:</p> <ul style="list-style-type: none"> • Investigates and analyses a range of existing battery-powered products, including pre-programmed and programmable products. • Gathers information to develop design criteria that informs the design of products that are fit for purpose and aimed at particular individuals or groups. • Programs a microcontroller to enhance the way the product works. • Connect simple electrical components and a battery in a series circuit to achieve a functional outcome. • Generates, develops, models and communicates realistic ideas through discussion, annotated sketches, cross-sectional and exploded diagrams. • Orders the main stages of making. • Understands and uses computing to program and control products containing electrical systems, such as series circuits incorporating switches, bulbs and buzzers. • Selects from and uses tools and equipment to cut, shape, join and finish with some accuracy. • Knows and uses technical vocabulary relevant to the project. • Evaluates their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.

<p>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 mechanics in product designs.</p> <p>Make products through stages of prototypes,</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know how to strengthen, stiffen and reinforce existing fabrics. • Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. • Know and use technical vocabulary relevant to the project. <p>Monitoring and Control: CIRCUITS AND SWITCHES</p> <p>Designing</p> <ul style="list-style-type: none"> • Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. <p>Making</p> <ul style="list-style-type: none"> • Order the main stages of making. • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Connect simple electrical components and a battery in a series circuit to achieve a functional outcome. • Program a standalone control box, microcontroller or interface box to enhance the way the product works. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate and analyse a range of existing battery-powered products, including pre-programmed and programmable products. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. 	<p>user, purpose, function, prototype, design criteria, innovative, appealing, design brief</p> <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate and analyse a range of existing battery-powered products, including pre-programmed and programmable products. <p>Designing</p> <ul style="list-style-type: none"> • Gather information about the needs and wants of the user, and develop design criteria to inform the design of products that are fit for purpose and aimed at particular individuals or groups. <p>Designing</p> <ul style="list-style-type: none"> • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. <p>Making</p> <ul style="list-style-type: none"> • Order the main stages of making. <p>Making</p>	<p>Evaluating</p> <ul style="list-style-type: none"> • Investigate a range of 3-D textile products relevant to the project. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know how to strengthen, stiffen and reinforce existing fabrics. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand how to securely join two pieces of fabric together. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand the need for patterns and seam allowances. <p>Evaluating</p> <ul style="list-style-type: none"> • Understand how a key event/individual has influenced the development of the chosen product and/or fabric e.g. Heribert Bauer (press studs), George de Mestral (Velcro) <p>Designing</p> <ul style="list-style-type: none"> • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. <p>Making</p> <ul style="list-style-type: none"> • Plan the main 	<ul style="list-style-type: none"> • Investigate the development of savoury wraps, including Bobby Valentine. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know how to use appropriate equipment and utensils to prepare and combine food. <p>Designing</p> <ul style="list-style-type: none"> • 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. <p>Designing</p> <ul style="list-style-type: none"> • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> • Plan the main stages of a recipe, listing ingredients, utensils and equipment. <p>Making</p> <ul style="list-style-type: none"> • Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. <p>Making</p> <ul style="list-style-type: none"> • Select and use appropriate utensils and equipment to prepare and combine ingredients. <p>Evaluating</p>	<p>Spring:</p> <ul style="list-style-type: none"> • Investigates a range of 3-D textile products relevant to the project. • Knows and uses technical vocabulary. <ul style="list-style-type: none"> • Knows how to strengthen, stiffen and reinforce existing fabrics relevant to the project. • Understands how a key event/individual has influenced the development of the chosen product and/or fabric. • Generates realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Produces annotated sketches, prototypes, final product sketches and pattern pieces. • Plans the main stages of making. • Understands how to securely join two pieces of fabric together. • Understands the need for patterns and seam allowances. • Selects and uses a range of appropriate tools to cut, join and finish with some accuracy. • Selects fabrics and fastenings according to their functional characteristics (e.g. strength) and aesthetic qualities (e.g. pattern). • Tests their product against the original design criteria and with the intended user. • Takes into account others' views. <p>Summer:</p> <ul style="list-style-type: none"> • Investigates a range of 3-D textile products relevant to the project. • Knows and uses technical vocabulary. <ul style="list-style-type: none"> • Knows how to strengthen, stiffen and reinforce existing fabrics relevant to the project. • Understands how a key event/individual has influenced the development of the chosen product and/or fabric.
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<p>making continual refinements.</p> <p>Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.</p> <p>Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Understand and use computing to program and control products containing electrical systems, such as series circuits incorporating switches, bulbs and buzzers. Know and use technical vocabulary relevant to the project <p><u>HEALTHY AND VARIED DIET</u></p> <p>Designing</p> <ul style="list-style-type: none"> Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Know how to use appropriate equipment and utensils to prepare and combine food. Know about a range of fresh and processed 	<ul style="list-style-type: none"> Connect simple electrical components and a battery in a series circuit to achieve a functional outcome. <p>Making</p> <ul style="list-style-type: none"> Select from and use tools and equipment to cut, shape, join and finish with some accuracy. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Understand and use computing to program and control products containing electrical systems, such as series circuits incorporating switches, bulbs and buzzers. <p>Making</p> <ul style="list-style-type: none"> Program a microcontroller to enhance the way the product works. <p>Evaluating</p> <ul style="list-style-type: none"> Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. 	<p>stages of making.</p> <p>Designing</p> <ul style="list-style-type: none"> Produce annotated sketches, prototypes, final product sketches and pattern pieces. <p>Making</p> <ul style="list-style-type: none"> Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. <p>Making</p> <ul style="list-style-type: none"> Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. <p>Evaluating</p> <ul style="list-style-type: none"> Test their product against the original design criteria and with the intended user. <p>Evaluating</p> <ul style="list-style-type: none"> Take into account others' views. 	<ul style="list-style-type: none"> Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. 	<ul style="list-style-type: none"> Generates realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. Produces annotated sketches, prototypes, final product sketches and pattern pieces. Plans the main stages of making. Understands how to securely join two pieces of fabric together. Understands the need for patterns and seam allowances. Selects and uses a range of appropriate tools to cut, join and finish with some accuracy. Selects fabrics and fastenings according to their functional characteristics (e.g. strength) and aesthetic qualities (e.g. pattern). Tests their product against the original design criteria and with the intended user. Takes into account others' views.
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ingredients appropriate for their product,
and
whether they are grown, reared or caught.

- Know and use relevant technical and sensory vocabulary appropriately.

