



## Design Technology Subject Overview

Year 6	National Curriculum Objectives	Skills	Key Questions	Suggested Learning Experiences	Vocabulary (Tier 2/3)
<p><b>Autumn</b></p> <p><b>World at War: World War I and World War II and The Battle of Britain</b></p> <p><b>Food Technology</b></p> <p><b>Using war time rationing, design and make a meal for an afternoon tea dance.</b></p>	<p>Understand and apply the principles of a healthy and varied diet.</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p> <p>Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.</p> <p>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</p> <p>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing],</p>	<p>Use cooking tools safely and accurately.</p> <p>Comparing what was done in WW2 to how things have changed and/or remained the same to the modern day.</p> <p>How amounts of ingredients can or need to be changed depending on number of people attending.</p>	<p>Can you plan a meal for an afternoon tea dance using war time rationing?</p> <p>What ingredients will be available to you?</p> <p>How will you measure them out? What are the different types of equipment?</p> <p>What units are you going to use?</p> <p>How will you ensure you stay in your budget?</p> <p>If you were going to expand your tea party and cook for 1,000/10,000/100,000 people, what would you have to do to your ingredients?</p>	<p>1). Remind children of previous learning. In Year 5 they made Islamic bread in their food topic. In Year 4, they made a chocolate bar in their food topic. What skills were important when making those products? What did you have to do before you could begin making your product? Explore what people ate for afternoon tea before the 2<sup>nd</sup> world war and today. Look at what is on offer for afternoon tea today. How does it compare to pre-WW2? Do you understand the reasons why WW2 tea parties had the amounts they did? Link to rationing booklet.</p> <p>2). Examine war time rationing booklet. Would making afternoon tea be difficult with these restrictions? How could you get creative with your designs and ideas?</p> <p>Work in groups to plan afternoon tea using only what was available through war time rationing. They need to plan the meal for xxx people and work out the amounts and costing. Give pupils a budget to try and work to. Use budget forms.</p>	<p>Tier 2 Restrictions Available modifications</p> <p>Tier 3 Rationing Budget</p>

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	<p>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>investigate and analyse a range of existing products</p> <p>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p>			<p>3). Children draw images of what their food is going to look like when they have cooked it. Exploded diagrams should be used and children annotate the different ingredients that will be contained within the food where appropriate. Drawn an image of what their table will look like and where foods will be placed.</p> <p>4). Imagine your tea party can be expanded or has to be decreased (link to Covid-19 restrictions) Children have to increase their ingredients multiplying by 10/100/1,000 and also decrease their ingredients dividing by 10/100/1,000. What would their recipes now look like? (link to maths objectives as they need to know how to multiply and divide by 10/100/1,000</p> <p>5). Get the pupils to identify themselves the new skills they need to learn. Plan cooking skills lessons accordingly. Produce step by step plan of how they are going to make their meal (recipe) and the instruments they are also going to need. Identify roles and responsibilities in the group. Children should have finalised recipe cards.</p>	
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<p><b>Spring and Summer</b></p> <p><b>Birmingham: Evolution and development of Birmingham Legacies: Legacies of eras and significant individuals</b></p> <p><b>Structures and Mechanisms</b></p> <p><b>Build a model of the Birmingham library with wooden support structures, lights and motors</b></p>	<p>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</p> <p>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>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>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>Research electricity and the most effective ways it can be used.</p> <p>How to use electricity wires in a safe environment for themselves and others.</p> <p>Using electrical products in conjunction with others to create an effective and final product to a high standard.</p> <p>Research how to use wood to support and stiffen structures and how this can apply to the product we are making.</p> <p>Use glue guns to stick wood to stiffen structures.</p> <p>Saw wood and cut cardboard to appropriate lengths.</p> <p>Use saw and glue guns in a safe environment.</p> <p>Compare wood joins and evaluate which is going to be the best/most appropriate.</p>	<p>Use what you have learnt about electricity to produce a scaled model.</p> <p>How tall will your final product be? What units of measure are you going to use?</p> <p>What will your 2d features be?</p> <p>What will your 3d features be? How will you ensure they are effective in a 3d drawing/design?</p> <p>How can you use wood, electric and a motor in conjunction to make a final product that looks good and works in conjunction with each other?</p>	<p>1). Show children a finished product of what they are going to make. Explain that there will be wood to stiffen/support their structure, lights used and a motor to make something move. The wood to support and motor will link to construction and mechanisms work done in Year5 when they made a crane and electricity using light in Year 4 when they made a light box. What skills were important when making those products? What did you have to do before you could begin making your product?</p> <p>2). Research what Birmingham Library looks like and why it was designed that way. Teachers to create a comprehension for children to complete about the history of where it originally was and when it was re-built.</p> <p>3). Children design what the front of the Birmingham library will look like. Give them freedom to design and choose the materials, ensuring they label them on the design. Children should be able to explain their choices of materials and why they think it is an appropriate choice.</p> <p>4). Children will draw an exploded diagram of the Birmingham library. Again, give children the</p>	<p>Tier 2</p> <p>Wire</p> <p>Lighting</p> <p>Modifications</p> <p>Structure</p> <p>Support</p> <p>Motor</p> <p>Tier 3</p> <p>Current</p> <p>Dimension</p> <p>Block</p> <p>Cube</p> <p>Cuboid</p>
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	<p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p> <p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p>	<p>Use spray paint safely.</p> <p>Research how motors can be used to move/turn part of a product.</p> <p>How can a motor be used safely alongside electrical wires, lights and where wood has been installed in the product?</p> <p>Design, analyse and evaluate where the motor would be best used and what part of the product would turn to give the most effective finish.</p>		<p>choice of what they think will be the best materials/products to use. This will clearly detail the motor, wires and wood. Children should label these and then be able to explain both in writing and verbally where the wires have stuck and why? How are the wires being fixed down to the inside of their product? Where the wood is being used to support the structure? How is it supporting the structure? Where will the motor be positioned? Why? What will it turn?</p> <p>5). Show children the list of materials they will use and ask them to re-design their Birmingham library as appropriate. Tell children a maximum and minimum height and width of their library. Teachers can choose if the 2d design or the exploded diagram should be edited. Children should also consider how their shoe boxes will be stuck together.</p> <p>6). Children begin to make their product. Cut wood and using glue guns, stick the wood inside the shoe boxes to support the structure. Stick the shoe boxes together using glue guns.</p>	
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	<p>Apply their understanding of computing to program, monitor and control their products</p>			<p>7). Make sure the wood has set and is fixed. Cover the boxes with paper. Using stencils, spray paint the Birmingham library with their desired colours and patterns.</p> <p>8). Add the wires with the lights and ensure they are stuck down safely.</p> <p>9). Include a motor with a moving part. Teachers to decide if this goes on the top or the front of the library. Ensure this is secured to the structure effectively and doesn't ruin or look out of place on the structure.</p>	
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