

Year 3	Year 4	Year 5	Year 6
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Year 3	Autumn	Spring	Summer
<b>Theme</b>	<b>Autumn</b> Scrumdiddlyumptious Tribal tales	<b>Spring</b> Ancient Egypt	<b>Summer</b> Predators Gods and Mortals
<b>Prior Knowledge</b>	<p><b>Key stage 1</b></p> <p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to:</p> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>-design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>-generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>-select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>-select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>-explore and evaluate a range of existing products</li> <li>-evaluate their ideas and products against design criteria</li> </ul> <p><b>Technical knowledge</b></p> <ul style="list-style-type: none"> <li>-build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>-explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul>		
<b>Progression Statements</b>	<ul style="list-style-type: none"> <li>• Can I describe materials using a range of key vocabulary?</li> <li>• Can I work out how to make models stronger?</li> <li>• Can I use what I know about the properties of materials to plan ideas?</li> </ul>	<ul style="list-style-type: none"> <li>• Can I assess prior knowledge of mechanical systems?</li> <li>• Can I recall and share ideas about components (levers, linkages, pneumatic systems)?</li> <li>• Can I explain how pneumatic systems work?</li> </ul>	<ul style="list-style-type: none"> <li>• Can I understand and apply the principles of a healthy and varied diet?</li> <li>• Can I describe seasonality, and know where and how a variety of ingredients are grown and processed?</li> <li>• Can I use digital devices to research what initiatives have been launched to</li> </ul>

	<ul style="list-style-type: none"> <li>• Can I use scoring and folding for precision?</li> <li>• Can I prepare for work by assembling components together before joining?</li> <li>• Can I measure, cut and assemble with increasing accuracy?</li> <li>• Can I use a range of techniques to shape and mould materials?</li> <li>• Can I alter and adapt materials to make them stronger?</li> <li>• Can I recognise what has gone well, but suggest further improvements for the finished article in relation to its purpose?</li> </ul>	<ul style="list-style-type: none"> <li>• Can I identify and describe components (levers, linkages, pneumatic systems)?</li> <li>• Can I recognize how these components create motion?</li> <li>• Can I interpret a design brief?</li> <li>• Can I develop design criteria based on the brief?</li> <li>• Can I generate ideas for a product using pneumatic systems?</li> <li>• Can I create annotated sketches or diagrams for the design?</li> <li>• Can I assemble a pneumatic system to achieve a specific motion?</li> <li>• Can I apply practical skills to build a toy using pneumatic components?</li> <li>• Can I use tools and materials safely and effectively?</li> <li>• Can I test the product against design criteria?</li> <li>• Can I manipulate materials (cutting, creasing, folding, weaving) to refine the design?</li> <li>• Can I adjust the design for functionality and aesthetics?</li> <li>• Can I reflect on the effectiveness of the product?</li> <li>• Can I identify strengths and weaknesses of the design?</li> <li>• Can I suggest realistic changes to improve performance or appearance?</li> </ul>	<p>address environmental issues caused by importing food?</p> <ul style="list-style-type: none"> <li>• Can I begin to select my own ingredients when cooking or baking?</li> <li>• Can I begin to order the main stages of making a product?</li> <li>• Can I combine several components together in different ways?</li> <li>• Can I weigh in grams?</li> <li>• Can I present food in an appealing way?</li> <li>• Do I understand safe food storage?</li> <li>• Am I willing to make changes if this helps to improve my work?</li> </ul>
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<h2 style="margin: 0;">Sequence of lessons</h2>	<p><b>Structures</b></p> <p>Starter – Brainstorm to assess prior knowledge</p> <p>L1) LI: To recognise how multiple shapes (2D and 3D) are combined to form a strong and stable structure.  <i>Can I identify different features of a temple? Can I design my own Stone Age temple? Can I label the features of my temple?</i></p> <p>L2) LI: To design a Stone Age structure.  <i>Can I add two design points to the Design Specification to appeal to the person/purpose of my structure? Can I draw the design of my structure using 2D shapes, labelling: the 3D shapes that will create the features, materials I need</i></p> <p>L3) LI: To construct 3D nets.  <i>Can I identify that a net is what a 3D shape would look like if it were opened out flat? Can I construct a range of 3D geometric shapes using a net by: cutting along the bold lines, folding along the dotted lines, keeping the tabs the correct size, making crisp folded edges and constructing the net using glue to make a geometric shape?</i></p> <p>L4) LI: To construct and evaluate my final product.</p>	<p><b>Mechanical Systems</b></p> <p>Starter – Brainstorm to assess prior knowledge</p> <p>L1) LI: To understand how pneumatic systems work.  <i>Can I use a range of components (e.g. levers, linkages and pneumatic systems)?</i></p> <p>L2) LI: To design a toy which uses a pneumatic system.  <i>Can I develop a design criteria from a design brief? Can I design a product using a pneumatic system?</i></p> <p>L3) LI: To create a pneumatic system.  <i>Can I create a pneumatic system to create a desired motion? Can I build a toy using a pneumatic system?</i></p> <p>L4) LI: To test and finalise ideas against the design criteria.  <i>Can I manipulate materials to create effects by cutting, creasing, folding and weaving?</i></p> <p>L5) LI: To evaluate my product and suggest changes.  <i>Can I explain how I could change my design to improve it?</i></p>	<p><b>Food Technology</b></p> <p>Starter – Brainstorm to assess prior knowledge</p> <p>L1) LI: To understand that climate affects food growth.  <i>Can I describe seasonality, and know where and how a variety of ingredients are grown and processed?</i></p> <p>L2) LI: To understand that importing food impacts the environment and find solutions for this problem.  <i>Can I use digital devices to research what initiatives have been launched to address environmental issues caused by importing food?</i></p> <p>L3) LI: To create a recipe that is healthy and nutritious using vegetables and fruit.  <i>Can I begin to select my own ingredients when cooking or baking? Can I begin to order the main stages of making a product? Can I design a puff pastry tart using seasonal vegetables and fruits?</i></p> <p>L4) LI: To safely follow a recipe when cooking.  <i>Can I combine several components together in different ways? Can I weigh in grams? Can I use, store and clean a knife safely?</i></p>
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	<p>Can I construct my structure to meet the requirements of my brief by: making neat 3D shapes using nets, stacking shapes and recyclable materials to make the structures of my castle, creating a sturdy base to secure my structures, adorn my structure with facades</p> <p>L5) LI: To critique my product against the design criteria and suggest changes.</p> <p>Can I recognise what has gone well, but suggest further improvements for the finished article in relation to its purpose?</p>		
<p><b>Key Vocab</b></p>	<p><b>Structures</b> 2D shapes, 3D shapes, castle, design criteria, evaluate, faced, feature, flag, net, recyclable, scoring, stable, strong, structure, tab, weak.</p>	<p><b>Mechanical Systems</b> Exploded-diagram, function, input, lever, linkage, mechanism, motion, net, output, pivot, pneumatic system, thumbnail sketch.</p>	<p><b>Food Technology</b> Arid, climate, complementary, country, export, import, Africa, peel, polar, seasonal, seasons, snip, temperate, texture, weather.</p>

<h2 style="margin: 0;">Challenge</h2>	<p><b><u>Autumn 1:</u></b>  <b><u>Lesson 1:</u></b>                  Can I explain why a <i>temple</i> needs to be strong and stable?  <b><u>Lesson 2:</u></b>                  What colours will I use and why?    <b><u>Lesson 3:</u></b>                  Can I create my own 3d net? What does it need?    <b><u>Lesson 4:</u></b>                  Add other decorative features    <b><u>Lesson 5</u></b>                  Evaluate your peers work</p>	<p><b><u>Spring 1:</u></b>  <b><u>Lesson 1:</u></b>                  Which system do you prefer and why?    <b><u>Lesson 2:</u></b>                  Design a toy with a different system    <b><u>Lesson 3:</u></b>                  Describe what you need to make the toy structure secure    <b><u>Lesson 4:</u></b>                  Why are materials selected due to their functional and aesthetic characteristics?    <b><u>Lesson 5</u></b>                  Evaluate your peers work. What would you keep? What would you improve?</p>	<p><b><u>Summer 1:</u></b>  <b><u>Lesson 1:</u></b>                  Which food products are seasonal now in the UK?  <b><u>Lesson 2:</u></b>                  Where does the UK import food from compared to Africa?  <b><u>Lesson 3:</u></b>                  Now Choose fruit and vegetables grown in Africa</p>
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<h2>Suggested outcomes</h2>	<p><b>Autumn 1:</b>  <b>Lesson 1:</b>                      To design and label a stone age temple</p> <p><b>Lesson 2:</b>                      To draw a 2d structure and label it with 3 d features</p> <p><b>Lesson 3:</b>                      To construct a range of 3d nets</p> <p><b>Lesson 4:</b>                      To create a 3d temple using nets</p> <p><b>Lesson 5:</b>                      To evaluate my product</p>	<p><b>Spring 1:</b>  <b>Lesson 1:</b>                      Record how mechanical systems work</p> <p><b>Lesson 2:</b>                      Sketch a design of a toy using a pneumatic system</p> <p><b>Lesson 3:</b>                      Create a secure model</p> <p><b>Lesson 4:</b>                      Add features and pneumatic system</p> <p><b>Lesson 5:</b>                      Evaluate how to improve your product</p>	<p><b>Summer 1:</b>  <b>Lesson 1:</b>                      To create a factfile on food seasonality and where it is grown</p> <p><b>Lesson 2:</b>                      To research the impact of importing food on the environment</p> <p><b>Lesson 3:</b>                      To create a healthy recipe</p> <p><b>Lesson 4:</b>                      To follow a recipe to create a vegetable tart or fruit salad</p>
			
			

Year 4	Autumn	Spring	Summer
<p><b>Theme</b></p>	<p><b>Mayan Civilisation</b></p> <p><b>Digital world</b></p>	<p><b>Potions</b></p> <p><b>Textiles</b></p>	<p><b>Blue Abyss</b></p> <p><b>Electrical systems</b></p>
<p><b>Prior Knowledge</b></p>	<p><b>Digital World</b></p> <p>-Designed purposeful, functional, and appealing products for themselves and other users based on design criteria.</p> <p>-Generated, developed, modelled, and communicated their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p>	<p><b>Textiles</b></p> <p>-Designed purposeful, functional, and appealing products for themselves and other users based on design criteria.</p> <p>-Generated, developed, modelled, and communicated their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p> <p>-Selected from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p> <p>-Selected from and use a wide range of materials and components, including construction</p>	<p><b>Electrical Systems</b></p>

		<p>materials, textiles and ingredients, according to their characteristics</p> <ul style="list-style-type: none"> <li>-Explored and evaluate a range of existing products</li> <li>-Evaluated their ideas and products against design criteria</li> </ul>	
<p><b>Progression Statements</b></p>	<ul style="list-style-type: none"> <li>• Activating and applying prior knowledge</li> <li>• Brainstorming and sharing ideas collaboratively</li> <li>• Using subject-specific vocabulary related to design and technology</li> <li>• Exploring and comparing different CAD programs</li> <li>• Understanding and using key features of CAD software</li> <li>• Working effectively with a learning partner</li> <li>• Analysing existing products for strengths, weaknesses, and user needs</li> <li>• Creating clear and purposeful design criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying and comparing a range of fastenings</li> <li>• Explaining advantages and disadvantages of different fastenings</li> <li>• Evaluating products based on functionality and suitability</li> <li>• Developing design ideas through self-reflection</li> <li>• Using peer feedback to refine and improve designs</li> <li>• Creating designs that meet a set design criteria</li> <li>• Devising and creating templates or patterns for textile products</li> <li>• Measuring, marking, cutting, and assembling materials accurately</li> <li>• Developing a final design based on initial concepts and existing examples</li> <li>• Using sewing techniques to join fabric materials</li> <li>• Using both permanent and temporary fastenings effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding how electrical items work</li> <li>• Considering user needs and the intended purpose when planning a product</li> <li>• Analysing and evaluating electrical products</li> <li>• Understanding material properties (e.g., waterproofing) and how they influence design</li> <li>• Drawing annotated sketches to communicate design ideas clearly</li> <li>• Designing a functional light source or lighthouse</li> <li>• Building and using a simple electrical circuit</li> <li>• Adding components to a circuit (e.g., bulbs, switches, motors)</li> <li>• Safely selecting and using appropriate tools and equipment</li> </ul>

	<ul style="list-style-type: none"> <li>• Understanding how products must meet functional and aesthetic requirements</li> <li>• Explaining the purpose and role of a prototype</li> <li>• Designing, making, and developing a 3D prototype</li> <li>• Constructing structures using 3D nets</li> <li>• Applying spatial awareness and practical making skills</li> <li>• Using computer-aided design to create graphics (e.g., logos)</li> <li>• Manipulating shapes, colours, and clipart in a digital design tool</li> <li>• Understanding branding and the importance of logos in business</li> <li>• Following a design brief or design requirements</li> <li>• Testing and evaluating a finished product</li> <li>• Identifying strengths and areas for improvement</li> <li>• Suggesting improvements linked to the product's purpose</li> </ul>	<ul style="list-style-type: none"> <li>• Assembling a textile product following a planned design</li> <li>• Testing and evaluating the final product against the design criteria</li> <li>• Giving and receiving constructive peer feedback</li> <li>• Evaluating the work of others using design specifications</li> <li>• Reflecting on improvements and adapting designs based on testing</li> </ul>	<ul style="list-style-type: none"> <li>• Incorporating electricity to create light or motion</li> <li>• Creating a product following a planned design</li> <li>• Testing and evaluating a finished product</li> <li>• Identifying strengths and areas for improvement</li> <li>• Suggesting purposeful improvements based on a product's intended use</li> <li>• Developing reflective and critical thinking skills</li> </ul>
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	<ul style="list-style-type: none"> <li>Developing reflective and critical thinking skills</li> </ul>		
<p><b>Sequence of lessons</b></p>	<p><b>Digital World</b></p> <p>L1) LI: To explore a range of CAD programs. To explore the features of CAD programs with a learning partner?</p> <p>L2) LI: Create a design criteria for an electronic timer based on analysis of existing products. Explore how designs must meet a range of criteria</p> <p>L3) LI: To design, make and develop a prototype case for a timer. Can I explain the role of a prototype?</p>	<p><b>Textiles</b></p> <p>L1) LI: To identify and evaluate a range of fastenings. Can I explain the advantages and disadvantages of each fastening?</p> <p>L2) LI: To design a potion holder to meet a design criteria. Can I develop designs through my own reflection and the evaluation of others?</p> <p>L3) LI: To make and test a paper template. Can I devise a template or pattern for a product? Can I measure, cut and assemble with accuracy?</p>	<p><b>Electrical Systems</b></p> <p>L1) LI: To understand how electrical items work. Can I consider the way the product will be used when planning?</p> <p>L2) LI: To analyse and evaluate electrical products. Do I understand how some properties can be used – e.g. waterproof?</p> <p>L3) LI: To design a lighthouse/source of light. Can I draw an annotated sketch of my design?</p> <p>L4) LI: To create and evaluate a lighthouse/light source.</p>

	<p>Can I construct a structure using a 3D net?</p> <p>L4) LI: To design a logo for a mindfulness company using computer. Can I use and manipulate shapes and clipart, using computer-aided design, to produce a logo? Can I understand what a logo is and why they are important in the world of design and business? Can I follow a list of design requirements?</p> <p>L5) LI: To test and evaluate my product. Can I recognise what has gone well, but suggest further improvements for the finished article in relation to its purpose?</p>	<p>Can I create a final design for a product based on initial ideas and revisions, based on existing ideas?</p> <p>L4) LI: To assemble my product. Can I join my fabric by sewing? Can I use permanent and temporary fastenings to join?</p> <p>L5) LI: To evaluate and assess my product against the design criteria. Can I improve my product using peer feedback?</p> <p>Can I evaluate others' designs against design specifications?</p>	<p>Can I use a simple circuit and add components to it? Can I select and use appropriate equipment and tools accurately and safely? Can I add electricity to create motion or make light?</p> <p>L5) LI: To critique my design and suggest improvements. Can I recognise what has gone well, but suggest further improvements for the finished article in relation to its purpose?</p>
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<p><b>Key Vocab</b></p>	<p><b>Digital World</b>                  Advantage, annotate, assemble, aesthetic, block, brand identity, brand, bug, cheap, clipart, coding, computer-aided design (CAD), criteria, debug, design, develop, disadvantage, ergonomic, evaluate, form, function, instructions, join, logo, loop, mindfulness, model, net, pause, process, program, prototype, research, sketchpad, template, test, timer, user, variable.VV</p>	<p><b>Textiles</b>                  Aesthetic, assemble, book sleeve, design criteria, evaluation, fabric, fastening, mock-up, net, running-stitch, stencil, target audience, target customer, template.</p>	<p><b>Electrical Systems</b>                  Battery, bulb, buzzer, cell, component, conductor, copper, design criteria, electrical item, electricity, electronic item, function, insulator, series circuit, switch, test, torch, wire.</p>
<p><b>Challenge</b></p>	<p><b>Autumn</b>  <b>Lesson 1:</b>                  Which fastening is the most secure and why?  <b>Lesson 2:</b>                  Which features is the most important and why?  <b>Lesson 3:</b>                  How could you adapt it for a larger/smaller timer?  <b>Lesson 4:</b>                  Can you add more detail to your logo?  <b>Lesson 5</b>                  How could you improve your design?</p>	<p><b>Spring</b>  <b>Lesson 1:</b>                  Which fastening is the most secure and why?  <b>Lesson 2:</b>                  Annotate your design  <b>Lesson 3:</b>                  Self assess your design. How could you improve it?  <b>Lesson 4:</b>                  Can you join with a greater range of techniques (e.g. staples)?  <b>Lesson 5</b>                  How could you improve your design?</p>	<p><b>Summer</b>  <b>Lesson 1:</b>                  Can you think of any other products that work this way?  <b>Lesson 2:</b>                  Why are these features used?  <b>Lesson 3:</b>                  Add pattern and colour to your design  <b>Lesson 4:</b>                  How could you make a product which uses both electrical and mechanical components?</p>

<p><b>Suggested outcomes</b></p>	<p><b><u>Autumn</u></b>  <b><u>Lesson 1:</u></b>                  To research different CAD programs and record findings  <b><u>Lesson 2:</u></b>                  Explore different electronic timers and what design features they need    <b><u>Lesson 3:</u></b>                  To design and make a prototype case for a timer  <b><u>Lesson 4:</u></b>                  Use a computer to design a mindful logo for your case    <b><u>Lesson 5</u></b>                  To evaluate the product</p>	<p><b><u>Spring 1:</u></b>  <b><u>Lesson 1:</u></b>                  To create a fact file on different fastenings  <b><u>Lesson 2:</u></b>                  To design a potion holder    <b><u>Lesson 3:</u></b>                  To create a paper template    <b><u>Lesson 4:</u></b>                  To use sewing techniques to secure a potion holder    <b><u>Lesson 5</u></b>                  To peer assess the product</p>	<p><b><u>Summer 1:</u></b>  <b><u>Lesson 1:</u></b>                  To answer questions about simple circuits and how they work  <b><u>Lesson 2:</u></b>                  To research how different properties can be added to electrical items    <b><u>Lesson 3:</u></b>                  To design an annotated sketch of a lighthouse  <b><u>Lesson 4:</u></b>                  To create an electrical circuit to power a light bulb</p>

	 <p>Mindful moments</p>		 <p>www.kififestevendula.blogspot.com</p> <p>@moonshotkidz</p>
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Year 5	Autumn	Spring	Summer
<b>Theme</b>	<p><b>Autumn</b></p> <p><b>Stargazer</b></p> <p>To explore different bridge structures then design and create a truss bridge</p>	<p><b>Spring</b></p> <p><b>The Tudors</b></p> <p>To explore traditional recipes and create new ones that cater for a healthy, balanced diet with seasonal vegetables</p>	<p><b>Summer</b></p> <p><b>The Victorians</b></p> <p>To design and create a pop-up book</p>
<b>Prior Knowledge</b>	<p><b>Structures</b></p> <ul style="list-style-type: none"> <li>• I described materials using a range of key vocabulary.</li> <li>• I worked out how to make models stronger.</li> <li>• I used what I knew about the properties of materials to plan ideas.</li> <li>• I used scoring and folding for precision.</li> <li>• I prepared for work by assembling components together before joining.</li> <li>• I measured, cut, and assembled with increasing accuracy.</li> </ul>	<p><b>Food Technology</b></p> <ul style="list-style-type: none"> <li>• I understood and applied the principles of a healthy and varied diet.</li> <li>• I described seasonality and knew where and how a variety of ingredients were grown and processed.</li> <li>• I used digital devices to research initiatives that had been launched to address environmental issues caused by importing food.</li> </ul>	<p><b>Mechanical Systems</b></p> <ul style="list-style-type: none"> <li>• I assessed prior knowledge of mechanical systems.</li> <li>• I recalled and shared ideas about components (levers, linkages, pneumatic systems).</li> <li>• I explained how pneumatic systems worked.</li> <li>• I identified and described components (levers, linkages, pneumatic systems).</li> <li>• I recognised how these components created motion.</li> <li>• I interpreted a design brief.</li> </ul>

	<ul style="list-style-type: none"> <li>• I used a range of techniques to shape and mould materials.</li> <li>• I altered and adapted materials to make them stronger.</li> <li>• I recognised what had gone well but suggested further improvements for the finished article in relation to its purpose.</li> </ul>	<ul style="list-style-type: none"> <li>• I began to select my own ingredients when cooking or baking.</li> <li>• I began to order the main stages of making a product.</li> <li>• I combined several components together in different ways.</li> <li>• I weighed in grams.</li> <li>• I presented food in an appealing way.</li> <li>• I understood safe food storage.</li> <li>• I was willing to make changes if they helped to improve my work.</li> </ul>	<ul style="list-style-type: none"> <li>• I developed design criteria based on the brief.</li> <li>• I generated ideas for a product using pneumatic systems.</li> <li>• I created annotated sketches or diagrams for the design.</li> <li>• I assembled a pneumatic system to achieve a specific motion.</li> <li>• I applied practical skills to build a toy using pneumatic components.</li> <li>• I used tools and materials safely and effectively.</li> <li>• I tested the product against the design criteria.</li> <li>• I manipulated materials (cutting, creasing, folding, weaving) to refine the design.</li> <li>• I adjusted the design for functionality and aesthetics.</li> <li>• I reflected on the effectiveness of the product.</li> <li>• I identified strengths and weaknesses of the design.</li> <li>• I suggested realistic changes to improve performance or appearance.</li> </ul>
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<p><b>Progression Statements</b></p>	<ul style="list-style-type: none"> <li>• Can I identify beam and arch bridges?</li> <li>• Can I create a range and arch bridge designs?</li> <li>• Can I identify stronger and weaker structures?</li> <li>• Can I find different ways to reinforce structures?</li> <li>• Can I identify arch, beam and truss bridges?</li> <li>• Can I use triangles to create a truss bridge and test them?</li> <li>• Can I explain how triangles can be used to reinforce bridges?</li> <li>• Can I measure and mark out accurately on wood?</li> <li>• Can I select appropriate tools and equipment for particular tasks?</li> <li>• Can I follow health and safety rules?</li> <li>• Can I explain why selecting appropriate materials is an important part of the design process?</li> <li>• Can I complete my wooden truss bridge?</li> <li>• Can I use tools to aid me with finishing my</li> </ul>	<ul style="list-style-type: none"> <li>• Can I understand and apply the principle of a healthy and varied diet?</li> <li>• Can I understand seasonality and know where and how a variety of ingredients are grown?</li> <li>• Can I show what foods make up a balanced diet?</li> <li>• Can I create a recipe that can be adapted to make it healthier?</li> <li>• Can I use keywords to research alternative ingredients for a well- known dish?</li> <li>• Can I use my findings from my research to suggest healthy substitutions and additions to a recipe?</li> <li>• Can I use my research to plan my dish?</li> <li>• Can I calculate and compare two adapted recipes?</li> <li>• Can I create a healthier version of my chosen dish?</li> <li>• Can I suggest an alternative recipe to suit others with different dietary requirements?</li> </ul>	<ul style="list-style-type: none"> <li>• Can I investigate and analyse a range of existing products?</li> <li>• Can I explain how to strengthen and stiffen my structure?</li> <li>• Can I use paper, card and glue to make my book structure?</li> <li>• Can I make a mechanism or structure as detailed in my design template by using sliders, pivots and folds to produce movement?</li> <li>• Can I make my book more attractive by using layers and spacers to hide relevant parts of my mechanism?</li> <li>• Can I evaluate ideas and products against my own design criteria and consider the views of others to improve my work?</li> <li>• Can I complete the surface decoration of my pop-up book by adding a story through pictures and captions?</li> </ul>
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	<p>products: sander, paint, glue?</p> <ul style="list-style-type: none"> <li>• Can I compare my final product with my plan?</li> <li>• Can I identify points of weakness?</li> <li>• Can I evaluate my truss bridge against a specification?</li> </ul>	<ul style="list-style-type: none"> <li>• Can I use equipment safely, including knives, hot pans and hobs?</li> <li>• Can I avoid cross - contamination?</li> <li>• Can I carefully follow a method to make a recipe?</li> <li>• Can I design an appealing packaging that reflects my recipe?</li> <li>• Can I assess my product with the quality reassurance questionnaire?</li> <li>• Can I complete a taste test on my peers' product?</li> <li>• Can I evaluate my feedback and improve on my product?</li> <li>• Can I explain what steps I would take to improve on my product?</li> </ul>	
<p><b>Sequence of lessons</b></p>	<p>Starter – Brainstorm to assess prior knowledge</p> <p><b>Structures</b></p> <p>L1) LI: To explore how to reinforce a beam to improve its strength.</p>	<p>Starter – Brainstorm to assess prior knowledge</p> <p><b>Food Technology</b></p> <p>L1) LI To understand where food comes from Can I understand and</p>	<p>Starter – Brainstorm to assess prior knowledge</p> <p><b>Mechanical Systems</b></p> <p>L1) LI: To research and design a pop-up book.</p>

	<p>Can I identify beam and arch bridges? Can I research beam, arch and truss bridge designs? Can I identify stronger and weaker structures?</p> <p>L2) LI: To use different techniques to build a spaghetti truss bridge. Can I identify arch, beam and truss bridges? Can I use triangles to create a truss bridge and test them?</p> <p>L3) LI: To understand how to build a truss bridge. Create a plan of a truss bridge then measure and mark out accurately on card? Can I select appropriate tools and equipment for particular tasks?</p> <p>L4) LI: Using research and ideas to assemble a truss bridge. Can I complete my truss bridge? Can I use tools to aid me with finishing my products. Can I compare my final product with my plan?</p> <p>L5) LI: To evaluate my truss bridge design.</p>	<p>apply the principle of a healthy and varied diet. Can I understand seasonality and know where and how a variety of ingredients are grown?</p> <p>L2) LI To understand healthy eating and dietary requirements. Can I show what foods make up a balanced diet? Can I create a recipe that can be adapted to make it healthier? Can I use keywords to research alternative ingredients for a well- known dish?</p> <p>L3) LI To adapt a traditional recipe Can I use my research to plan my dish. Can I calculate and compare two adapted recipes? Can I create a healthier version of my chosen dish?</p> <p>L4) LI To complete a food product using my designs and research. Can I use equipment safely, including knives, hot pans and hobs? Can I avoid cross - contamination? Can I carefully follow a method to make a recipe? Can I design an appealing packaging that reflects my recipe?</p>	<p>Can I investigate and analyse a range of existing products? Can I explain how to strengthen and stiffen my structure?</p> <p>L2) LI: To create my pop-up books using my design plans. Can I use paper, card and glue to make my book structure? Can I make a mechanism or structure as detailed in my design template by using sliders, pivots and folds to produce movement?</p> <p>L3) LI: To improve my finishing of the pop book. Can I make my book more attractive by using layers using spacers to hide relevant parts of my mechanism? Can I evaluate ideas and products against their own design criteria and consider the views of others to improve their work?</p> <p>L4) LI: To create a high-quality product suitable for young children. Can I complete the surface decoration of my pop by adding a story through pictures and captions?</p>
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	<p>Can I identify points of weakness? Can I evaluate my truss bridge against a specification?</p>		
<p><b>Key Vocab</b></p>	<p><b>Structures</b>                  Abutment, accuracy, arched bridge, beam bridge, evaluation, file, mark out, material properties, measure, predict, reinforce, suspension bridge, test, truss bridge,</p>	<p><b>Food technology:</b>                  adaptation, balanced, beef, brand, cook, cross-contamination, develop, enhance, equipment, farm, label, measure, nutrient, nutrition, nutritional value, preference, press, process, safety, theme.</p>	<p><b>Mechanical Systems</b>                  Aesthetic, Computer-aided design (CAD), caption, design, design brief, design criteria, exploded-diagram, function, input, linkage, mechanism, motion, output, pivot, prototype, slider, structure, template.</p>

<h2 style="margin: 0;">Challenge</h2>	<p><b><u>Autumn</u></b></p> <p><b><u>Lesson 1:</u></b> What are different ways to reinforce structures?</p> <p><b><u>Lesson 2:</u></b> Explain how triangles can be used to reinforce bridges?</p> <p><b><u>Lesson 3:</u></b> Explain why selecting appropriate materials is an important part of the design process</p> <p><b><u>Lesson 4:</u></b> What is the same and what is different to your final plan?</p>	<p><b><u>Spring 1:</u></b></p> <p><b><u>Lesson 1:</u></b> Compare seasonal foods from different continents</p> <p><b><u>Lesson 2:</u></b> Can I use my findings from my research to suggest healthy substitutions and additions to a recipe?</p> <p><b><u>Lesson 3:</u></b> Can I suggest an alternative recipe to suit others with different dietary requirements?</p> <p><b><u>Lesson 4:</u></b> Take a taste test . How could I improve my recipe</p>	<p><b><u>Summer 1:</u></b></p> <p><b><u>Lesson 1:</u></b> How have pop up books changed from Victorian times</p> <p><b><u>Lesson 2&amp; 3</u></b> Evaluate your structure . How can you improve it?</p> <p><b><u>Lesson 4</u></b> Add different textures to your book to make it tactile</p>
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<p>Suggested outcomes</p>	<p><b><u>Autumn</u></b>  <b><u>Lesson 1:</u></b>                  To research beam, arch and truss bridges</p> <p><b><u>Lesson 2:</u></b>                  To build a bridge out of triangles made of spaghetti</p> <p><b><u>Lesson 3</u></b>                  To design a plan for a truss bridge</p> <p><b><u>Lesson 4</u></b>                  To assemble a truss bridge</p> <p><b><u>Lesson 5</u></b>                  To evaluate my design</p>	<p><b><u>Spring 1:</u></b>  <b><u>Lesson 1:</u></b>                  To create a factfile about where different foods are grown and when</p> <p><b><u>Lesson 2:</u></b>                  To create a recipe for a balanced diet</p> <p><b><u>Lesson 3:</u></b>                  To adapt a traditional recipe to include seasonal, healthy foods</p> <p><b><u>Lesson 4:</u></b>                  To follow my recipe to create a meal</p>	<p><b><u>Summer 1:</u></b>  <b><u>Lesson 1:</u></b>                  To research pop up books and create my own design</p> <p><b><u>Lesson 2 &amp; 3:</u></b>                  To create a pop up book from my design with a mechanism to create movement</p> <p><b><u>Lesson 4:</u></b>                  To decorate and add a story/ rhyme to the page</p>
			

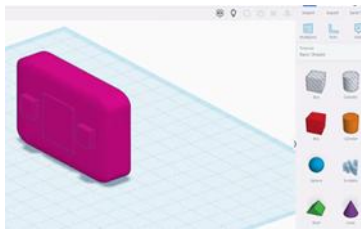


Year 6	Autumn	Spring	Summer
<b>Theme</b>	<b>Blood Heart Frozen Kingdom</b>	<b>A Child's War</b>	<b>Rebuilding Britain</b>
<b>Prior Knowledge</b>	<p><b>Digital World</b></p> <ul style="list-style-type: none"> <li>-Used subject-specific vocabulary related to design and technology</li> <li>-Explored and compared different CAD programs</li> <li>-Understood and used key features of CAD software</li> <li>-Worked effectively with a learning partner</li> <li>-Analysed existing products for strengths, weaknesses, and user needs</li> <li>-Created clear and purposeful design criteria</li> <li>-Understood how products had to meet functional and aesthetic requirements</li> <li>-Explained the purpose and role of a prototype</li> <li>-Designed, made, and developed a 3D prototype</li> </ul>	<p><b>Electrical Systems</b></p> <ul style="list-style-type: none"> <li>-Understood how electrical items worked</li> <li>-Considered user needs and the intended purpose when planning a product</li> <li>-Analysed and evaluated electrical products</li> <li>-Understood material properties (e.g., waterproofing) and how they influenced design</li> <li>-Drew annotated sketches to communicate design ideas clearly</li> <li>-Designed a functional light source or lighthouse</li> <li>-Built and used a simple electrical circuit</li> <li>-Added components to a circuit (e.g., bulbs, switches, motors)</li> <li>-Safely selected and used appropriate tools and equipment</li> </ul>	<p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>-Identified and compared a range of fastenings</li> <li>-Explained advantages and disadvantages of different fastenings</li> <li>-Evaluated products based on functionality and suitability</li> <li>-Developed design ideas through self-reflection</li> <li>-Used peer feedback to refine and improve designs</li> <li>-Created designs that met a set design criteria</li> <li>-Devised and created templates or patterns for textile products</li> <li>-Measured, marked, cut, and assembled materials accurately</li> <li>-Developed a final design based on initial concepts and existing examples</li> <li>-Used sewing techniques to join fabric materials</li> <li>-Used both permanent and temporary fastenings effectively</li> <li>-Assembled a textile product following a planned design</li> </ul>

	<ul style="list-style-type: none"> <li>-Constructed structures using 3D nets</li> <li>- Applied spatial awareness and practical making skills</li> <li>-Used computer-aided design to create graphics (e.g., logos)</li> <li>-Manipulated shapes, colours, and clipart in a digital design tool</li> <li>-Understood branding and the importance of logos in business</li> <li>-Followed a design brief or design requirements</li> <li>-Tested and evaluated a finished product</li> <li>-Identified strengths and areas for improvement</li> <li>-Suggested improvements linked to the product's purpose</li> <li>-Developed reflective and critical thinking skills</li> </ul>	<ul style="list-style-type: none"> <li>-Incorporated electricity to create light or motion</li> <li>-Created a product following a planned design</li> <li>-Tested and evaluated a finished product</li> <li>-Identified strengths and areas for improvement</li> <li>-Suggested purposeful improvements based on a product's intended use</li> <li>-Developed reflective and critical thinking skills</li> </ul>	<ul style="list-style-type: none"> <li>-Tested and evaluated the final product against the design criteria</li> <li>-Gave and received constructive peer feedback</li> <li>-Evaluated the work of others using design specifications</li> <li>-Reflected on improvements and adapted designs based on testing</li> </ul>
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<p><b>Progression Statements</b></p>	<ul style="list-style-type: none"> <li>• Researching products to understand purpose and user needs</li> <li>• Designing appealing products aimed at specific individuals or target groups</li> <li>• Creating designs that are fit for purpose</li> <li>• Writing a computer program that includes multiple functions</li> <li>• Programming directional controls such as a cardinal compass (N, E, S, W)</li> <li>• Considering sustainability when selecting materials</li> <li>• Understanding material properties and how they affect function</li> <li>• Developing product ideas through annotated sketches</li> <li>• Identifying industries that use 3D CAD modelling and understanding why</li> <li>• Using 3D CAD software to place, position, and manoeuvre 3D objects</li> <li>• Strengthening digital design skills using computer-aided design tools</li> </ul>	<ul style="list-style-type: none"> <li>• Researching modern children’s toys to understand features, purpose, and user appeal</li> <li>• Analysing existing products using criteria such as function, safety, materials, and target audience</li> <li>• Using a range of information sources to inform design ideas</li> <li>• Designing a steady-hand electronic game</li> <li>• Calculating material quantities needed for a product</li> <li>• Estimating costs based on material use</li> <li>• Selecting appropriate tools and materials suited to the audience and product function</li> <li>• Constructing a stable and secure base for an electronic product</li> <li>• Assembling basic electronic components</li> <li>• Incorporating a switch into an electronic circuit</li> <li>• Following a plan to assemble an electronic product safely and accurately</li> <li>• Producing clear written instructions, manuals, or handbooks</li> </ul>	<ul style="list-style-type: none"> <li>• Generating and developing design ideas</li> <li>• Creating cross-sectional and exploded diagrams to communicate designs clearly</li> <li>• Considering the target audience when selecting suitable textiles</li> <li>• Measuring and marking fabric accurately</li> <li>• Cutting fabric with precision according to a design</li> <li>• Ensuring products are neatly and carefully finished</li> <li>• Using a running stitch to join pieces of fabric together</li> <li>• Assembling textile components to create a structured garment (waistcoat)</li> <li>• Securing fastenings appropriately</li> <li>• Attaching decorative elements using thread</li> <li>• Enhancing products with creative textile decoration techniques</li> <li>• Evaluating a partner’s product against design criteria</li> <li>• Offering constructive feedback based on identified strengths and areas for improvement</li> </ul>
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	<ul style="list-style-type: none"> <li>Communicating design concepts clearly in both digital and sketched formats</li> </ul>	<ul style="list-style-type: none"> <li>Using subject-specific vocabulary in written explanations</li> <li>Testing and evaluating the final product against design intentions and user needs</li> <li>Identifying strengths and areas for improvement</li> <li>Reflecting critically on product effectiveness and usability</li> </ul>	<ul style="list-style-type: none"> <li>Refining and suggesting further improvements to meet design intentions</li> </ul>
<p><b>Sequence of lessons</b></p>	<p><b>Digital World</b></p> <p>L1) LI: To research and design a product that is fit for purpose.  <b>Can I design appealing products that are fit for purpose and aimed at particular individuals or groups?</b></p> <p>L2) LI: To write a program to include multiple functions as part of a navigation device.  <b>Can I program an N,E,S,W cardinal compass?</b></p> <p>L3) LI: To develop a sustainable product.</p>	<p><b>Electrical Systems</b></p> <p>L1) LI: To research and analyse a range of modern children’s toys.  <b>Can I use a range of information to inform my design?</b>  <b>Can I analyse a selection of existing children’s toys?</b></p> <p>L2) LI: To design a steady hand game.  <b>Can I calculate the amount of materials needed and use this to estimate cost?</b></p> <p>L3) LI: To construct a stable base.  <b>Can I choose appropriate tools and materials to ensure that the final product will appeal to the audience?</b></p>	<p><b>Textiles</b></p> <p>L1) LI: To design a waistcoat.  <b>Can I generate and develop ideas using a cross-sectional/ exploded diagram?</b>  <b>Can I consider the audience when choosing textiles?</b></p> <p>L2) LI: To mark and cut fabric according to a design.  <b>Can I measure and cut out in precise detail, and make sure that finished products are carefully finished?</b></p> <p>L3) LI: To assemble a waistcoat.  <b>Can I use a running stitch to join two pieces of fabric together?</b></p> <p>L4) LI To decorate my waistcoat.</p>

	<p>Can I consider materials and their functional properties? Can I develop a product idea through annotated sketches?</p> <p>L4) LI: To develop 3D CAD skills to produce a virtual model. Can I identify key industries that utilise 3D CAD modelling and explain why? Can I place and manoeuvre 3D objects, using computer-aided design?</p>	<p>L4) LI: To assemble electronics and complete my electronic game. Can I incorporate a switch into the product?</p> <p>L5) LI: To produce a simple instruction manual or handbook for my product. Can I use key vocabulary to create a manual or handbook? How well can I test and evaluate the final product?</p>	<p>Can I secure a fastening? Can I attach objects for decoration using thread?</p> <p>L5) LI: To critique my partner’s product against the design criteria and suggest improvements. Can I refine and suggest further improvements to the product?</p>
<p><b>Key Vocab</b></p>	<p><b>Digital World</b> 3D CAD, application (Apps), biodegradable, boolean, cardinal compass, client, compass, concept, convince, corrode, duplicate, environmentally friendly, equipment, feature, finite, function, GPS tracker, If statement, infinite, investment, lightweight, loop, manufacture, materials (wood, metal, plastic etc.), mouldable, navigation, non-recyclable, product lifecycle, product lifespan, program, recyclable, smart, sustainable, sustainable design, unsustainable design, variable, workplane</p>	<p><b>Electrical Systems</b> Assemble, battery, battery pack, benefit, bulb, bulb holder, buzzer, circuit, circuit symbol, component, conductor, copper, design, design criteria, evaluation, fine motor skills, fit for purpose, form, function, gross motor skills, insulator, LED, magnetic field, user.</p>	<p><b>Textiles</b> Annotate, adapt, annotate, design, design criteria, detail, fabric, fastening, knot, properties, running-stitch, seam, sew, shape, target audience, target customer, template, thread, unique, waistcoat, waterproof.</p>
<p><b>Challenge</b></p>	<p><b><u>Autumn :</u></b> <b><u>Lesson 1:</u></b></p>	<p><b><u>Spring :</u></b> <b><u>Lesson 1:</u></b></p>	<p><b><u>Summer:</u></b> <b><u>Lesson 1:</u></b></p>

	<p>How can you adapt your model to appeal to a different audience?</p> <p><b>Lesson 2:</b> Explain the key functions in my program, including any additions</p> <p><b>Lesson 3:</b> How is your design sustainable?</p> <p><b>Lesson 4:</b> Focus on one part of the model and add more detail.</p>	<p>What would you include to appeal to a younger audience?</p> <p><b>Lesson 2:</b> How much would you need to sell your product for to make a profit?.</p>	<p>How can you adapt your waistcoat to appeal to a different audience?</p> <p><b>Lesson 2:</b> List different materials you could use</p> <p><b>Lesson 3:</b> What other stitches would be suitable and why?</p> <p><b>Lesson 4:</b> Focus on one part of the waistcoat and add more detail</p>
<p><b>Suggested outcomes</b></p>	<p><b>Autumn 1:</b> <b>Lesson 1:</b> To research and design a product</p> <p><b>Lesson 2:</b> To program a cardinal compass</p> <p><b>Lesson 3:</b> To design, sketch and annotate a compass</p> <p><b>Lesson 4:</b> Create using 3d CAD</p> 	<p><b>Spring 1:</b> <b>Lesson 1:</b> Factfile made about modern children's toys</p> <p><b>Lesson 2:</b> Design in sketchbooks a steady hand game and annotate around</p> <p><b>Lesson 3:</b> Use material to create structure of game</p> <p><b>Lesson 4:</b> Add electricity and switch</p> 	<p><b>Summer 1:</b> <b>Lesson 1:</b> To sketch a diagram for a waistcoat and create a template</p> <p><b>Lesson 2:</b> To cut out material for a waistcoat using a template</p> <p><b>Lesson 3:</b> To use running stitch to sew a waistcoat.</p> <p><b>Lesson 4:</b> To attach a fastening and decorate a waistcoat</p> 

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