

Phase / Year	Autumn Topic/Unit	Spring Topic/Unit	Summer Topic/Unit
	KS3 Phase 1	<p><b>Bird Feeder</b></p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Use tools and materials  <b>M2</b> Measure, cut and score  <b>M3</b> Use hand tools safely and appropriately  <b>M5</b> Use appropriate finishing techniques</p> <p><b>Basic Electronic Christmas Decoration</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas by drawing on their own and other people's experiences  <b>D2</b> Develop their design ideas through discussion, observation, drawing and modelling  <b>D3</b> Identify a purpose for what they intend to design and make  Identify simple design criteria</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Begin to select tools and materials; use vocabulary to name and describe them  <b>M2</b> Measure, cut and score with some accuracy  <b>M3</b> Use hand tools safely and appropriately</p>	<p><b>Bookend</b></p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Begin to select tools and materials; use vocabulary to name and describe them  <b>M2</b> Measure, cut and score with some accuracy  <b>M3</b> Use hand tools safely and appropriately  <b>M5</b> Choose and use appropriate finishing techniques</p> <p><b>Graphics Skills</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D2</b> Develop their design ideas through discussion, observation, drawing and modelling</p>

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	<p><b>M4</b> Assemble, join and combine materials in order to make a product</p> <p><b>M5</b> Choose and use appropriate finishing techniques</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate against their design criteria</p> <p><b>E3</b> Talk about their ideas, saying what they like and dislike about them</p>		<p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas by drawing on their own and other people's experiences</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Select tools and materials; use vocabulary to name and describe them</p> <p><b>M2</b> Measure, cut and score with some accuracy</p> <p><b>M3</b> Use hand tools safely and appropriately</p> <p><b>M5</b> Choose and use appropriate finishing techniques</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate against their design criteria</p> <p><b>E2</b> Evaluate their products as they are developed, identifying strengths and possible changes they might make</p> <p><b>E3</b> Talk about their ideas, saying what they like and dislike about</p>
Phase / Year	Autumn Topic/Unit	Spring Topic/Unit	Summer Topic/Unit
<p>KS3 Phase 2</p>	<p><b>Acrylic Phone Stand</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas for an item, considering its purpose and the user/s</p> <p><b>D2</b> Identify a purpose and establish criteria for a successful product.</p> <p><b>D3</b> Plan the order of their work before starting</p> <p><b>D5</b> Make drawings with labels when designing</p>	<p><b>Trinket Box</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas for an item, considering its purpose and the user/s</p> <p><b>D2</b> Identify a purpose and establish criteria for a successful product.</p>	<p><b>Chocolate Bar</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas for an item, considering its purpose and the user/s</p> <p><b>D2</b> Identify a purpose and establish criteria for a successful product.</p> <p><b>D5</b> Make drawings with labels when designing</p>

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	<p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Select tools and techniques for making their product  <b>M2</b> Measure, mark out, cut, score and assemble components with more accuracy  <b>M3</b> Work safely and accurately with a range of simple tools  <b>M5</b> Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate against their design criteria  <b>E2</b> Disassemble and evaluate familiar products  <b>E3</b> Talk about their ideas, saying what they like and dislike about them</p> <p><b>Mechanical Toy (2023/24 Only)</b></p> <p><b>Developing, planning and communicating ideas.</b>  <b>D1</b> Generate ideas by drawing on their own and other people's experiences  <b>D2</b> Develop their design ideas through discussion, observation, drawing and modelling  <b>D3</b> Identify a purpose for what they intend to design and make  Identify simple design criteria</p>	<p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Select tools and techniques for making their product  <b>M2</b> Measure, mark out, cut, score and assemble components with more accuracy  <b>M3</b> Work safely and accurately with a range of simple tools  <b>M5</b> Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT</p>	<p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Select tools and techniques for making their product  <b>M2</b> Measure, mark out, cut, score and assemble components with more accuracy  <b>M3</b> Work safely and accurately with a range of simple tools  <b>M4</b> Think about their ideas as they make progress and be willing change things if this helps them improve their work  <b>M5</b> Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT</p> <p><b>Evaluating processes and products</b></p> <p><b>E2</b> Disassemble and evaluate familiar products</p>

Phase / Year	Autumn Topic/Unit	Spring Topic/Unit	Summer Topic/Unit
	<p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Select tools and materials; use vocabulary to name and describe them  <b>M2</b> Measure, cut and score with some accuracy  <b>M3</b> Use hand tools safely and appropriately  <b>M5</b> Choose and use appropriate finishing techniques</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate against their design criteria  <b>E2</b> Evaluate their products as they are developed, identifying strengths and possible changes they might make  <b>E3</b> Talk about their ideas, saying what they like and dislike about</p>		

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KS3 Phase 3	<p><b>Bird Box</b></p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques  <b>M2</b> Measure, mark out, cut, score and assemble components with more accuracy</p>	<p><b>Noughts and Crosses Box Game</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas, considering the purposes for which they are designing  <b>D3</b> Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail</p>	<p><b>Bridge Structures Project</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas, considering the purposes for which they are designing  <b>D2</b> Make labelled drawings from different views showing specific features  <b>D3</b> Develop a clear idea of what has to be done, planning how to use materials, equipment and</p>

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	<p><b>M3</b> Independently measure materials <b>M5</b> Independently use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT</p> <p><b>Microcontroller Christmas Decoration</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas, considering the purposes for which they are designing <b>D2</b> Make labelled drawings from different views showing specific features <b>D3</b> Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Select tools and techniques for making their product <b>M2</b> Measure, mark out, cut, score and assemble components with more accuracy <b>M3</b> Work safely and accurately with a range of simple tools <b>M4</b> Think about their ideas as they make progress and be willing change things if this helps them improve their work</p>	<p><b>D4</b> Evaluate products and identify criteria that can be used for their own designs <b>D5</b> Select appropriate tools and techniques for making their product</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Select tools and techniques for making their product <b>M2</b> Measure, mark out, cut, score and assemble components with more accuracy <b>M3</b> Work safely and accurately with a range of simple tools <b>M5</b> Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate their work both during and at the end of the assignment <b>E2</b> Evaluate their products carrying out appropriate tests</p> <p><b>Advanced Graphics Skills</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D2</b> Make labelled drawings from different views showing specific features</p>	<p>processes, and suggesting alternative methods of making, if the first attempts fail <b>D4</b> Evaluate products and identify criteria that can be used for their own designs <b>D5</b> Select appropriate tools and techniques for making their product</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Select tools and techniques for making their product <b>M2</b> Measure, mark out, cut, score and assemble components with more accuracy <b>M3</b> Work safely and accurately with a range of simple tools <b>M5</b> Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate their work both during and at the end of the assignment <b>E2</b> Evaluate their products carrying out appropriate tests <b>E3</b> Suggest ways that their product could be improved</p> <p><b>Advanced CAD Skills</b></p>

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	<b>M5</b> Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT		<b>Developing, planning and communicating ideas.</b>  <b>D2</b> Make labelled drawings from different views showing specific features

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	GCSE	HT1	HT2	HT3	HT4	HT5
<b>10 Theory</b>	<b>6 Materials and their working properties</b> The categorisation of the types and properties of materials.  <b>6a Material categories</b> <ul style="list-style-type: none"> <li>Papers and boards</li> <li>Natural and manufactured timbers</li> <li>Metals and alloys</li> <li>Polymers</li> </ul> <b>6b Material properties</b> <ul style="list-style-type: none"> <li>Physical properties</li> <li>Working properties</li> </ul> <b>3 Developments in new materials</b> Developments in new materials  <b>3a Modern materials</b> <ul style="list-style-type: none"> <li>Developments made through the invention of new or improved processes</li> <li>Alterations to perform a particular function.</li> </ul> <b>3b Smart materials</b> <ul style="list-style-type: none"> <li>Material properties can be significantly</li> </ul>	<b>7 Selection of materials or components</b> Selection of materials and components by considering the factors listed below: <ul style="list-style-type: none"> <li>Functionality</li> <li>Aesthetics</li> <li>Environmental factors</li> <li>Availability</li> <li>Cost</li> <li>Social factors</li> <li>Cultural factors</li> <li>Ethical factors</li> </ul> <b>4 Systems approach to designing</b> Electronic systems including programmable components.  <b>4a Inputs</b> <ul style="list-style-type: none"> <li>The use of light sensors, temperature sensors, pressure sensors and switches.</li> </ul> <b>4b Processes</b> <ul style="list-style-type: none"> <li>The use of programming microcontrollers.</li> </ul>	<b>11 Using and working with materials</b>  <b>11a Properties of materials</b> The physical and mechanical properties relevant to commercial products in: <ul style="list-style-type: none"> <li>Papers and boards</li> <li>Timber based materials</li> </ul> <b>11b The modification of properties for specific purposes</b> <ul style="list-style-type: none"> <li>Additives to prevent moisture transfer.</li> <li>Seasoning to reduce moisture content of timbers.</li> </ul> <b>11c How to shape and form using cutting, abrasion and addition</b> <ul style="list-style-type: none"> <li>Papers and boards- how to cut, crease, score, fold and perforate card.</li> <li>Timber based materials - how to cut, drill, chisel, sand and plane.</li> </ul> <b>12 Stock forms, types and sizes</b> Stock forms types and sizes in order to calculate and determine the quantity of materials or components required.	<b>14 Specialist techniques and processes</b>  <b>14a The use of production aids</b> <ul style="list-style-type: none"> <li>How to use measurement/ reference points, templates, jigs and patterns where suitable.</li> <li>Scaling of drawings, working to datums.</li> </ul> <b>14b Tools, equipment and processes</b> How a range of tools, equipment and processes can be used to shape, fabricate, construct and assemble high quality prototypes, as appropriate to the materials and/or components being used.  <b>14c How materials are cut shaped and formed to a tolerance</b> The manufacture to minimum and maximum measurements.  <b>14d Commercial processes</b> <ul style="list-style-type: none"> <li>Timber based materials - routing and turning.</li> </ul> <b>14e Quality control</b> The application and use of quality control to include measurable and	<b>8 Forces and stresses</b> The impact of forces and stresses and the way in which materials can be reinforced and stiffened.  <b>8a Materials and objects can be manipulated to resist and work with forces and stresses</b> <ul style="list-style-type: none"> <li>Tension, compression, bending, torsion and shear.</li> </ul> <b>8b Materials can be enhanced to resist and work with forces and stresses to improve functionality</b> <ul style="list-style-type: none"> <li>lamination, bending, folding, webbing, fabric interfacing.</li> </ul> <b>9 Ecological and social footprint</b> The ecological and social footprint left by designers.  <b>9a Ecological issues in the design and manufacture of products</b> <ul style="list-style-type: none"> <li>Deforestation, mining, drilling and farming.</li> <li>Mileage of product from raw material source, manufacture, distribution, user</li> </ul>	<b>16 Investigation, primary and secondary data</b>  <b>16a Use primary and secondary data to understand client and/or user needs</b>  <b>16b How to write a design brief and produce a design and manufacturing specification</b>  <b>16c Investigations in order to identify problems and needs</b>  <b>17 Environmental, social and economic challenge</b> The environment, social and economic challenges that influence design and making.

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	<p>changed in a controlled fashion by external stimuli.</p> <ul style="list-style-type: none"> <li>Thermochromic pigments and photochromic pigments</li> </ul> <p><b>3c Composite materials</b></p> <ul style="list-style-type: none"> <li>Composite materials are an enhanced material.</li> </ul> <p><b>5 Mechanical devices</b></p> <p><b>5a Different types of movement</b></p> <ul style="list-style-type: none"> <li>The functions of mechanical devices to produce linear, rotary, reciprocating and oscillating movements.</li> </ul> <p><b>5b Changing magnitude and direction of force</b></p> <ul style="list-style-type: none"> <li>Levers</li> <li>Linkages</li> <li>Rotary systems</li> </ul> <p><b>14c How materials are cut shaped and formed to a tolerance</b></p> <p>The manufacture to minimum and maximum measurements.</p> <p><b>14d Commercial processes</b></p> <ul style="list-style-type: none"> <li>Papers and boards - offset lithography and die cutting.</li> </ul>	<ul style="list-style-type: none"> <li>functionality to products and processes.</li> </ul> <p><b>4c Outputs</b></p> <ul style="list-style-type: none"> <li>The use of buzzers, speakers and lamps, to provide</li> <li>functionality to products and processes.</li> </ul> <p><b>5 Mechanical devices</b></p> <p><b>5a Different types of movement</b></p> <ul style="list-style-type: none"> <li>The functions of mechanical devices to produce linear, rotary, reciprocating and oscillating movements.</li> </ul> <p><b>5b Changing magnitude and direction of force</b></p> <ul style="list-style-type: none"> <li>Levers</li> <li>Linkages</li> <li>Rotary systems</li> </ul>	<p><b>13 Scales of production</b></p> <p>Select materials and components considering scales of production.</p> <p><b>13a Techniques and processes.</b></p> <ul style="list-style-type: none"> <li>How products are produced in different volumes.</li> <li>The reasons why different manufacturing methods are used for different production volumes.</li> </ul>	<p>quantitative systems used during manufacture</p> <p><b>15 Surface treatments and finishes</b></p> <p><b>15a The preparation and application of treatments and finishes to enhance functional and aesthetic properties.</b></p>	<p>location and final disposal.</p> <ul style="list-style-type: none"> <li>That carbon production</li> </ul> <p><b>9b The six Rs</b></p> <ul style="list-style-type: none"> <li>Reduce, refuse, re-use, repair, recycle and rethink.</li> </ul> <p><b>9c Social issues in the design and manufacture of products</b></p> <ul style="list-style-type: none"> <li>Safe working conditions;</li> <li>reducing oceanic/atmospheric pollution</li> <li>reducing the detrimental impact on others.</li> </ul> <p><b>10 Sources and origins</b></p> <p>Primary sources of materials and the main processes involved in converting into workable forms for at least one material area.</p>	

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GCSE	HT1 Topic/Unit	HT2 Topic/Unit	HT3 Topic/Unit	HT4 Topic/Unit	HT5 Topic/Unit	See Year 11 HT1 Topic/Unit
10 SKILLS	<p><b>Pencil Stand</b></p> <p>Developing, planning and communicating ideas</p> <p><b>D1</b> Generate ideas and identify a purpose for their product  <b>D2</b> Draw up a specification for their design  <b>D3</b> Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail  <b>D5</b> Select appropriate materials, tools and techniques</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Measure and mark out accurately</p>	<p><b>Pull Along Toy</b></p> <p>Developing, planning and communicating ideas.</p> <p><b>D1</b> Generate ideas and identify a purpose for their product  <b>D3</b> Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail  <b>D4</b> Use results of investigations, information sources, including ICT when developing design ideas  <b>D5</b> Select appropriate materials, tools and techniques</p> <p><b>Working with tools, equipment, materials</b></p>	<p><b>Wooden Chess Set</b></p> <p>Developing, planning and communicating ideas.</p> <p><b>D1</b> Generate ideas and identify a purpose for their product  <b>D4</b> Use results of investigations, information sources, including ICT when developing design ideas  <b>D5</b> Select appropriate materials, tools and techniques</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Measure and mark out accurately  <b>M2</b> Use skills in using different tools and equipment safely and accurately</p>	<p><b>Trinket Box</b></p> <p>Developing, planning and communicating ideas.</p> <p><b>D1</b> Generate ideas and identify a purpose for their product  <b>D3</b> Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail  <b>D4</b> Use results of investigations, information sources, including ICT when developing design ideas  <b>D5</b> Select appropriate materials, tools and techniques</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p>	<p><b>Nature Area</b></p> <p>Developing, planning and communicating ideas.</p> <p><b>D1</b> Generate ideas and identify a purpose for their product  <b>D2</b> Draw up a specification for their design  <b>D3</b> Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail  <b>D4</b> Use results of investigations, information sources, including ICT when developing design ideas  <b>D5</b> Select appropriate materials, tools and techniques</p> <p><b>Working with tools, equipment, materials</b></p>	<p><b>16 Investigation, primary and secondary data</b></p> <p>16a Use primary and secondary data to understand client and/or user needs</p> <p>16b How to write a design brief and produce a design and manufacturing specification</p> <p>16c Investigations in order to identify problems and needs</p> <p><b>17 Environmental, social and economic challenge</b>  The environment, social and economic challenges that influence design and making.</p>



Year	Autumn	Spring	Summer	
	<p><b>M3</b> Independently measure materials accurately</p> <p><b>Evaluating processes and products</b></p> <p><b>E3</b> Evaluate against their original criteria</p> <p><b>Mechanical Toy</b></p> <p><b>Developing, planning and communicating ideas</b></p> <p><b>D1</b> Generate ideas and identify a purpose for their product</p> <p><b>D2</b> Draw up a specification for their design</p> <p><b>D3</b> Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p>	<p><b>and components to make quality products</b></p> <p><b>M1</b> Measure and mark out accurately</p> <p><b>M2</b> Use skills in using different tools and equipment safely and accurately</p> <p><b>M3</b> Independently measure materials accurately</p> <p><b>M4</b> Analyse and evaluate their ideas as they make progress and independently change things if this helps them improve their work</p> <p><b>M5</b> Cut and join with accuracy to ensure a good-quality finish to the product</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate a product against the original design specification</p> <p><b>E3</b> Evaluate against their original criteria</p> <p><b>Graphics Skills</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas and identify a purpose for their product</p> <p><b>D5</b> Select appropriate materials, tools and techniques</p> <p><b>Working with tools, equipment, materials</b></p>	<p><b>M3</b> Independently measure materials accurately</p> <p><b>M5</b> Cut and join with accuracy to ensure a good-quality finish to the product</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate a product against the original design specification</p> <p><b>E3</b> Evaluate against their original criteria</p> <p><b>M1</b> Measure and mark out accurately</p> <p><b>M2</b> Use skills in using different tools and equipment safely and accurately</p> <p><b>M3</b> Independently measure materials accurately</p> <p><b>M5</b> Cut and join with accuracy to ensure a good-quality finish to the product</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate a product against the original design specification</p> <p><b>E2</b> Evaluate it personally and seek evaluation from others</p> <p><b>E3</b> Evaluate against their original criteria</p>	<p><b>and components to make quality products</b></p> <p><b>M1</b> Measure and mark out accurately</p> <p><b>M2</b> Use skills in using different tools and equipment safely and accurately</p> <p><b>M3</b> Independently measure materials accurately</p> <p><b>M4</b> Analyse and evaluate their ideas as they make progress and independently change things if this helps them improve their work</p> <p><b>M5</b> Cut and join with accuracy to ensure a good-quality finish to the product</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate a product against the original design specification</p> <p><b>E2</b> Evaluate it personally and seek evaluation from others</p> <p><b>E3</b> Evaluate against their original criteria</p>

Year	Autumn	Spring	Summer
	<p><b>M1</b> Measure and mark out accurately  <b>M2</b> Use skills in using different tools and equipment safely and accurately  <b>M3</b> Independently measure materials accurately  <b>M5</b> Cut and join with accuracy to ensure a good-quality finish to the product</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate a product against the original design specification  <b>E3</b> Evaluate against their original criteria</p> <p><b>Point of Sale</b></p> <p><b>D1</b> Generate ideas through brainstorming and identify a purpose for their product  <b>D2</b> Draw up a specification for their design  <b>D4</b> Use results of investigations, information sources, including ICT when developing design ideas</p>	<p><b>Christmas Decoration</b></p> <p><b>Developing, planning and communicating ideas.</b></p> <p><b>D1</b> Generate ideas through brainstorming and identify a purpose for their product  <b>D5</b> Select appropriate materials, tools and techniques</p> <p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Measure and mark out accurately  <b>M2</b> Use skills in using different tools and equipment safely and accurately  <b>M3</b> Independently measure materials accurately  <b>M4</b> Analyse and evaluate their ideas as they make progress and independently</p>	<p><b>and components to make quality products</b></p> <p><b>M1</b> Measure and mark out accurately  <b>M2</b> Use skills in using different tools and equipment safely and accurately</p>

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	<p><b>Working with tools, equipment, materials and components to make quality products</b></p> <p><b>M1</b> Measure and mark out accurately</p> <p><b>M2</b> Use skills in using different tools and equipment safely and accurately</p> <p><b>M3</b> Independently measure materials accurately</p> <p><b>M4</b> Analyse and evaluate their ideas as they make progress and independently change things if this helps them improve their work</p> <p><b>M5</b> Cut and join with accuracy to ensure a good-quality finish to the product</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate a product against the original design specification</p>	<p>change things if this helps them improve their work</p> <p><b>M5</b> Cut and join with accuracy to ensure a good-quality finish to the product</p> <p><b>Evaluating processes and products</b></p> <p><b>E1</b> Evaluate a product against the original design specification</p> <p><b>E3</b> Evaluate against their original criteria</p>				

Year	Autumn	Spring	Summer
	<p><b>E2</b> Evaluate it personally and seek evaluation from others</p> <p><b>E3</b> Evaluate against their original criteria</p>		

Year	Autumn		Spring		Summer	
	HT1	HT2	HT3	HT4	HT5	
GCSE	Topic/Unit	Topic/Unit	Topic/Unit	Topic/Unit	Topic/Unit	
<b>11 Project</b>	<p><b>19 Design strategies</b></p> <p><b>19a Generate imaginative and creative design ideas using a range of different design strategies</b> Application of different design strategies.</p> <p><b>19b Explore and develop their own ideas</b> Use of iterative process including:</p> <ul style="list-style-type: none"> <li>sketching</li> <li>modelling</li> <li>testing</li> <li>evaluation of their work to improve outcomes.</li> </ul> <p><b>20 Communication of design ideas</b> Develop, communicate, record and justify design ideas using a range of appropriate techniques</p> <p><b>21 Prototype development</b> Design and develop prototypes in response to client wants and needs.</p> <p><b>22 Selection of materials and components</b> Select appropriate materials and components to make a prototype.</p>	<p><b>21 Prototype development</b> Design and develop prototypes in response to client wants and needs.</p> <p><b>22 Selection of materials and components</b> Select appropriate materials and components to make a prototype.</p> <p><b>23 Tolerances</b> Work accurately using tolerances.</p> <p><b>24 Material management</b></p> <p><b>24a Cut materials efficiently and minimise waste</b> The importance of planning the cutting and shaping of material to minimise</p> <p><b>24b Use appropriate marking out methods, data points and coordinates</b> The use of data points and coordinates including the use of reference points, lines and surfaces, templates, jigs and/or patterns</p>	<p><b>21 Prototype development</b> Design and develop prototypes in response to client wants and needs.</p> <p><b>22 Selection of materials and components</b> Select appropriate materials and components to make a prototype.</p> <p><b>23 Tolerances</b> Work accurately using tolerances.</p> <p><b>24 Material management</b></p> <p><b>24a Cut materials efficiently and minimise waste</b> The importance of planning the cutting and shaping of material to minimise</p> <p><b>24b Use appropriate marking out methods, data points and coordinates</b> The use of data points and coordinates including the use of reference points, lines and surfaces, templates, jigs and/or patterns</p>	<p><b>22 Selection of materials and components</b> Select appropriate materials and components to make a prototype.</p> <p><b>25 Specialist tools and equipment</b> How to select and use specialist tools and equipment.</p> <p><b>26 Specialist techniques and processes</b> How to select and use specialist techniques and processes appropriate for the material and/or task and use them to the required level of accuracy in order to complete quality outcomes.</p> <p><b>26a Surface treatments and finishes</b> How to prepare a material for a treatment or finish. How to apply an appropriate surface treatment or finish.</p> <p><b>21 Prototype development</b> Evaluate prototype in response to client wants and needs.</p>	<p><b>1 New and emerging technologies</b></p> <p><b>1a Industry</b> The impact of new and emerging technologies</p> <p><b>1b Enterprise</b> Enterprise based on the development of an effective business innovation</p> <p><b>1c Sustainability</b> The impact of resource consumption on the planet</p> <p><b>1d People</b> Changing job roles due to the emergence of new ways of working driven by technological change.</p> <p><b>1e Culture</b> Changes in fashion and trends in relation to new and emergent technologies. Respecting people of different faiths and beliefs.</p> <p><b>1f Society</b> How products are designed and made to avoid</p>	

Year	Autumn	Spring	Summer
	<p><b>23 Tolerances</b> Work accurately using tolerances.</p> <p><b>24 Material management</b></p> <p><b>24a Cut materials efficiently and minimise waste</b> The importance of planning the cutting and shaping of material to minimise</p> <p><b>24b Use appropriate marking out methods, data points and coordinates</b> The use of data points and coordinates including the use of reference points, lines and surfaces, templates, jigs and/or patterns</p> <p><b>25 Specialist tools and equipment</b> How to select and use specialist tools and equipment.</p> <p><b>26 Specialist techniques and processes</b> How to select and use specialist techniques and processes appropriate for the material and/or task and use them to the required level of accuracy in order to complete quality outcomes.</p> <p><b>26a Surface treatments and finishes</b> How to prepare a material for a treatment or finish. How to apply an appropriate surface treatment or finish.</p>	<p><b>25 Specialist tools and equipment</b> How to select and use specialist tools and equipment.</p> <p><b>26 Specialist techniques and processes</b> How to select and use specialist techniques and processes appropriate for the material and/or task and use them to the required level of accuracy in order to complete quality outcomes.</p> <p><b>26a Surface treatments and finishes</b> How to prepare a material for a treatment or finish. How to apply an appropriate surface treatment or finish.</p>	<p>having a negative impact on others</p> <p><b>1g Environment</b> Positive and negative impacts new products have on the environment</p> <p><b>1h Production techniques and systems</b> The contemporary and potential future use of technologies.</p> <p><b>1i How the critical evaluation of new and emerging technologies informs design decisions</b> considering scenarios from different perspectives.</p> <p><b>2 Energy generation and storage</b></p> <p><b>2a Fossil fuels</b></p> <p><b>2b Nuclear power</b></p> <p><b>2c Renewable energy</b></p> <p><b>2d Energy storage systems including batteries</b></p> <p><b>18 The work of others</b> Students should investigate, analyse and evaluate the work of past and present designers and companies to inform their own designing.</p>