



Bishop Chadwick  
Catholic Education Trust

## Design & Technology, Food and Computer Science Department



Progression Models 2022

Design & Technology and A-Level Art & Design



Progression Model Y7 Design & Technology – PRODUCT DESIGN First

PLEASE NOTE Due to rooming the year group is split and ½ will study Product Design first and ½ will study Textiles then the groups will swap over.

| Module Title: Desktop Toy  | Module Title: Desktop Toy and Cushion Cover   | Module Title: Cushion Cover  |
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| <p>Learning Intent for this module:</p> <ul style="list-style-type: none"> <li>To design &amp; manufacture a Desktop Toy.</li> <li>To carry out purposeful research to identify user needs.</li> <li>To formulate a design specification to inform the design of a creative outcome.</li> <li>To generate and develop a range of ideas using annotated sketches, templates and 2D plans.</li> </ul>  | <p>Learning Intent for this module:</p> <ul style="list-style-type: none"> <li>To use a range of materials, tools, equipment, techniques and processes confidently and safely.</li> <li>To test, evaluate and refine ideas and final product against design specification, taking into account the views of others.</li> </ul> <p style="text-align: center;">CUSHION COVER BEGINS WEEK 6</p> <ul style="list-style-type: none"> <li>To design &amp; manufacture a Cushion Cover.</li> <li>To carry out purposeful research to identify user needs.</li> <li>To formulate a design specification to inform the design of a creative outcome.</li> <li>To generate and develop a range of ideas using annotated sketches, templates and 2D plans.</li> </ul> | <p>Learning Intent for this module:</p> <ul style="list-style-type: none"> <li>To generate and develop a range of ideas using annotated sketches, templates and 2D plans.</li> <li>To use a range of materials, tools, equipment, techniques and processes confidently and safely.</li> <li>To test, evaluate and refine ideas and final product against design specification, taking into account the views of others.</li> </ul>   |
| <p>Key Content to be learned:</p> <p>D&amp;T Design 1- Use research and exploration, such as the study of different cultures, to identify and understand user needs.</p> <p>D&amp;T Design 2- Identify and solve their own design problems and understand how to reformulate problems given to them.</p> <p>D&amp;T Design 3- Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.</p> <p>D&amp;T Design 5- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p> | <p>Key Content to be learned:</p> <p>D&amp;T Make 1- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.</p> <p>D&amp;T Evaluate 3- Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups</p> <p>D&amp;T Technical Knowledge 1- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.</p> <p style="text-align: center;">CUSHION COVER BEGINS WEEK 6</p>  | <p>Key Content to be learned:</p> <p>D&amp;T Design 5- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p> <p>D&amp;T Make 1- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.</p> <p>D&amp;T Evaluate 3- Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups</p> |

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|  | <p>D&amp;T Design 1- Use research and exploration, such as the study of different cultures, to identify and understand user needs.</p> <p>D&amp;T Design 2- Identify and solve their own design problems and understand how to reformulate problems given to them.</p> <p>D&amp;T Design 3- Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.</p> <p>D&amp;T Design 5- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p> | <p>D&amp;T Technical Knowledge 1- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.</p> |
| <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Write Like a Designer - Design Specification</li> <li>• Design Ideas – Desktop Toy x 4</li> </ul> | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Practical Outcome – Desktop Toy</li> <li>• Write Like a Design Critique – Product Evaluation</li> </ul>   | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Practical Outcome – Cushion Cover</li> <li>• End of Year Examination</li> </ul>        |

Progression Model Y7 Design & Technology – TEXTILES first

PLEASE NOTE Due to rooming the year group is split and ½ will study Product Design first and ½ will study Textiles then the groups will swap over.

| Module Title: Cushion Cover   | Module Title: Cushion Cover and Desktop Toy  | Module Title: Desktop Toy  |
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| <p>Learning Intent for this module:</p> <ul style="list-style-type: none"> <li>• To design &amp; manufacture a Cushion Cover.</li> <li>• To carry out purposeful research to identify user needs.</li> <li>• To formulate a design specification to inform the design of a creative outcome.</li> <li>• To generate and develop a range of ideas using annotated sketches, templates and 2D plans.</li> </ul> | <p>Learning Intent for this module:</p> <ul style="list-style-type: none"> <li>• To use a range of materials, tools, equipment, techniques and processes confidently and safely.</li> <li>• To test, evaluate and refine ideas and final product against design specification, taking into account the views of others.</li> </ul> <p style="text-align: center;">DESKTOP TOY BEGINS WEEK 6</p> <ul style="list-style-type: none"> <li>• To design &amp; manufacture a Desktop Toy.</li> <li>• To carry out purposeful research to identify user needs.</li> </ul> | <p>Learning Intent for this module:</p> <ul style="list-style-type: none"> <li>• To generate and develop a range of ideas using annotated sketches, templates and 2D plans.</li> <li>• To use a range of materials, tools, equipment, techniques and processes confidently and safely.</li> <li>• To test, evaluate and refine ideas and final product against design specification, taking into account the views of others.</li> </ul> |

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|  | <ul style="list-style-type: none"> <li>• To formulate a design specification to inform the design of a creative outcome.</li> <li>• To generate and develop a range of ideas using annotated sketches, templates and 2D plans.</li> </ul>   |  |
| <p>Key Content to be learned:</p> <p>D&amp;T Design 1- Use research and exploration, such as the study of different cultures, to identify and understand user needs.</p> <p>D&amp;T Design 2- Identify and solve their own design problems and understand how to reformulate problems given to them.</p> <p>D&amp;T Design 3- Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.</p> <p>D&amp;T Design 5- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p> | <p>Key Content to be learned:</p> <p>D&amp;T Make 1- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.</p> <p>D&amp;T Evaluate 3- Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups</p> <p>D&amp;T Technical Knowledge 1- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.</p> <p style="text-align: center;">DESKTOP TOY BEGINS WEEK 6</p> <p>D&amp;T Design 1- Use research and exploration, such as the study of different cultures, to identify and understand user needs.</p> <p>D&amp;T Design 2- Identify and solve their own design problems and understand how to reformulate problems given to them.</p> <p>D&amp;T Design 3- Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.</p> <p>D&amp;T Design 5- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p> | <p>Key Content to be learned:</p> <p>D&amp;T Design 5- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p> <p>D&amp;T Make 1- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.</p> <p>D&amp;T Evaluate 3- Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups</p> <p>D&amp;T Technical Knowledge 1- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.</p> |
| <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Write Like a Designer - Design Specification</li> <li>• Design Ideas – Block Print Ideas x 5</li> </ul>   | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Practical Outcome – Cushion Cover</li> <li>• Write Like a Design Critique – Product Evaluation</li> </ul>  | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Practical Outcome – Desktop Toy</li> <li>• End of Year Examination</li> </ul>   |

Progression Model Y8 Design & Technology – CULTURAL TOY

| Module Title: Cultural Toy  | Module Title: Cultural Toy   | Module Title: Cultural Toy  |
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| <p>Learning Intent for this module:</p> <p style="text-align: center;"><b>To Design &amp; Manufacture a Culturally Inspired Character Doll</b></p> <p><i>This project focusses on the Design and Manufacture of felt doll/character that has been inspired a culture of the learner's choice. The doll will be manufactured using a combination of CAD/CAM and hand embroidery techniques with the application of E-Textiles. Learners will take inspiration from a culture and use imagery and symbolism associated with the chosen culture to enhance and embellish a doll or character of their choosing. Learners will be introduced to Techsoft 2D Design software to enable development of skills using CAD/CAM to assist in the production of pattern pieces as well as produce adornments and features that can be laser cut to create their cultural doll.</i></p> <ul style="list-style-type: none"> <li>• To produce a Design Brief</li> <li>• To create an Inspiration Board</li> <li>• To produce a range of design ideas with full annotation.</li> </ul> | <p>Learning Intent for this module:</p> <p style="text-align: center;"><b>To Design &amp; Manufacture a Culturally Inspired Character Doll</b></p> <p><i>This project focusses on the Design and Manufacture of felt doll/character that has been inspired a culture of the learner's choice. The doll will be manufactured using a combination of CAD/CAM and hand embroidery techniques with the application of E-Textiles. Learners will take inspiration from a culture and use imagery and symbolism associated with the chosen culture to enhance and embellish a doll or character of their choosing. Learners will be introduced to Techsoft 2D Design software to enable development of skills using CAD/CAM to assist in the production of pattern pieces as well as produce adornments and features that can be laser cut to create their cultural doll.</i></p> <ul style="list-style-type: none"> <li>• To produce a range of design ideas with full annotation.</li> <li>• To write a Manufacturing Specification</li> <li>• To develop Techsoft 2D design skills to produce template for the pattern pieces.</li> </ul> | <p>Learning Intent for this module:</p> <p style="text-align: center;"><b>To Design &amp; Manufacture a Culturally Inspired Character Doll</b></p> <p><i>This project focusses on the Design and Manufacture of felt doll/character that has been inspired a culture of the learner's choice. The doll will be manufactured using a combination of CAD/CAM and hand embroidery techniques with the application of E-Textiles. Learners will take inspiration from a culture and use imagery and symbolism associated with the chosen culture to enhance and embellish a doll or character of their choosing. Learners will be introduced to Techsoft 2D Design software to enable development of skills using CAD/CAM to assist in the production of pattern pieces as well as produce adornments and features that can be laser cut to create their cultural doll.</i></p> <ul style="list-style-type: none"> <li>• To develop Techsoft 2D design skills to produce template for the pattern pieces.</li> <li>• To use a range of materials, components, tools, equipment, techniques and processes confidently and safely</li> <li>• To Analyse and Evaluate a Final Outcome</li> </ul> |
| <p>Key Content to be learned:</p> <p>D&amp;T Design 1- Use research and exploration, such as the study of different cultures, to identify and understand user needs.<br/>D&amp;T Design 2- Identify and solve their own design problems and understand how to reformulate problems given to them.</p>   | <p>Key Content to be learned:</p> <p>D&amp;T Design 5- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.<br/>D&amp;T Make 1- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.</p>   | <p>Key Content to be learned:</p> <p>D&amp;T Make 1- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.<br/>D&amp;T Evaluate 3- Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups</p>  |

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| <p>D&amp;T Design 3- Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.</p> <p>D&amp;T Design 5- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p> <p>D&amp;T Technical Knowledge 1- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.</p> <p>D&amp;T Technical Knowledge 3- Understand how more advanced electrical and electronic systems can be powered and used in their products.</p> | <p>D&amp;T Technical Knowledge 1- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.</p> <p>D&amp;T Technical Knowledge 3- Understand how more advanced electrical and electronic systems can be powered and used in their products.</p> | <p>D&amp;T Technical Knowledge 1- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.</p> <p>D&amp;T Technical Knowledge 3- Understand how more advanced electrical and electronic systems can be powered and used in their products.</p> |
| <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Inspiration Board</li> <li>• Writing Like a Designer</li> </ul>  | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Writing Like a Designer</li> <li>• Pattern Pieces</li> </ul>   | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Writing Like a Designer - Evaluation</li> <li>• END OF YEAR EXAMINATION</li> </ul>   |

Progression Model – Y9 Design & Technology

| Module Title: Pocket Mirror & Pouch  | Module Title: Fragrance Diffuser & Packaging   | Module Title: Zipped Cosmetic/Stationary Bag   |
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| <p>Learning Intent for this module:</p> <p><b>“To Design and Manufacture A Pocket Mirror and Pouch”</b></p> <ul style="list-style-type: none"> <li>• DEFINE the features and characteristics of a range of DESIGN MOVEMENTS</li> <li>• DEMONSTRATE DESIGN THINKING SKILLS by creating a mind map of possible themes for a pocket mirror and pouch</li> <li>• DEVELOP ANALYSIS SKILLS by COMPARING design movements to help inform choices</li> <li>• Discover the key to design innovation</li> <li>• Demonstrate creativity by generating x4 innovative design ideas for a compact mirror AND felt pouch</li> </ul> | <p>Learning Intent for this module:</p> <p><b>“To Design and Manufacture A Fragrance Diffuser and Packaging”</b></p> <ul style="list-style-type: none"> <li>• Discover what is meant by ‘Brand Identity’ and ‘Target Market’</li> <li>• Discover how to analyse relevant existing products</li> <li>• Develop analytical skills using ACCESSFMM</li> <li>• Discover the difference between a bitmap and a vector</li> <li>• Demonstrate creativity by producing at least 4 different ideas based on a chose theme</li> <li>• Develop 2D Design skills further by vectorising images to represent a chosen brand, and experimenting with a range of techniques</li> </ul> | <p>Learning Intent for this module:</p> <p><b>“To Design and Manufacture A Cosmetics/Stationary Zipped Bag”</b></p> <ul style="list-style-type: none"> <li>• Discover what a zipped bag is</li> <li>• Discover what is meant by drawing to scale</li> <li>• Demonstrate understanding of designing in detail by completing a design ideas page and the pattern template with annotation of any key additional features such as hand/machine embroidery.</li> <li>• Develop understanding of ACCESSFMMSMCE</li> <li>• Discover what is meant by a Manufacturing Specification</li> <li>• Develop planning and manufacturing skills by drawing out a Template and marking out fabric.</li> </ul> |

- Develop visual communication skills by rendering design ideas
- Discover the importance of an end-user
- Demonstrate analysis skills by analysing each design idea
- Develop literacy skills by writing an in-depth analysis of each design idea
- Discover how to achieve accurate dimensions with CAD
- Demonstrate the ability to work with accuracy using 2D Design to create a CAD drawing
- Develop numeracy skills by working with exact dimensions
- Discover how crucial tolerances are in CAD
- Discover what CNC means
- Demonstrate understanding of CNC manufacturing by creating a flow chart of how the product will be manufactured
- Develop understanding of Quality Control and Assurance processes used in manufacturing
- Discover what fibres are
- Develop the product by using the success criteria to maximise attainment
- Discover a key decorating technique widely used in textiles
- Demonstrate understanding of the applique technique by developing a suitable design
- Develop sewing skills by working with accuracy to create an applique feature
- Discover why following a particular sequence is important
- Demonstrate sewing skills by creating an accurate and consistent blanket stitch
- Develop practical skills by constructing a felt pouch
- Develop practical skills by using more advance complex stitches

- Discover how 'critiques' are used in the design industry to improve idea generation
- Discover how to prepare CAD drawings in preparation for cutting on the Laser cutter
- Demonstrate understanding of the limitations of the materials provided
- Discover how acrylic products are manufactured in industry using a laser cutter
- Develop CAM practical skills by using the laser cutter with increased independence.
- Discover what makes successful packaging
- Develop packaging designs for a perfume diffuser
- Discover what is meant by Quality Control
- Demonstrate how Quality Control checks are used when assembling a perfume diffuser
- Develop understanding of the working characteristics of acrylic and solvent cement
- Discover how vacuum forming is used to produce packaging
- Demonstrate knowledge and understanding by producing a high quality final product.
- Develop evaluative skills by using the success criteria to assess an outcome.

- Demonstrate understanding of the need for detailed step by step planning by writing a Manufacturing Specification
- Discover the limitations and constraints of the project- size of fabrics/zip.
- Develop decorative skills by applying the design using neoprene block print and following illustrated plan
- Demonstrate skills of block printing by completing print on main fabric, following design
- Develop surface decoration skills by using hand embroidery and machine embroidery on main fabric
- Discover how to attach a zip correctly to a good standard, following the teacher demonstration and guidelines
- Demonstrate surface decoration skills by using hand embroidery and machine embroidery on main fabric, following your design
- Develop sewing construction skills by attaching a zip correctly to a good standard, following the teacher demonstration and guidelines
- Discover how to complete the construction of bag by sewing the sides using the sewing machine
- Discover how to plan the correct stages of making for bag and the importance of QUALITY CONTROL
- Add any further embellishment/trims by using hand sewing skills
- Evaluate finished bag using ACCESSFMMSMCE

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| <ul style="list-style-type: none"> <li>• Demonstrate evaluation skills by critically evaluating learning over the last 12 weeks</li> <li>• Develop literacy and critical writing skills by creating a 'Dear Me Evaluation'</li> </ul>   |   |   |
| <p>Key Content to be learned:</p> <p>D&amp;T Design 1 - use research and exploration, such as the study of different cultures, to identify and understand user needs</p> <p>D&amp;T Design 2 - identify and solve their own design problems and understand how to reformulate problems given to them</p> <p>D&amp;T Design 3 - develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations</p> <p>D&amp;T Design 4 - use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses</p> <p>D&amp;T Design 5 - develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools</p> <p>D&amp;T Make 1 - select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture</p> <p>D&amp;T Make 2 - select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties</p> <p>D&amp;T Evaluate 1 - analyse the work of past and present professionals and others to develop and broaden their understanding</p> <p>D&amp;T Evaluate 2 - investigate new and emerging technologies</p> <p>D&amp;T Evaluate 3 - test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups</p> <p>D&amp;T Evaluate 4 - understand developments in design and technology, its impact on individuals, society and the environment, and the</p> | <p>Key Content to be learned:</p> <p>D&amp;T Design 1 - use research and exploration, such as the study of different cultures, to identify and understand user needs</p> <p>D&amp;T Design 2 - identify and solve their own design problems and understand how to reformulate problems given to them</p> <p>D&amp;T Design 3 - develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations</p> <p>D&amp;T Design 4 - use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses</p> <p>D&amp;T Design 5 - develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools</p> <p>D&amp;T Make 1 - select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture</p> <p>D&amp;T Make 2 - select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties</p> <p>D&amp;T Evaluate 1 - analyse the work of past and present professionals and others to develop and broaden their understanding</p> <p>D&amp;T Evaluate 2 - investigate new and emerging technologies</p> <p>D&amp;T Evaluate 3 - test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups</p> <p>D&amp;T Evaluate 4 - understand developments in design and technology, its impact on individuals, society and the environment, and the</p> | <p>Key Content to be learned:</p> <p>D&amp;T Design 1 - use research and exploration, such as the study of different cultures, to identify and understand user needs</p> <p>D&amp;T Design 2 - identify and solve their own design problems and understand how to reformulate problems given to them</p> <p>D&amp;T Design 3 - develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations</p> <p>D&amp;T Design 4 - use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses</p> <p>D&amp;T Design 5 - develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools</p> <p>D&amp;T Make 1 - select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture</p> <p>D&amp;T Make 2 - select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties</p> <p>D&amp;T Evaluate 1 - analyse the work of past and present professionals and others to develop and broaden their understanding</p> <p>D&amp;T Evaluate 2 - investigate new and emerging technologies</p> <p>D&amp;T Evaluate 3 - test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups</p> <p>D&amp;T Evaluate 4 - understand developments in design and technology, its impact on individuals, society and the environment, and the</p> |



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| responsibilities of designers, engineers and technologists<br>D&T Technical Knowledge 1 - understand and use the properties of materials and the performance of structural elements to achieve functioning solutions | responsibilities of designers, engineers and technologists<br>D&T Technical Knowledge 1 - understand and use the properties of materials and the performance of structural elements to achieve functioning solutions | responsibilities of designers, engineers and technologists<br>D&T Technical Knowledge 1 - understand and use the properties of materials and the performance of structural elements to achieve functioning solutions |
| Key tasks for this module: <ul style="list-style-type: none"> <li>• Design Ideas X 4</li> <li>• Writing Like a Designer – Dear Me Evaluation</li> </ul>  | Key tasks for this module: <ul style="list-style-type: none"> <li>• Writing Like a Critique</li> <li>• Practical – Fragrance Diffuser and Packaging</li> </ul>   | Key tasks for this module: <ul style="list-style-type: none"> <li>• Writing Like a Designer</li> <li>• END OF YEAR EXAMINATION</li> </ul>  |

Progression Model – Y10 Design & Technology

| Module Title:<br>Core Technical Principles 1.1 and 1.2   | Module Title:<br>Core Technical Principles 1.3, 1.4 and 1.5  | Module Title:<br>Core Technical Principles 1.6 and Non-Exam Assessment   |
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| <p>Learning Intent for this module:</p> <p>Students will explore the topic of new technologies and how they are transforming the way we live in many ways, from the way we communicate, to the way we manufacture and use products we produce. As new technologies emerge, we need to consider how this will affect our ever-changing world. Students will appreciate that without energy most of the things we do would be impossible. Over the last 100 years, we have become increasingly dependent on electricity and the energy sources that we rely on to provide it. Students need to understand the consequences of using excessive amounts of fossil fuels and the importance of considering the use of alternative renewable energy sources.</p> | <p>Learning Intent for this module:</p> <p>Students will investigate how new material are developed to have properties that are useful when designing and making products. Students will gain an understanding of how the new materials are produced through the invention of new or improved processes. Students will be introduced to a Systems Approach in designing products. They will learn about input devices, processors and microcontrollers as well as output devices and how they form systems within modern day products and services. Students will engage in theory around the fundamental of mechanisms and their importance in making jobs much easier to do. They will develop an understanding of different types of motion and explore levers and linkages. They will appreciate the need for simple gear trains and cams and followers. Students will gain an insight into the benefits and application of a range of mechanisms including, chain and sprocket, rack and pinion, crank and slider</p> | <p>Learning Intent for this Module:</p> <p>Students will study a range of materials and explore their working properties. Materials can be split into different groups according to their origins. These materials all have their own working properties. Students need to appreciate and embed an understanding of why materials are selected for specific uses based on their properties. Students will explore materials and their characteristics to allow them to make informed decisions when selecting materials for the design, development and manufacture of products. Students will be introduced to the NEA from 1<sup>st</sup> June. The NEA accounts for 50% of the AQA Design and Technology GCSE. To complete the NEA students will need to complete a design and make task including the manufacture of a prototype that fulfils its purpose and meets the needs of the intended user. Students will complete Section A of the NEA which will cover 4 areas of research as they explore their chosen contextual challenge set by AQA.</p> |

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|   | as well as understanding the need for pulley systems to reduce workload.  |   |
| <p>Key Content to be learned:</p> <p><b>1.1 – New and Emerging Technologies</b></p> <ul style="list-style-type: none"> <li>• INDUSTRY</li> <li>• AUTOMATION</li> <li>• ROBOTICS</li> <li>• ENTERPRISE</li> <li>• INNOVATION</li> <li>• CROWDFUNDING</li> <li>• VIRTUAL MARKETING AND RETAILING</li> <li>• CO-OPERATIVES</li> <li>• FAIRTRADE</li> <li>• SUSTAINABILITY</li> <li>• FINITE RESOURCE</li> <li>• NON-FINITE RESOURCE</li> <li>• ECOLOGICAL FOOTPRINT</li> <li>• SOCIAL FOOTPRINT</li> <li>• DISPOSAL OF WASTE</li> <li>• LANDFILL</li> <li>• RESOURCE RECOVERY</li> <li>• ENERGY RECOVERY</li> <li>• INCINERATION</li> <li>• PEOPLE</li> <li>• TECHNOLOGY PUSH</li> <li>• MARKET PULL</li> <li>• CHANGING JOB ROLES</li> <li>• CULTURE</li> <li>• FASHIONS</li> <li>• SOCIETY</li> <li>• ENVIRONMENT</li> <li>• PRODUCTION TECHNIQUES AND SYSTEMS</li> <li>• COMPUTER AIDED DESIGN (CAD)</li> <li>• COMPUTER AIDED MANUFACTURE (CAM)</li> <li>• FLEXIBLE MANUFACTURING SYSTEM (FMS)</li> <li>• COMPUTER NUMERICALLY CONTROLLED (CNC)</li> <li>• JUST IN TIME (JIT)</li> </ul> | <p>Key Content to be learned:</p> <p><b>1.3 Developments in New Materials</b></p> <ul style="list-style-type: none"> <li>• MODERN MATERIALS</li> <li>• GRAPHENE</li> <li>• METAL FOAM</li> <li>• TITANIUM</li> <li>• COATED METALS</li> <li>• LIQUID CRYSTAL DISPLAY</li> <li>• NANOMATERIALS</li> <li>• TEFLON</li> <li>• CORN STARCH POLYMERS</li> <li>• SMART MATERIALS</li> <li>• THERMOCHROMIC PIGMENTS</li> <li>• SHAPE MEMORY ALLOYS (SMAs)</li> <li>• PHOTOCHROMIC PIGMENTS</li> <li>• COMPOSITES</li> <li>• CONCRETE</li> <li>• GLASS FIBRE REINFORCED POLYMER (GRP)</li> <li>• CARBON FIBRE REINFORCED POLYMER (CRP)</li> <li>• TECHNICAL TEXTILES</li> <li>• CONDUCTIVE FABRICS</li> <li>• FIRE-RESISTANT FABRICS</li> <li>• KEVLAR</li> <li>• GORE-TEX</li> <li>• MICROFIBRES</li> </ul> <p><b>1.4 Understanding a Systems Approach when Designing</b></p> <ul style="list-style-type: none"> <li>• A SYSTEMS APPROACH EXPLAINED</li> <li>• SYSTEM DIAGRAM</li> <li>• INPUT DEVICES</li> <li>• LIGHT DEPENDENT RESISTOR (LDR)</li> <li>• THERMISTOR (TEMPERATURE SENSOR)</li> <li>• SWITCHES AND PRESSURE SENSORS</li> <li>• PROCESSES</li> </ul> | <p>Key Content to be learned:</p> <p><b>1.6 Materials and their working properties</b></p> <p><b>PAPERS AND BOARDS</b></p> <p>Papers including:</p> <ul style="list-style-type: none"> <li>• bleed proof</li> <li>• cartridge paper</li> <li>• grid</li> <li>• layout paper</li> <li>• tracing paper</li> </ul> <p>Boards including:</p> <ul style="list-style-type: none"> <li>• corrugated card</li> <li>• duplex board</li> <li>• foil lined board</li> <li>• foam core board</li> <li>• ink jet card</li> <li>• solid white board.</li> </ul> <p><b>NATURAL TIMBERS AND MANUFACTURED BOARDS</b></p> <p>Hardwoods including:</p> <ul style="list-style-type: none"> <li>• ash</li> <li>• beech</li> <li>• mahogany</li> <li>• oak</li> <li>• balsa</li> </ul> <p>Softwoods including:</p> <ul style="list-style-type: none"> <li>• larch</li> <li>• pine</li> <li>• spruce</li> </ul> <p>Manufactured boards including:</p> <ul style="list-style-type: none"> <li>• medium density fibreboard (MDF)</li> <li>• plywood</li> <li>• chipboard.</li> </ul> |

- LEAN MANUFACTURING
- HOW THE CRITICAL EVALUATION OF NEW AND EMERGING TECHNOLOGIES INFORMS DESIGN DECISIONS
- PLANNED OBSOLESCENCE
- DESIGN FOR MAINTENANCE
- ETHICS
- THE ENVIRONMENT
- END OF LIFE DISPOSAL

## 1.2 – Energy Generation and Storage

- FOSSIL FUELS
- GLOBAL WARMING
- COAL
- NATURAL GAS
- OIL
- NUCLEAR POWER
- RENEWABLE ENERGY
- WIND
- SOLAR
- TIDAL (MARINE)
- WATER (HYDROELECTRICITY)
- WAVE
- BIOMASS
- ENERGY STORAGE SYSTEMS
- KINETIC PUMPED STORAGE SYSTEMS
- MECHANICAL ENERGY STORAGE
- ELECTRICAL ENERGY STORAGE
- CAPACITORS
- BATTERIES

- PROGRAMMING MICROCONTROLLERS
- OUTPUTS
- LAMPS AND LIGHT EMITTING DIODES (LEDs)
- BUZZERS AND SPEAKERS

## 1.5 Mechanical Devices

- MECHANISMS
- DIFFERENT TYPES OF MOVEMENT
- LINEAR MOTION
- RECIPROCATING MOTION
- ROTARY MOTION
- OSCILLATING MOTION
- CHANGING MAGNITUDE AND DIRECTION OF FORCE
- LEVERS
- LOAD
- EFFORT
- FULCRUM
- FIRST ORDER LEVER
- SECOND ORDER LEVER
- THIRD ORDER LEVER
- LINKAGES
- ROTARY SYSTEMS
- CAM
- SLIDER
- FOLLOWER
- SIMPLE GEAR TRAINS
- GEAR TRAIN
- TORQUE
- DRIVER GEAR
- DRIVEN GEAR
- IDLER
- VELOCITY RATIO
- FRICTION
- RACK AND PINION MECHANISM
- CRANK AND SLIDER MECHANISM
- CHAIN AND SPROCKET MECHANISM
- PULLEYS AND BELTS

## METALS AND ALLOYS

Ferrous metals including:

- low carbon steel
- cast Iron
- high carbon/tool steel

Non ferrous metals including:

- aluminium
- copper
- tin
- zinc

Alloys including:

- brass
- stainless steel
- high speed steel.

## POLYMERS

Thermoforming including:

- acrylic (PMMA)
- high impact polystyrene (HIPS)
- high density polythene (HDPE)
- polypropylene (PP)
- polyvinyl chloride (PVC)
- polyethylene terephthalate (PET)

Thermosetting including:

- epoxy resin (ER)
- melamine-formaldehyde (MF)
- phenol formaldehyde (PF)
- polyester resin (PR)
- urea-formaldehyde (UF).

## TEXTILES

Natural fibres including:

- cotton
- wool
- silk

Synthetic fibres including:

- polyester

- polyamide (nylon)
  - elastane (lycra)
- Blended and mixed fibres including:
- cotton/polyester
- woven including:
- plain weave
- Non-woven including:
- bonded fabrics
  - felted fabrics
- Knitted textiles including:
- knitted fabrics.

In relation to the main categories outlined above (not the specific materials identified), students should know and understand physical properties such as:

- absorbency (resistance to moisture)
- density
- fusibility
- electrical and thermal conductivity.

In relation to the main categories outlined above (not the specific materials identified), students should know and understand working properties such as:

- strength
- hardness
- toughness
- malleability
- ductility and elasticity.

**NEA - AO1 – Identify, Investigate and Outline Design Possibilities**

**Section A – Identifying and Investigating Design Possibilities**

- Page 1 – Exploration of Chosen Contextual Challenge
- Page 2 – Analysis of Chosen Contextual Challenge
- Page 3 – User Profile, Target Market and Market Place Profile
- Page 4 – Investigation of Existing Products

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|  |   | Page 5 – Investigating the work of others - Moodboard   |
| <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• 1.1 Automation – Incineration</li> <li>• 1.1 People – Lean Manufacturing</li> <li>• 1.1 Planned Obsolescence – End of Life Disposal</li> <li>• 1.2 Energy Generation and Storage</li> </ul> | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• 1.3 Developments in New Materials</li> <li>• 1.4 Understanding a Systems approach when designing</li> <li>• 1.5 Mechanisms – Linkages</li> <li>• 1.5 Rotary Systems – Pulleys and Belts</li> </ul> | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• 1.6 Papers and Boards &amp; Natural and Manufactured Boards</li> <li>• 1.6 Metals and Alloys &amp; Polymers &amp; Textiles</li> <li>• NEA Section 1 Assessment</li> <li>• END OF YEAR EXAMINATION</li> </ul> |

Progression Model – Y11 Design & Technology

| Module Title:<br>NEA  | Module Title:<br>NEA and Specialist Technical Principles 2.1 – 2.4  | Module Title:<br>Specialist Technical Principles 2.5 – 2.9 and Revision   |
|---|---|---|
| <p>Learning Intent for this module:</p> <p>Students will cover sections B, C and D from their NEA in this module. They will produce a Design Brief and Specification that will then be used to guide and focus their generation of a wide range of design ideas. Idea generation will then be analysed and students will then move on to their design development to include a range of modelling and testing to allow the iterative design process to be fully exploited. They will produce revised iterations of their developed idea before they move on to produce a manufacturing specification that will inform them as they manufacture a prototype product.</p> | <p>Learning Intent for this module:</p> <p>Students will complete sections E and F in this module. Fully realising their design idea into a feasible outcome fit for their identified intended user. Students will then carryout a full prototype evaluation against their original design specification as well as gather 3<sup>rd</sup> party feedback from their intended user and target market. Students will then formalise their findings and generate a proposal for any modifications that need to be made in light of feedback and suggest improvements to be made to the product to allow for feasibility of mass production of their product in the future.</p> | <p>Learning Intent for this module:</p> <p>Students will recognise that materials are chosen based on their properties, and therefore their suitability for a specific job. The cost of materials is also a serious consideration and students need to understand the importance of this when products need to be produced in mass. Students will learn that materials are supplied in many common shapes and forms. It is vital they understand these stock forms when designing and planning projects and when selecting materials for use. Students will have a greater understanding of the standard forms and sizes available and the impact</p> |

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|  | <p>Students will learn that there are many different materials and components available and choosing the correct ones for a product will be vital in ensuring its success with consumers.</p> <p>They will gain an understanding of forces and stresses and appreciate that designer therefore need to understand the forces or external loads that can act upon any structure they design and make.</p> <p>Students will discuss the impact that we have on the environment and people due to the choices that we make about products. They will gain a deeper appreciation of the “footprints” and the lasting impression we are having on both people and places we touch and the defect we are having on them.</p> <p>Students will discover where the materials we use originate from and that they have the knowledge of the processes that have been subject to before we receive them in a useable state. Students can then make more informed decisions around the materials that they choose to use and appreciate the financial, moral, ethical and environmental concerns associated with such materials.</p> | <p>standard sizes and shapes have on the reduction in price as they are produced in large quantities.</p> <p>Students will learn how products are produced in different volumes and why different manufacturing methods are used for different production volumes.</p> <p>Students will learn about the use of production aids in the manufacture of products. They will gain an insight into how materials are cut and shaped within a tolerance. They will explore a variety of commercial processes and discover how quality control is used during manufacture.</p> <p>Students will learn about a range of finishes available for a variety of materials. They will understand how to prepare material surfaces before applying a finish. Students will appreciate that a finish can be used for aesthetical as well as functional purposes. They will learn about why products are finished and how the finish can increase the durability of the material, prevent decay and improve the working characteristics of the material.</p> |
| <p>Key Content to be learned:</p> <p><b>NEA - AO1 – Identify, Investigate and Outline Design Possibilities</b></p> <p><b>Section B – Identifying and Investigating Design Possibilities</b></p> <p><b>Students will complete Section B of their NEA.</b><br/>Section B requires students to produce a Design Brief and Specification.</p> <p>Page 6 – Design Brief and Specification</p> <p><b>NEA – AO2 – Design and Make Prototypes that are fit for purpose</b></p> | <p>Key Content to be learned:</p> <p><b>NEA – AO2 – Design and Make Prototypes that are fit for purpose</b></p> <p><b>Section E –Realising Design Ideas</b></p> <p><b>Students will complete Section E of their NEA.</b><br/>Section E requires students to Manufacture their prototype</p> <p>Students will produce either one or multiple iterations of their prototype depending on the nature of the product designed.</p> <p><b>NEA – AO3 – Analysing and Evaluating</b></p>   | <p>Key Content to be learned:</p> <p>Specialist Technical Principles</p> <p><b>2.5 – Using and Working with Materials</b></p> <p>Students must know and understand how different properties of materials and components are used in commercial products, how properties influence use and how properties affect performance.</p> <p>Students must know and understand the physical and mechanical properties relevant to commercial products in their chosen area as follows:</p>  |

## Section C –Generating Design Ideas

### Students will complete Section C of their NEA.

Section C requires students to complete the Exploration of Ideas. They need to produce a minimum of 12 distinctly different design ideas.

Page 7 – Exploration of Ideas 1

Page 8 – Exploration of Ideas 1

Page 9 – Exploration of Ideas 1

Page 10 – Analysis of Ideas

### NEA – AO2 – Design and Make Prototypes that are fit for purpose

## Section D –Developing Design Ideas

### Students will complete Section D of their NEA.

Section D requires students to produce the development section of their NEA. This requires students to develop a chosen idea and explore how the product will be constructed, consideration of aesthetics, sizes, function and surface finishes.

Page 11 – Development 1

Page 12 – Development 2

Page 13 – Development 3

Page 14 - Development 4

Page 15 – Manufacturing Specification

## Section F – Analysing and Evaluating

### Students will complete Section F of their NEA.

Section F requires students to Evaluate their prototype

Students will carry out a personal evaluation linking to the original design specification they set themselves earlier in the design process. They will also interview their user and gather 3<sup>rd</sup> part opinions and feedback. Students will then draw conclusions and suggest any modifications or improvements they would like to make in light of the evaluation and set out their suggestions if the prototype were to go into mass production.

## Specialist Technical Principles

### 2.1 – Selection of Materials and Components

Functionality: application of use, ease of working.

Aesthetics: surface finish, texture and colour.

Environmental factors: recyclable or reused materials.

Availability: ease of sourcing and purchase.

Cost: bulk buying.

Social factors: social responsibility.

Cultural factors: sensitive to cultural influences.

Ethical factors: purchased from ethical sources such as FSC.

### 2.2 – Forces and Stresses

Tension, compression, bending, torsion and shear.

### 2.3 – Ecological and Social Footprint

Ecological issues in the design and manufacture of products

- Papers and boards (flyers/leaflets and card based food packaging).

- Timber based materials (traditional timber children's toys and flat pack furniture).

- Metal based materials (cooking utensils and hand tools).

- Polymers (polymer seating and electrical fittings).

- Textile based materials (sportswear and furnishings).

- Electronic and mechanical systems (motor vehicles and domestic appliances).

## The modifications of materials for specific purposes

- Additives to prevent moisture transfer (paper and boards).

- Seasoning to reduce moisture content of timbers (timber based materials).

- Annealing to soften material to improve malleability (metal based materials).

- Stabilisers to resist UV degradation (polymers).

- Flame retardants reduce combustion and fire hazards (textile based materials).

- Photosensitive PCB board in PCB manufacture and anodizing aluminium to improve surface hardness (electronic and mechanical systems).

## How to shape and form using cutting, abrasion and addition

- Papers and boards (how to cut, crease, score, fold and perforate card).

- Timber based materials (how to cut, drill, chisel, sand and plane).

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|  | <p>Deforestation, mining, drilling and farming.<br/> Mileage of product from raw material source, manufacture, distribution, user location and final disposal.<br/> That carbon is produced during the manufacture of products.</p> <p>The 6 R's<br/> Reduce<br/> Refuse<br/> Re-use<br/> Repair<br/> Recycle<br/> Rethink.</p> <p>Social issues in the design and manufacture of products.<br/> Safe working conditions; reducing oceanic/ atmospheric pollution and reducing the detrimental (negative) impact on others.</p> <p><b>2.4 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> <ul style="list-style-type: none"> <li>• Paper and board (how cellulose fibres are derived from wood and grasses and converted into paper).</li> <li>• Timber based materials (Seasoning, conversion and creation of manufactured timbers).</li> <li>• Metal based materials (extraction and refining).</li> <li>• Polymers (refining crude oil, fractional distillation and cracking).</li> <li>• Textile based materials (obtaining raw material from animal, chemical and vegetable sources, processing and spinning).</li> </ul> | <ul style="list-style-type: none"> <li>• Metal based materials (how to cut, drill, turn, mill, cast, bronze and weld).</li> <li>• Polymers (how to cut, drill, cast, deform, print and weld).</li> <li>• Textile based materials (how to sew, pleat, gather, quilt and pipe).</li> <li>• Electronic and mechanical systems (how to cut, drill and solder).</li> </ul> <p><b>2.6 Stock Forms, Types and Sizes</b></p> <p><b>Commercially available types and sizes of materials and components.</b></p> <p>Papers and boards:</p> <ul style="list-style-type: none"> <li>• sheet, roll and ply</li> <li>• sold by size eg A3, thickness, weight and colour</li> <li>• standard components eg fasteners, seals and bindings</li> <li>• cartridge paper and corrugated card.</li> </ul> <p>Timber based materials:</p> <ul style="list-style-type: none"> <li>• planks, boards and standard moldings</li> <li>• sold by length, width, thickness and diameter</li> <li>• standard components eg woodscrews, hinges, KD fittings.</li> </ul> <p>Metal based materials:</p> <ul style="list-style-type: none"> <li>• sheet, rod, bar and tube</li> <li>• sold by length, width, thickness and diameter</li> <li>• standard components eg rivets, machine screws, nuts, and bolts.</li> </ul> <p>Polymers:</p> <ul style="list-style-type: none"> <li>• sheet, rod, powder, granules, foam and films</li> <li>• sold by length, width, gauge and diameter</li> </ul> |
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- standard components eg screws, nuts and bolts, hinges.

Textile based materials:

- yarns and fabrics
- sold by roll size, width, weight and ply
- standard components eg zips, press studs, velcro.

Electrical and mechanical components:

- sold by quantity, volt and current rating
- standard components eg E12 resistor series, dual in line IC packages (DIL), microcontrollers (PIC).

### **2.7 Scales of Production**

How products are produced in different volumes. The reasons why different manufacturing methods are used for different production volumes:

- prototype
- batch
- mass
- continuous.

### **2.8 Specialist techniques and processes**

#### **The use of production aids**

How to use measurement/reference points, templates, jigs and patterns where suitable.

#### **Tools, equipment and processes**

A range of tools, equipment and processes that can be used to shape, fabricate, construct and assemble high quality prototypes, as appropriate to the materials and/or components being used including: wastage, such as:

- die cutting
- perforation

- turning
  - sawing
  - milling
  - drilling
  - cutting and shearing
- addition, such as:
- brazing
  - welding
  - lamination
  - soldering
  - 3D printing
  - batik
  - sewing
  - bonding
  - printing
- deforming and reforming such as:
- vacuum forming
  - creasing
  - pressing
  - drape forming
  - bending
  - folding
  - blow moulding
  - casting
  - injection moulding
  - extrusion.

**How materials are cut shaped and formed to a tolerance**

The manufacture to minimum and maximum measurements.  
Extracting information on tolerances and using it to control quality and make a prototype.

**Commercial processes**

Papers and boards (offset lithography and die cutting).  
• Timber based materials (routing and turning).

- Metal based materials (milling and casting).
- Polymers (injection molding and extrusion).
- Textile based materials (weaving, dyeing and printing).
- Electrical and mechanical systems (pick and place assembly and flow soldering).

**The application and use of Quality Control to include measurable and quantitative systems used during manufacture**

- Papers and boards (registration marks).
- Timber based materials (dimensional accuracy using go/no go fixture).
- Metal based materials (dimensional accuracy using a depth stop).
- Polymers (dimensional accuracy by selecting correct laser settings).
- Textile based materials (dimensional accuracy checking a repeating print against an original sample).
- Electrical and mechanical systems (UV exposure, developing and etching times in PCB manufacture).

**2.9 Surface treatments and finishes**

The preparation and application of treatments and finishes to enhance functional and aesthetic properties.

- Papers and boards (printing, embossing and UV varnishing).
- Timber based materials (painting, varnishing and tanning).
- Metal based materials (dip coating, powder coating and galvanizing).
- Polymers (polishing, printing and vinyl decals).
- Textile based materials (printing, dyes and stain protection).
- Electronic and mechanical systems (PCB lacquering, and lubrication).

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|   |  | Surface treatments to inhibit corrosion and oxidation.<br><b>REVISION</b>   |
| Key tasks for this module: <ul style="list-style-type: none"> <li>1 Section B – Producing a Design Brief and Specification</li> <li>2 Section C – Generating Design Ideas</li> <li>3 Section D – Developing Design Ideas</li> <li>4 MOCK 1</li> </ul> | Key tasks for this module: <ul style="list-style-type: none"> <li>1 Section E – Realising Design Ideas</li> <li>2 Section F – Evaluation</li> <li>3 Specialist Technical Principles - 2.1-2.4</li> <li>4 MOCK 2</li> </ul> | Key tasks for this module: <ul style="list-style-type: none"> <li>1 Specialist Technical Principles 2.5 – 2.9</li> <li>2 Retrieval Practice of Section 1.1 – 1.2</li> <li>3 Retrieval Practice of Section 1.3 – 1.4</li> <li>4 Retrieval Practice of Section 1.5 – 1.6</li> </ul> |

Progression Model Y12 – A Level Art & Design – Product Design and Textiles

| Module Title:<br>Component 1 – Mini Personal Investigation  | Module Title:<br>Component 2 – Externally Set Assignment - MOCK  | Module Title:<br>FINAL Component 1 – Personal Investigation  |
|---|--|--|
| Learning Intent for this module:<br><br>Learners are introduced to the course and offered a mini Component 1 Design and Make project. This allows learners understand the marking criteria and assessment objectives used in the course.  | Learning Intent for this module:<br><br>Learners are given an opportunity to sit a MOCK Component 2 – Externally set assignment. This will gain learners an insight into an externally set assignment that has to be completed in a given timeframe.   | Learning Intent for this module:<br><br>Learners are introduced to their FINAL Component 1 Personal Investigation. This will follow on from their trial in Module 1. This Component is worth 60% of their final grade.   |
| Key Content to be learned:<br><br>Learning Intent for this module:<br><br>Induction period <ul style="list-style-type: none"> <li>Introduction to the Assessment Objectives and how these will be interpreted and evidenced Component 1 Personal Investigation</li> <li>The essential elements required for Component 1 Personal Investigation</li> <li>Introduction to and development of the first Component 1 theme 'Environment'</li> <li>Focus: 2D mark-making and the formal elements in black and white and tones of grey</li> <li>Introduction to 3D using various materials</li> </ul> | Key Content to be learned:<br><br><b>MOCK Component 2 Externally Set Assignment</b> <ul style="list-style-type: none"> <li>Introduction to Component 2</li> <li>Launch of the Externally Set Assignment</li> <li>Focus will be on the theme set by Pearson Edexcel and the starting points given in the examination paper</li> <li>Selected starting points from the paper</li> <li>Ideas generation</li> <li>Plans for the preparatory period</li> <li>Sources relevant to the set theme</li> <li>Proposal or statement of intent</li> <li>Decision-making, ideas, media, materials for final work</li> <li>Full coverage of the Assessment Objectives</li> </ul> | Key Content to be learned:<br><br>Learning Intent for this module: <ul style="list-style-type: none"> <li>Introduction to the Assessment Objectives and how these will be interpreted and evidenced Component 1 Personal Investigation</li> <li>The essential elements required for Component 1 Personal Investigation</li> <li>Introduction to and development of the FINAL COMPONENT 1 THEME SELECTED BY STUDENTS</li> <li>Focus: 2D mark-making and the formal elements in black and white and tones of grey</li> <li>Introduction to 3D using various materials</li> <li>Introduction to colour, media, materials and processes</li> </ul> |

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| <ul style="list-style-type: none"> <li>● Introduction to colour, media, materials and processes</li> <li>● Objective and subjective use of colour</li> <li>● Contextual references</li> <li>● Critical review</li> <li>● Component 1 Personal Investigation</li> <li>● Introduction to composition</li> <li>● Viewpoints: interior / exterior</li> <li>● Focus will be on using colour in different ways for different effects, working from observation</li> <li>● Contextual sources will provide essential exemplars for each activity</li> <li>● Experimentation with wet and dry black and white and colour media, materials and techniques</li> <li>● Experimentation with 3D using a variety of materials</li> <li>● Proposal for final personal practical work</li> <li>● Contextual connections</li> <li>● Media, materials and techniques</li> <li>● Critical review</li> <li>● Focus will be on deciding on their composition, selecting media, materials and developing final work</li> <li>● Final outcome(s)</li> <li>● Supporting studies</li> <li>● Focus will be on completing final work and presenting supporting studies – sketchbooks and roughs</li> </ul> | <ul style="list-style-type: none"> <li>● Review of knowledge, skills and understanding learned in Component 1</li> <li>● Preparation for final 15-hour period of sustained focus</li> <li>● Final 15-hour period of sustained focus</li> </ul>   | <ul style="list-style-type: none"> <li>● Objective and subjective use of colour</li> <li>● Contextual references</li> <li>● Critical review</li> <li>● Component 1 Personal Investigation</li> <li>● Introduction to composition</li> <li>● Viewpoints: interior / exterior</li> <li>● Focus will be on using colour in different ways for different effects, working from observation</li> <li>● Contextual sources will provide essential exemplars for each activity</li> </ul> |
| <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>● Analysing the Work of Others</li> <li>● Designing in the Style of.....</li> <li>● Competency using 2D Design and Laser Cutter</li> <li>● Component 1A – Personal Investigation</li> <li>● Component 1B – MOCK Personal Study</li> </ul>   | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>● Selected starting points from the paper</li> <li>● Plans for the preparatory period</li> <li>● Sources relevant to the set theme</li> <li>● Proposal or statement of intent</li> <li>● Final Piece</li> </ul> | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>● Formulation of Focus for Component 1</li> <li>● Statement of Intent</li> <li>● Analysing the Work of Others</li> <li>● Sampling of Manufacturing Techniques</li> <li>● Designing in the Style of....</li> </ul>   |

Progression Model Y13 – A Level Art & Design – Product Design and Textiles

| Module Title:<br>FINAL Component 1 – Personal Investigation  | Module Title:<br>FINAL Component 1 – Personal Investigation<br>And<br>Component 2 – Externally Set Assignment   | Module Title:<br>FINAL Component 1 – Personal Investigation   |
|--|---|---|
| <p>Learning Intent for this module:</p> <p>Learners are to continue their FINAL Component 1 Personal Investigation. This will follow on from their trial in Module 1. This Component is worth 60% of their final grade.</p>  | <p>Learning Intent for this module:</p> <p>Learners are to continue their FINAL Component 1 Personal Investigation. This will follow on from their trial in Module 1. This Component is worth 60% of their final grade.</p> <p>Learners will sit Component 2 – Externally set assignment. This will be the learners final externally set assignment that has to be completed in a given timeframe. This component is worth 40% of their final grade</p>   | <p>Learning Intent for this module:</p> <p>Learners will finalise their FINAL Component 1 Personal Investigation. This Component is worth 60% of their final grade.</p>                 |
| <p>Key Content to be learned:</p> <ul style="list-style-type: none"> <li>● Experimentation with wet and dry black and white and colour media, materials and techniques</li> <li>● Experimentation with 3D using a variety of materials</li> <li>● Proposal for final personal practical work</li> <li>● Contextual connections</li> <li>● Media, materials and techniques</li> <li>● Critical review</li> <li>● Focus will be on deciding on their composition, selecting media, materials and developing final work</li> <li>● Final outcome(s)</li> <li>● Supporting studies</li> <li>● Focus will be on completing final work and presenting supporting studies – sketchbooks and roughs</li> </ul> | <p>Key Content to be learned:</p> <ul style="list-style-type: none"> <li>● Final outcome(s)</li> <li>● Supporting studies</li> <li>● Focus will be on completing final work and presenting supporting studies – sketchbooks and roughs</li> </ul> <p style="text-align: center;">FEBRUARY</p> <p>Component 2 Externally Set Assignment</p> <ul style="list-style-type: none"> <li>● Introduction to Component 2</li> <li>● Launch of the Externally Set Assignment</li> <li>● Focus will be on the theme set by Pearson Edexcel and the starting points given in the examination paper</li> <li>● Selected starting points from the paper</li> <li>● Ideas generation</li> <li>● Plans for the preparatory period</li> <li>● Sources relevant to the set theme</li> <li>● Proposal or statement of intent</li> <li>● Decision-making, ideas, media, materials for final work</li> </ul> | <p>Key Content to be learned:</p> <ul style="list-style-type: none"> <li>● Focus will be on completing final work and presenting supporting studies – sketchbooks and roughs</li> </ul> |

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|   | <ul style="list-style-type: none"> <li>• Full coverage of the Assessment Objectives</li> <li>• Review of knowledge, skills and understanding learned in Component 1</li> <li>• Preparation for final 15-hour period of sustained focus</li> <li>• Final 15-hour period of sustained focus</li> </ul> |   |
| <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Development of a solution</li> <li>• Modelling and Testing</li> <li>• Final Design</li> <li>• Final Component 1B – Personal Study</li> <li>• Manufacture of Final Outcome</li> </ul> | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Selected starting points from the paper</li> <li>• Plans for the preparatory period</li> <li>• Sources relevant to the set theme</li> <li>• Proposal or statement of intent</li> <li>• Final Piece</li> </ul>             | <p>Key tasks for this module:</p> <ul style="list-style-type: none"> <li>• Evaluation of Process and Outcome</li> <li>• Future Recommendations and Proposals</li> </ul> <p>May 17<sup>th</sup> Deadline</p> |