

Year 12	Term1 – Technical Principles : Metals	Term 2 – Technical Principles : Timbers	Term 3 – Technical Principles : Paper and Board/ composites/ Smart and Modern materials	Term 4 – Technical Principles : Polymers	Term 5 – NEA	Term 6 - NEA
Focused Practical Tasks	Aluminium Spinner Name plate casting Welded / dip coated flowers Riveted keyrings	A children's mechanical toy	Smart pop up books	Summer Fayre product	Identifying and investigating design possibilities - 20	Producing a design brief and specification - 10
	<p><i>3.1.1 Materials and their applications / 3.1.2 Performance characteristics of materials / 3.1.3 Enhancement of materials / 3.1.4 Forming, redistribution and addition processes / 3.1.4.5 The use of adhesives and fixings / 3.1.5 The use of finishes / 3.2.6 Selecting appropriate tools, equipment and processes / 3.2.7 Accuracy in design and manufacture</i></p> <p><b>3.1.7 Digital design and manufacture</b></p>	<p><b>3.1.10</b> Protecting designs and intellectual property <b>3.1.13</b> Enterprise and marketing in the development of products <i>3.1.1/ 3.1.2 / 3.1.3 / 3.1.4 3.1.4.5 / 3.1.5 / 3.2.6 / 3.2.7</i></p>	<p><b>3.1.6</b> Modern Industrial and commercial practice <i>3.1.1/ 3.1.2 / 3.1.3 / 3.1.4 3.1.4.5 / 3.1.5 / 3.2.6 / 3.2.7</i></p>	<p><b>3.2.8</b> Responsible Design <b>3.2.3.4</b> Product Lifecycle <b>3.1.11</b> Design for manufacturing, maintenance, repair and disposal <i>3.1.1/ 3.1.2 / 3.1.3 / 3.1.4 3.1.4.5 / 3.1.5 / 3.2.6 / 3.2.7</i></p>	<p><b>3.2.1</b> Design methods and processes <b>3.2.4</b> Design Processes <b>3.1.14</b> Design communication</p>	<p><b>3.1.8</b> The requirements for product design and development <b>3.1.12</b> Feasibility studies</p>
<b>Literacy/ numeracy</b>	<p>Dimensions and angles in the design of jigs, fixtures and templates. Determining quantities of materials Use of datum points and geometry when setting out design drawings. The use of tolerances in dimensioning Calculating speeds and times for machining. Interpretation of data from CFD or FEA testing Calculating volumes of 3D printed products, calculating time/speed for 3D printing Interpret statistical analyses to determine user needs and preferences. Use data related to human scale and proportion to determine product scale and dimensions</p>					
<b>Assessments</b>	<p>Metals Assessment based on NEA Practical skill criteria</p> <p>Metals and Materials Properties test</p>	<p>Timber Assessment based on NEA Practical skill criteria</p> <p>Timber / Intellectual property / design Enterprise test</p>	<p>Paper/ Smart/ Modern and Composite Materials Assessment based on NEA Practical skill criteria</p> <p>Paper/ Smart/ Modern and Composite Materials/</p>	<p>Plastic Assessment based on NEA Practical skill criteria</p> <p>Plastic / responsible design/ Product Lifestyle test</p>	<p>Design methods and processes/ Design communication Test</p> <p>MOCK EXAM</p>	<p>The requirements for development / Feasibility studies test</p>

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Year 13	Term1 – NEA	Term 2 – NEA	Term 3 – NEA	Term 4 – Revision	Term 5 – Revision
Focused Practical Tasks	<b>Development of design proposal(s) - 25</b>	<b>Development of design prototype(s) - 25</b>	<b>Analysing and evaluating</b>	<b>Final NEA completion</b>	<b>Revision FPT</b>
	3.1.6.2 Efficient use of materials 3.2.9 Design for manufacture and project management	3.2.2 Design Theory 3.2.3 How technology and cultural changes can impact on the work of designers	3.2.5 Critical analysis and evaluation 3.1.9 Health and Safety	3.2.10 National and international standards in product design	Exam practice Focused Tasks linked to Exam questions
Literacy/ numeracy	Scaling drawings. Use of datum points and geometry when setting out design drawings. Representation of data used to inform design decisions and evaluation of outcomes. Presentation of market data, user preferences and outcomes of market research Interpretation of market research data, calculating costs and profit. Representation of data used to inform design decisions and evaluation of outcomes. The use of ergonomic and anthropometric data when designing products for humans and specific applications Determining quantities of materials. Calculation of sides and angles of products. Use of datum points and geometry when setting out design drawings. Use of geometry to create templates for designs				
Assessments	Efficient use of materials / Design for manufacture and project management test	Design Theory / How technology and cultural changes can impact on the work of designers test  MOCK EXAM	Critical analysis and evaluation / Health and Safety test	National and international standards in product design test	MOCK EXAM