

GCSE Design & Technology (Graphics) Year 11

	Topic / Theme	Knowledge and Skills	Assessment	Cultural Capital Independent Learning
Autumn – Term One	<p>Component 2 – NEA (coursework) Students will continue aspects of their project as part of their non-examination assessment (NEA). The project will test students’ skills in investigating, designing, making and evaluating a prototype of a product that will allow them to apply the skills they have acquired and developed throughout their study.</p>	<p>Component 2 – NEA (coursework)</p> <p>2.2 Review of initial ideas 2.2a Analysis and evaluation of how each design idea meets the design brief and product specification. 2.2b Determine which designs follow the design brief and product specification and should be taken forward for development. 2.2c Modification of design ideas to fit the design brief and product specification.</p> <p>2.3 Development of design ideas into a chosen design 2.3a Consideration of user group needs and preferences, of design</p>	<p>Component 2 – NEA (coursework)</p> <p>Fully developed analysis of design ideas leading to effective refinement and development of designs, which considers comprehensive factors and makes fully relevant connections between elements of the design.</p> <p>Effective evaluation of design ideas leading to considered refinement and development of designs, demonstrating a fully sound understanding of design considerations.</p> <p>2.3 Development of design ideas into a chosen design Fully appropriate use of research to inform ongoing developmental changes.</p>	<p>Specific tasks within the curriculum encourage the use of a wide array of practical skills and experiences, which are designed to appeal to girls in particular to address issues of gender stereotyping and encourage future pathways and employment in areas with gender disparity.</p> <p>Students will gain an awareness of how the designs and work of</p>

		<p>ideas, conducting further research where necessary.</p> <p>2.3b Consideration of the design as a whole, rather than focussing on component parts in isolation.</p> <p>2.3c Modelling/simulation used to test the features of the design ideas.</p> <p>2.3d Analysis and evaluation of the design ideas, to inform choice as to the chosen design to take forward.</p> <p>2.3e Modification of design ideas to produce the chosen design, which meets the design brief and product specification. 2.3f Use of calculations to determine all material quantities and technical details of materials, processes and components that could be interpreted by a third party.</p> <p>2.4 Communication of design ideas</p> <p>2.4a Use a range of communication techniques and media to present the design ideas, including: a freehand sketching (2D and/or 3D) b annotated sketches c cut and paste techniques d digital photography/media e 3D models f</p>	<p>Fully sound refinements of design ideas and a design solution that fully meets the requirements of the design specification, informed by the fully sound application of technical knowledge of materials and processes and the effective application of modelling/simulation techniques.</p> <p>Chosen design idea shows fully appropriate application of calculations to determine all material quantities and technical details of materials, processes and components that could be interpreted by a third party.</p> <p>2.4 Communication of design ideas</p> <p>Considered selection and fully appropriate use of techniques to communicate design ideas.</p> <p>Considered selection and fully appropriate use of computer-</p>	<p>individuals influence and reflect society, different cultures and social economic groups. Students will gain an understanding of Britain's contemporary design practice and design heritage, as well as a knowledge of international design practice. We encourage wider reading and the exploration of academic theory of design. Research into concepts, the environment, cultures and the work of past and present designers, and their achievements, will develop the students' understanding of their own potential and the measures, skills and knowledge necessary to succeed.</p>
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	<p>Exam: Papers & Boards content 3.2 The sources, origins, physical and working properties of papers and boards and their social and ecological footprint</p>	<p>isometric and oblique projection g perspective drawing h orthographic and exploded views i assembly drawings j system and schematic diagrams k computer-aided design (CAD) and other specialist computer drawing programs. 2.4b Communicate the design ideas clearly and effectively using written techniques.</p> <p>Exam: Papers & Boards content</p> <p>3.2.1 Paper: a copier paper (in topic 1) b cartridge paper (in topic 1) c tracing paper (in topic 1) d bond e heat transfer printing paper (sublimation printing). 3.2.2 Board: a folding boxboard (in topic 1) b corrugated board (in topic 1) c solid white board (in topic 1) d foil-lined board. 3.2.3 Packaging laminate (including Tetra Pak™): a paperboard b polyethylene</p>	<p>aided design (CAD) techniques to communicate design ideas. Considered selection and fully appropriate use of written techniques to communicate design ideas.</p> <p>Core content Assessment of core content is through class marking and internal examination.</p>	<p>Research into materials, concepts and the work of past and present designers will develop the students' ability to work independently</p>
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		<p>c aluminium foil.</p> <p>3.2.4 Sources and origins – where paper and boards are resourced/manufactured and their geographical origin:</p> <p>a China, USA, Japan – pulp, paper and cardboard</p> <p>b Eastern Asia – rice paper.</p> <p>3.2.5 The physical characteristics of each type of paper and board:</p> <p>a density</p> <p>b transparency</p> <p>c texture.</p> <p>3.2.6 Working properties – the way in which each material behaves or responds to external sources:</p> <p>a flexibility (in topic 1)</p> <p>b printability (in topic 1)</p> <p>c biodegradability (in topic 1)</p> <p>d weight</p> <p>e surface finish</p> <p>f printability</p> <p>g absorbency.</p> <p>PAPERS AND BOARDS</p> <p>Pearson Edexcel Level 1/Level 2 GCSE (9–1) GCE in Design and Technology</p> <p>3.2.7 Social footprint:</p> <p>a trend forecasting</p>		
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Autumn – Term Two	<p>Component 2 – NEA (coursework)</p> <p>Students will continue aspects of their project as part of their non-examination assessment (NEA). The project will test students' skills in investigating, designing, making and evaluating a prototype of a product that will allow them to apply the skills they have acquired and developed throughout their study.</p>	<p>Component 2 – NEA (coursework)</p> <p>2.5 Review of chosen design 2.5a Produce a chosen design solution for the product that meets the design brief and product specification. 2.5b Consideration given to the materials, techniques and processes required to produce the chosen design solution. 2.5c Incorporation of feedback from research into the chosen design</p>	<p>Component 2 – NEA (coursework)</p> <p>2.5 Review of chosen design Fully developed analysis of the refinements made to the chosen design in response to the contextual challenge, which considers fully appropriate factors and makes fully appropriate connections between elements of the design.</p> <p>Effective evaluation of the refinements made to the chosen design, supported by fully sound reference to feedback made by others and the consideration of the materials, components and manufacturing techniques.</p>	<p>Students are provided with opportunities to experience and gain skills in the use of equipment such as CNC Sewing machines and specialist tools used in many areas of employment. Students will be able to develop knowledge in use of other computer aided control equipment and robotic control to manufacture products, and to develop an understanding of how everyday products are manufactured in industry</p>

		<p>3.1 Manufacture 3.1a Production of a prototype that meets the requirements of the design brief and product specification, showing a wide range of making skills with precision and accuracy. 3.1b Selection and application of: a material b range of tools, including marking-out tools, hand tools and machinery c range of techniques d fixtures, templates, jigs and/or patterns e components f surface treatments and finishes used in the manufacture of the prototype. 3.1c Demonstration of safe working practice, for themselves and others.</p>	<p>3.1 Manufacture Effective selection of materials that are fully appropriate for the chosen prototype. Show a fully sound understanding of material properties of the materials used in the prototype. Produce a prototype that demonstrates fully competent making skills. Fully considered selection of fixtures, components and fittings, which are entirely appropriate for the chosen prototype. Fully competent use of tools, equipment and techniques for the manufacture of the prototype. Demonstrate a sustained high degree of safe working practice for self and others. Produce a fully functioning prototype that fully meets the end user needs in relation to a demanding design problem.</p>	<p>Students are expected to create and develop designs and ideas independently with varying degrees of innovation and flair. They will develop problem solving skills through independent learning in both a design and practical context, which will enrich the potential of all students by providing valuable skills and the mind-set to progress independently, especially in terms of future pathways and employment.</p>
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	<p>Exam: Papers & Boards content 3.3 The way in which the selection of papers and boards is influenced</p>	<p>Exam: Papers & Boards content</p> <p>3.3.1 Aesthetic factors: a form b colour c texture d surface graphics (across all areas).</p> <p>3.3.2 Environmental factors: a sustainability b pollution c genetic engineering.</p> <p>3.3.3 Availability factors: a use of stock materials b use of specialist materials.</p> <p>3.3.4 Cost factors: a quality of material b decorative techniques c manufacturing processes necessary d commodity price</p>	<p>Produce a prototype that fully meets the design specification.</p> <p>Show a fully sound understanding of the need for accuracy.</p> <p>Core content Assessment of core content is through class marking and internal examination.</p>	<p>Research into materials, concepts and the work of past and present designers will develop the students' ability to work independently.</p>
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		<p>e cost of recycling in comparison to cost of production from raw materials.</p> <p>3.3.5 Social factors:</p> <ul style="list-style-type: none">a use for different social groupsb trends/fashionc popularity. <p>3.3.6 Cultural and ethical factors:</p> <ul style="list-style-type: none">a avoiding offenceb suitability for intended marketc use of colour and languaged the consumer societye the effects of mass productionf built-in product obsolescence.		
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GCSE Design & Technology (Graphics) Year 11

	Topic / Theme	Knowledge and Skills	Assessment	Cultural Capital Independent Learning
Spring – Term Three	<p>Component 2 – NEA (coursework) Students will continue aspects of their project as part of their non-examination assessment (NEA). The project will test students' skills in investigating, designing, making and evaluating a prototype of a product that will allow them to apply the skills they have acquired and developed throughout their study.</p>	<p>3.1 Manufacture 3.1a Production of a prototype that meets the requirements of the design brief and product specification, showing a wide range of making skills with precision and accuracy. 3.1b Selection and application of: a material b range of tools, including marking-out tools, hand tools and machinery c range of techniques d fixtures, templates, jigs and/or patterns e components f surface treatments and finishes used in the manufacture of the prototype. 3.1c Demonstration of safe working practice, for themselves and others.</p>	<p>3.1 Manufacture Effective selection of materials that are fully appropriate for the chosen prototype. Show a fully sound understanding of material properties of the materials used in the prototype. Produce a prototype that demonstrates fully competent making skills. Fully considered selection of fixtures, components and fittings, which are entirely appropriate for the chosen prototype. Fully competent use of tools, equipment and techniques for the manufacture of the prototype. Demonstrate a sustained high degree of safe working practice for self and others. Produce a fully functioning prototype that fully meets the end user needs in relation to a demanding design problem.</p>	

			<p>Produce a prototype that fully meets the design specification.</p> <p>Show a fully sound understanding of the need for accuracy.</p>	
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	Topic / Theme	Knowledge and Skills	Assessment	Cultural Capital Independent Learning
Spring – Term	<p>Component 2 – NEA (coursework) Students will continue aspects of their project as part of their non-examination assessment (NEA). The project will test students' skills in investigating, designing, making and</p>	<p>Component 2 – NEA (coursework) 4.1 Testing and evaluation 4.1a Analyse the prototype against the product specification by conducting a variety of tests under realistic conditions, to ensure fitness for purpose.</p>	<p>4.1 Testing and evaluation Fully developed analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and</p>	<p>Students will gain insight on the impact that manufacturing has on the environment and society, and the differences in various</p>

	<p>evaluating a prototype of a product that will allow them to apply the skills they have acquired and developed throughout their study.</p> <p>Exam: Papers & Boards content 4 The impact of forces and stresses on papers and boards and how they can be reinforced and stiffened</p>	<p>4.1b Analyse the results of the prototype testing. 4.1c Evaluate whether the prototype meets the product specification. 4.1d Evaluate the sustainability of the final prototype by carrying out a life cycle assessment (LCA), in order to assess its impact on the environment.</p> <p>Exam: Papers & Boards content .4.1 Forces and stresses: a bending b torsion c shear d compression. 3.4.2 Reinforcement/stiffening techniques: a laminating b encapsulation c corrugation d additions of layers and ribs e sandwich construction f packaging laminates.</p>	<p>showing a fully considered approach to testing against measurable criteria.</p> <p>Effective evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing fully appropriate conclusions from testing against measurable criteria.</p>	<p>cultures and social-economic groups.</p>
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	<p>Exam: Papers & Boards content</p> <p>3.5 Stock forms, types and sizes in order to calculate and determine the quantity of papers and boards required</p>	<p>Exam: Papers & Boards content</p> <p>3.5.1 Stock forms/types: a weights b bond c laminates. 3.5.2 Sizes: a common A sizes b foolscap c B series d letter e envelope f area g diameter.</p>	<p>Core content</p> <p>Assessment of core content is through class marking and internal examination.</p>	<p>Research into materials, concepts and the work of past and present designers will develop the students' ability to work independently.</p> <p>Specific tasks within the curriculum encourage the use of a wide array of practical skills and experiences, which are designed to appeal to girls in particular to address issues of gender stereotyping and encourage future pathways and employment in areas with gender disparity.</p>
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Summer – Term Five	<p>Exam: Papers & Boards content</p> <p>3.6 Alternative processes that can be used to manufacture paper and board products to different scales of production</p>	<p>Exam: Papers & Boards content</p> <p>3.6.1 Processes: a printing b cutting c intermediate modelling of paper and card prototypes d frame modelling e test modelling.</p> <p>3.6.2 Scales of production: a one off b batch c mass production d continuous.</p> <p>3.6.3 Techniques for quantity production: a marking-out methods (use of reference points, lines and surfaces) b jigs for folding</p>	<p>Core content Assessment of core content is through class marking and internal examination.</p> <p>External Examination – May / June</p>	<p>Students are provided with opportunities to experience and gain skills in the use of industrial equipment and specialist textiles tools used in many areas of employment. Students will be able to develop knowledge in use of computer aided control equipment to manufacture products, and to develop an understanding of how everyday products are manufactured in industry.</p> <p>In GCSE Design & Technology, enrichment of knowledge in a practical context is achieved</p>

	<p>Exam: Papers & Boards content 3.7 Specialist techniques, tools, Equipment and processes that can be used to shape, fabricate, construct and assemble a high-quality paper and board prototype</p>	<p>c fixtures d templates e patterns f stencils g photocopying h computer-aided manufacturing (CAM) i quality control j working within tolerance k efficient cutting to minimise waste.</p> <p>Exam: Papers & Boards content</p> <p>3.7.1 Tools and equipment: a hand tools b machinery c digital design and manufacture.</p> <p>3.7.2 Shaping: a cutting b folding c notching d modelling e manipulation.</p> <p>3.7.3 Fabricating/assembling/constructing : a strengthening b addition of dissimilar materials – windows, inserts,</p>	<p>Core content Assessment of core content is through class marking and internal examination.</p> <p>External Examination – May / June</p>	<p>using a variety of equipment and materials including: CNC in addition to everyday tools & equipment.</p>
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	<p>Exam: Papers & Boards content 3.8 Appropriate surface Treatments and finishes that can be applied to papers and boards for functional and aesthetic purposes</p>	<p>stickers, temporary components c lamination d use of split pins e use of mapping pins f stapling g taping h paper engineering i use of adhesives j lettering k binding l marking-out tools.</p> <p>Exam: Papers & Boards content 8.1 Surface finishes and treatments: a varnishing b hot foil blocking c edge staining d embossing e UV varnishes f packaging laminates and films.</p>	<p>Core content Assessment of core content is through class marking and internal examination.</p> <p>External Examination – May / June</p>	
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