Curriculum Mapping: Design & Technology – Textiles Year 10-11

St Martin's School
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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 10	***Unit 5*** *Specialist Material: Textiles*	***Unit 6*** *Drawing & designing Skills*	***Unit 6*** *Designers and Design Companies*	***Unit 3*** *Metals, Plastics, Paper & Board, timber*	***Unit 6*** *Design Strategies, Ergonomics and Anthropometrics*	***Non-Examined Assessment (NEA)*** *Section A* *User centred design Research*
	Health and safety in a Textiles environment, natural & synthetic fibres, woven fabrics, knitted fabrics, non-woven fabrics, selvedge, bias, seams, fasteners, shaping and forming methods, joining, properties, stock forms, scales of production, printing methods, finishes.	Isometric, oblique, orthographic, perspective drawing techniques, constructions lines, hidden detail and vanishing points. Design influence, design styles, geometric, bold colours, streamlined, modernist, architecture, fashion, product design, graphic design	Design influence, design styles, geometric, bold colours, streamlined, modernist, architecture, fashion, product design, graphic design	Material sources, Properties, Stock forms, Standard sizes, Categories, Uses Metals – Ferrous, non-ferrous and alloys Plastics – thermos plastic and thermosetting plastics Paper & Board types Timber –hardwood, softwood, manufactured board. Health & Safety in a workshop	User centred design, focus groups, design fixation, primary and secondary research methods, ergonomics, anthropometrics, users' needs and wants, target market, designers' responsibility.	User centred design, focus groups, design fixation, primary and secondary research methods, ergonomics, anthropometrics, users' needs and wants, target market, designer's responsibility. The 6 R's, obsolescence, finite & non-finite, environmental responsibility, tessellation, product life cycle.
	Justification: **Zipped bag** *Students extend their knowledge of the specialist material area of textiles learning the theorical underpinning knowledge alongside practical activities to understand the working properties of production methods and fibre/fabric construction.* *Students will make a mathematically accurate zipped bag using basic sewing machine skills building on those learnt in KS3 and lay the foundations for the NEA and external exam.*	***Justification:*** **Drawing skills** *Students will learn the techniques of Isometric, oblique, orthographic and perspective drawing through directed exercises. These skills underpin the designing, development and manufacturing specification elements of the NEA and external exam.*	***Justification:*** **Designers and design companies** *Students study the work of previous and existing designers and design companies to understand how this can influence their own designs. This knowledge underpins the development and manufacturing of a skirt practical which prepares them for the external exam and NEA. Developing skills in accuracy, using a range of tools, machines and finishing techniques.*	***Justification:*** **Core Materials** *Theoretical studies will be carried out alongside practical making to extend knowledge of the core material types studied at KS3 by learning about their properties, how they are sourced and what they are used for.* *These core skills build on those learnt in KS3 and lay the foundations for the NEA and external exam.* *Students are assessed through an end of unit test.*	***Justification:*** **Design Strategies** *Students learn the theoretical premise of how designers design and develop products for their intended users to give them an insight to user centred design* **Ergonomics & Anthropometrics** *Students will learn how ergonomics and anthropometrics form art of human centred design and the impact it has on the final outcome. Activities will include theoretical knowledge and practical making.*	***Justification*** **Section A; Investigate - NEA Task** *Students study through a contextual based design and make project set by the exam board, students select one context to study over 4 terms. Students extend their knowledge of their setting by studying the needs of others, existing products, and initial ideas.* **Environmental issues** *Students theory studies focus on environmental issues across the design process from material selection to manufacturing and disposal.*

Assessment:
Students are assessed formatively throughout their work with verbal, peer, self and teacher assessment. They are also given a summative assessment at the end of each practical investigation. Theoretical knowledge is assessed via an end of unit test. Fine grading between 1- and 9+ is given, along with WWW and EBI comments.

Wider reading/Cultural capital
They read about, research and analyse the work of other designers that are appropriate to their intentions and ideas. External speakers are invited to the school to widen students' knowledge of potential careers and opportunities within DT. ***Wider reading includes*** *GCSE AQA Design and Technology by PG Online,* Design Museum: Contemporary Design. By Catherine McDermott, Process: 50 Product Designs from Concept to Manufacture. By Jennifer Hudson, The Eco-Design Handbook. By Alastair Faud –Luke , Designs of the Times. By Lakshmi Bhaskaran, The Measure of Man and Women: Human Factors in Design. By Alvin R. Tilley & Henry Dreyfuss Associates, Sketching User Experiences: getting the design right & the right design. By Bill Buxton

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Year 11	***Non-Examined Assessment (NEA)*** *Section B & C* *Specification & Design Ideas*	***Non-Examined Assessment (NEA)*** *Section D* *Design Development*	***Non-Examined Assessment (NEA)*** *Section E & F* *Manufacture & Evaluation*	***Exam Preparation*** *Revision of all theory topics* *Units 1, 2, 4 & 5*	***Exam Preparation*** *Revision of all theory topics* *Units 3, 6, 7 & Maths*	**Study leave**
	Design Specification, criteria, justification, aesthetics, cost, consumer, environment, size, safety, function, materials. Design style, annotation, isometric, perspective, exploded, rendering.	Modelling, iteration, innovation, creative, 2D & 3D, CAD/CAM, prototype, testing, user feedback, research, material properties, final design, manufacturing specification.	CAD/CAM, Quality Control, Health & Safety, making skills, tolerances, finishing, commercially viable. Testing, analysing, evaluating, modifications, user feedback.	Industry & Enterprise, Sustainability, People, Culture, Society, Production, Moder, Smart & Composite Materials, Systems, Mechanical Devices, Forces, Ecological and Social footprint, Scales of Production, Specialist material	Core materials: metal, timber, paper& board and textiles. User centred design, ergonomics, anthropometrics, drawing styles, and designers. Tolerance, datum, aesthetics, tessellation, finishes, surface preparation. Mathematical application	
	Justification: **Section B – Specification -** *Following from the work before the summer students identify and write a complex set of criteria for their design context.* *This is assessed throughout with given directed improvement time to improve their responses.* **Section C – Design Ideas** *Using the design specification as a guide students will produce a series of innovative and creative design ideas for their design solution. Annotating the designs and discussing them with their client.*	***Justification:*** **Section D – Development** Students develop their chosen design idea through modelling, evaluation, refining as part of the iterative design process to reach a final solution. They will produce a technical final design and production plan which will be used to inform the making of their final prototype.	***Justification:*** **Section E - Manufacture** *Students use a range of practical making skills to manufacture and finish their final prototype to a high quality with use of close tolerances.* **Section F – Analysis & Evaluation** *Students test the final prototype to assess fitness for purpose against the design specification, gaining client feedback to establish the overall success of their product and suggest future modifications.*	***Justification:*** Students to complete theoretical studies on the remaining areas of student which include core areas of Unit 1, 2 and 4. Recap on specialist material learning: RM – Timber GR – Paper & Board TX – Textiles Activities include, mini tests, exam questions, note taking and targeted questioning.	***Justification:*** Students to complete theoretical studies on the remaining areas which include core areas of Unit 3. Design and making principles of Units 6 & 7 Mathematical applied skills to DT contexts. Activities include, mini tests, exam questions, note taking and targeted questioning.	

Assessment:
External Assessment: *GCSE Design & Technology – 50% of GCSE*
Theoretical knowledge from Units 1-7. Written exam: 2 hours, 100 marks, Multiple choice questions, specialist material questions and design& making principle questions
NEA Internal Assessment: *50% of GCSE*
Substantial Design and make task completed as a A3, 22-page E-portfolio and completed 3D prototype.

Wider reading/Cultural capital
Year 11 students have their work exhibited in our annual Summer Exhibition where students' friends and family members, and members of the wider public are invited to view the work. Real life examples are built into learning wherever possible to give students access to how DT fits into the wider world. ***Wider reading includes*** Rapid Contextual Design: Guide to key techniques for user centred design. By Karen Holtzblatt, AQA Design and Technology: All Materials Categories and systems. By Hodder Education