Year 10 D&T GCSE

Time Frame	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Materials and their working properties Core technical principles	Designing principles	Designing principles Making principles	Specialist materials New and emerging technologies	New and emerging technologies	Energy, systems, materials and devices Start of NEA
Purpose	An introduction to the different materials and their properties for core skills	Introduction in how to support students in preparation for Designing using existing data and the work of others	Communicate their design ideas and decisions using different media and techniques	Use a wide range of complex materials & components Materials e.g. sources, classifications, properties	The impact of new and emerging technologies on the industry, enterprise, sustainability, people, culture, society and the environment, production techniques and systems.	Developments in modern and smart materials, composite materials and technical textiles. Investigation Section A of NEA based on AQA Contexts released June 1st.
Key Learning	Intro to Material properties: - Papers and boards - Timbers - Metals - Polymers - Textiles	- Investigation, primary and secondary data - The work of others; designers and companies - Design strategies	- Communication of design ideas - Selection of materials and components - Tolerances - Materials management	- Working with specialist materials (timbers) - Commercial manufacturing, surface and treatments and	Production techniques and systems - Mechanical Devices Levers and Linkages - Quality Control and Quality	- Energy generation - Energy storage - Modern materials - Smart materials - Composite materials and

	Common specialist technical principles: - Forces and stresses - Functionality - Ecological and social footprint - The 6 R's - Scales of production	- Producing a Design Brief and Specification using the investigations.	- Tools, equipment, techniques and finishes - Source, origins and properties - Ergonomics/ Anthropometrics	finishes - New and emerging technologies - Sustainability and the environment - People, culture and society	Assurance. - Informing design decisions	technical textiles - Systems approach to designing - Electronic systems processing - Mechanical devices NEA context choice and preliminary investigations to start. - Client research (needs and wants) - Work of others - Product analysis
Skill Development	Knowledge to by applied as a skill during the Design Principles and Manufacturing principles	Identify and understand the client and user needs through a collection of primary and secondary data. Use imagination, experimentation and combine ideas when designing	Develop, communicate, record and justify design ideas, applying suitable techniques, for example: formal and informal 2D and 3D drawing system and	Explore and develop their own ideas using the iterative process including: sketching modelling testing evaluation of	Apply knowledge from other disciplines, including mathematics, science, art and design, computing and the humanities Prepare students to participate confidently in an	Apply knowledge from other disciplines, including mathematics, science, art and design, computing and the humanities Prepare students to participate confidently in an

			schematic diagrams annotated sketches exploded diagrams models presentations written notes working drawings schedules audio and visual recordings mathematical modelling	their work to improve outcomes.	increasingly technological world	increasingly technological world Identify and understand client and user needs through collection of primary and secondary data.
Assessment: Formative & summative	Assessment – PG assessment core technical principles tests Production of various practical tasks	Assessment – PG assessment core technical principles tests Production of various practical tasks	Assessment – Presentation and Drawing skills	Assessment – PG assessment specialist technical principles Mock NEA project	Assessment – PG assessment specialist technical principles Mock NEA project	Assessment - NEA folio work

Year 11 D&T GCSE

Time Frame	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	NEA	NEA	NEA	NEA	Revision	Revision
Purpose	A single portfolio and prototype product(s) that meet the assessment criteria set by the exam board in the specification. Work will be marked by teachers and moderated by AQA Students are free to revise and redraft a piece of work before submitting the final piece for assessment. Teachers can review draft work and provide generic feedback to ensure the work is appropriately focused.				To recap Core skills and subject knowledge gained in Year 10. Prepare students for the D&T GCSE exam (50% of the final grade) confidently.	
Key Learning	Identifying a need – how to identify a need talking to audience, market research Context/challenge – purpose, how to choose, what to include. Purpose of analysis and how to analyse.	What ergonomics and anthropometrics are. Ergonomics used by product designers to ensure products are easy to use. Students begin to include research on Ergonomics and anthropometric	Further embedding of the iterative design process required in the NEA through design development and moderation Range of ideas should be produced for their final project.	Final prototyping Testing Review against specification User feedback Evaluation	Production techniques and systems - Mechanical Devices Levers and Linkages - Quality Control and Quality Assurance. - Informing design decisions	- Energy generation - Energy storage - Modern materials - Smart materials - Composite materials and technical textiles - Systems approach to designing - Electronic systems processing - Mechanical

	Task analysis should be completed showing what needs to be considered based on the Context/Challenge What areas to research – making research relevant to project. Product analysis – what to look for – how to analyse a product. The work of others – designer influences Consumer profile following discussion on	data for their context/need/challenge. Research on sustainability and link where possible to their chosen prototype/design Research conclusions Design Brief Specification	Ideas should be presented as a range of 2D and 3D (isometric) designs. Development, modelling and making of final prototype Card templates Material and Process investigation and testing. CAD- showing different views and finishes of the product Sizes (orthographic drawing) done via CAD or HAND DRAWN DESIGNS Final prototyping			devices NEA context choice and preliminary investigations to start. - Client research (needs and wants) - Work of others - Product analysis

	Design and Market influences, and inclusive design.					
Skill Development	Students will be expected to work with a brief and a live client throughout the NEA. They will gain an awareness for the needs of others and to be able to design for specific people or groups of people. They will need to demonstrate and apply knowledge and understanding of designing and making principles.				They should be aware of the types of questions that may come up in the exam, including theory content, how and what the wording means and how to answer the questions with the correct type of response.	
Assessment: Formative & summative	NEA Guidance In providing generic feedback Teachers can: • provide feedback in oral and/or written form • explain syntax in general terms • advise on resources that could be used • remind students of the key sections that should be included in their final folder. A clear distinction must be drawn between providing feedback to students as part of work in progress and reviewing work once it has been submitted by the student for final assessment. Once work is submitted for final assessment it cannot be revised. It is not acceptable for teachers to give, either to individual students or to groups, feedback and suggestions as to how the work may be improved in order to meet the marking criteria All practical work that is submitted for assessment must be completed under direct supervision. If a student needs to undertake some work that cannot be completed in school/college no credit can be given for the work undertaken				Assessment – PG Tests AQA Past papers Seneca Learning modules	

	off site. You must ensure that you are familiar with the prototype before it is taken off site and also verify it after any off site work has been completed to ensure that the only work that has been completed off site is what has been discussed beforehand.	