

Year 10 Design Technology	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge	Health and safety rules for the workshop and use of tools and equipment. Personal safety. Risk assessments. New and emerging technologies. Industry and enterprise. Sustainability and the environment. People's lifestyles, culture and society.	Energy, the climate and the environment. Systems and devices. Smart and modern materials. Composite materials and Technical textiles. System approach and electronic systems Biomimicry Ergonomics Mock/ practice NEA1, controlled assessment project.	Materials Papers and boards Timbers/ wood Metals and alloys Polymers/ plastics Textiles Costing of materials Forces and stress Improving the functionality of materials and products. Ecological and social footprint. Scales of production Sustainability of materials.	Joints and levers Marking gauge Finger joints Dove tail joints Tenon joints Halving joints A selection of joints and levers made and tested.	Developing drafting and drawing skills Rending Exploding drawings 3 D designs Annotating designs Using pattern and colour in designs Creating logos designs Preparation for Year 10 mock exams. Practice questions Revision tasks	NEA 1. Controlled assessment Analysing the brief Task analysis Primary Research Secondary research Interviewing clients Product analysis Questionnaires completed Gaining client feedback Research analysis
Skills	Students will develop safe and proficient use of tools and equipment, e.g. Use of the router table Pillar drills/forstner bit Fret saw/Coping saw Chisels. Develop ability to work to a brief. Understand a range of different consumer's requirements.	Student will be able to identify a range of smart and modern textiles and be able to discuss the advantages and disadvantages of using each. They will be able to consider biomimicry in the local environment and of the wider world to come up with a range on initial designs. They will	Students will be able to justify their choice of chosen materials to make their products. They will be able to discuss their product in relation to the client's needs, climate change, recycling, production processes, sustainability. They will be able to create a plan for making their product, list all materials and tools needed to make the product. Create a costing sheet.	Students will develop safe and proficient use of tools and equipment, e.g. Risk assessments Marking gauges Vices Drills and sanding machines Be able to discuss how levers work and demonstrating making a model of a lever. Independently make a range of different joints.	Perspective drawing Exploding drawings Initials designs Develop their initial designs into a final design. They will be able to create an original logo design. They will be able to draw on their artist/ designers research and create their own repeat coloured pattern design. Develop revision techniques, e.g. Mind-mapping, practice answering exam style questions.	Students will begin their controlled assessment, starting with analysing the briefs received from the exam board. They will be able to justify and record their ideas for their chosen brief. They will be able to choose a client to make their product for. They will develop their communication skills by gaining detail information from the client's, relying to their requirements for the product being researched/made. They will develop their ability to complete primary and secondary research.
Independent Learning Link	Sustainability in Design GCSE DT - YouTube Material properties GCSE DT - YouTube	BBC Bitesize Ergonomics - YouTube What is biomimetics? Design and Technology - Biomimetics: Designed by Nature - YouTube	Hardwoods and Softwoods GCSE DT - YouTube Thermosetting plastics GCSE DT - YouTube	GCSE PE- Levers and Mechanical Advantage - YouTube Mr Ridley's RMT Revision 004 Wood Joints - YouTube	GCSE Design Technology (9-1): Manufactured Boards - YouTube	AQA Design Technology textbook, available in the library. Read the section on starting the NEA1. Practise exam papers. These will be printed and handed to you.

Year 11 Design Technology	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge	NEA 1. Controlled assessment Initial designs Development of designs Final design Plan the making of a prototype Modelling the prototype Testing the prototype Gaining client's feedback on the prototype. Adjusting the final design to include points raised by the client's feedback.	NEA 1. Controlled assessment Making a small model prototype and a full-scale final design product. Keeping a diary account of each step taken to produce their product, which includes their problem solving thoughts and actions and photographic evidence of their step-by-step making of their prototype model and the final product. Surface decoration Burnishing Sealing/ varnishing Year 11 mock exams, early October.	NEA 1. Controlled assessment Evaluation Self-reflection Peer assessment Hand in their controlled assessment for marking. CAD/CAM/ laser cutter Vacuum forming Sheet metal cutting and shaping. Year 11 mock exams, early January.	Maths in DT Practise measuring and marking. Working out amounts of materials required to make a product. Working out amounts of materials needed when scaling up manufacturing. Working out costings for a product Working out costing when scaling up manufacturing. Tolerance levels in production. Problem solving when mistakes are made.	Exam revision; designs A mini design challenge. In this task students will develop their drawing and designing skills. Students will justify their designs against a brief considering, climate change, recycling, disabled user's needs, sustainable materials, smart textiles and ergonomics.	
Skills	Students will become proficient in; Designing Initial designs. Developing their first ideas. Create a detailed final design. Plan the making of a prototype Develop modelling making techniques. Test and evaluate their prototype. Gaining client's feedback on the prototype. Develop good communication skills, by discussing their ideas with their client and their peers.	Students will develop their knowledge and ability to; Make models and test these with their peers, make and test a full scale product, develop their ability to keep a detailed account of how they made their full scale product, students will have greater confidence in discussing their ideas with their client and with their peers. Students will be able to discuss how to create a surface decoration, what materials would be needed and how to use equipment safely to do the surface decoration.	Evaluation Self-reflection Peer assessment Hand in their controlled assessment for marking. CAD/CAM/ laser cutter Vacuum forming Sheet metal cutting and shaping. Care, cleaning and storage of products.	Practise measuring and marking. Working out amounts of materials required to make a product. Working out amounts of materials needed when scaling up manufacturing. Working out costings for a product Working out costing when scaling up manufacturing. Tolerance levels in production. Problem solving when mistakes are made.	Students will develop their drawing and designing skills. Practise of sketching, Students will work through a number of tasks before completing exam practice questions. Skills developed include; Sketching and drawing, Adding annotations, Adding pattern and colours Designing in a range of different styles, Design and creating a range of original logos, rendering, exploding drawings, perspective drawings.	
Independent Learning Link	Introduction to GCSE Design Technology - YouTube	How to get a 9 in GCSE Design Technology! (with resources) - YouTube	CAD/CAM Pros and Cons - D&T GCSE Revision - YouTube	Design and Technology REVISION CARDS, REVISION WEBS AND REVISION EXERCISES (technologystudent.com)	GCSE Design Technology (9-1): Manufactured Boards - YouTube	