Year 12 Design Technology

Students will mainly learn through Focussed Practical Tasks, supporting this with independent study. Visits and 'Live' project briefs to consolidate learning. Students can revisit their Core theory via their Google Classroom or chosen exam board and build upon this knowledge to create a bank of resources for revision purposes. Regular questioning and homeworks used to ensure students can implement knowledge learnt in class.

Year 12 Curriculum	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic(s)	**FPT/Design practice** Students will learn about different design strategies and methods to create potential presentation sheets to show to a client. (contact ICON Engineering to create a 'live' design brief?) Tour of company to study injection moulding **FPT** Students are to enhance their sketching ability and design a conceptual product e.g power drill **Core theory** Material Properties Investigation -see Independent task 1 Smart materials Polymers	**Theory** Digital technologies including the use of CAD/CAM - wider implications Rapid prototyping Mass production Global Marketing **FPT** Students are to enhance their making/modelling ability and make a conceptual product e.g power drill. This will allow students to extend their making skills using a range of different processes to produce a realistic prototype to show to a potential client. These will be small enough for transporting to other sites if required.	**FPT** Students are to design and make an architectural model. Possibly a bike shelter/seating canopy for the school grounds. Client to be sourced. **Theory** Paper, card, composites Textiles	**FPT** Students are to complete the architectural model. And test and evaluate it via the user/client. Maths integrated at key points and recorded in the design evidence. **Theory** Metals - students to complete a sand casting example Systems - utilise engineering resources for students to study.	**Planning and preparation of A level NEA** Possible design opportunities explored. Client sourced **Theory/FPT** Electronics - students to complete a circuit that may have the potential to be included as part of their A level NEA.	**Planning and preparation of A level NEA** Primary investigation of problem situation, materials and processes. Initial Design Brief and Specification generated.

	FPT A wooden carcase built up of 4 major constructional joints. Finished with 4 different finishes. Students to use a range of tools, equipment and processes linked to extending their timber knowledge.	Visit to ICON Engineering for client feedback				
Assessment	Structured feedback with ambition time incorporated to improve grades.					

Independent Work
Details of what types of activities will be set to do as independent work (homework), no need to list every task specifically **Students will be completing work at home following on from the lesson content for each term.** **Term 1 - Students create their own presentation of a given product linked to Polymers and injection moulding.** **Term 2 - Students produce their own Google Quiz based upon each of the categories listed above and test each other.** **Regular maths intervention solving practical problem situations - linked to Google classroom** **Term 3 - Students study a design period and give a Google Slides presentation.** **Term 4 - Extended writing exemplar questions provided to test knowledge of core materials e.g Metals** **Term 5 and 6 - past paper examples completed** **Initial stages of the A level NEA to be completed for over the summer prior to return.**