Subject: Design and Technology **Key Stage 4 Curriculum Plan** **Year:** 11

Department Information:

Having learned how to work with a variety of materials and equipment in Year 10, students shift their focus in Year 11 onto their own coursework projects and exam revision. Students start their coursework projects in July and choose one of three prompts provided by the exam board as a basis for their project. Deadlines for each section of the coursework are set and students must meet them. Guidance is provided and in-class activities support students with each stage, however, they are largely expected to work independently.

Curriculum aims and intent:

Learn to use primary and secondary research techniques to identify problems, opportunities and potential user groups in a chosen context.

Create a design brief and specification that outlines the key requirements of an innovative, functional, appealing product.

Use a variety of approaches to generate creative ideas communicated using annotated product sketches, 3D models and calculations.

Develop, finalise and refine a design and prepare it for manufacture using orthographic drawings and manufacturing specifications.

Produce a high quality prototype that demonstrates excellent practical skills and high levels of attention to detail, including health and safety.

Evaluate the impact of the product produced through a variety of tests, user feedback and comparison against the original specification.

Assessment:

There are short quizzes issued to students during lessons that encourage recall but also give an indication of any knowledge gaps.

Towards the end of each section of the coursework, students are given a skills grid with sections highlighted indicating what level the students are working at based on the work they have produced for that section. This is limited in nature as specific, personalised feedback is not allowed for the Year 11 NEA.

Resources used to support learning:

Students are issued a printed GCSE NEA guide that gives clear information on how to approach each stage of the NEA.
Students are also issued an A3 carry-case, an A3 portfolio folder, a sketchpad/logbook and a fineliner.

Year 11 Intervention runs on a Week 2 Wednesday, 3-5PM. This starts from the start of the year and students are encouraged to attend. Some students may be required to attend if they are in need of extra support.

Home Learning:

Students are set Seneca assignments each term with exam revision to complete. This is reviewed at the end of each term in class and students who do not complete these will be asked to complete them in reflection.

Students will need to conduct some research for section A outside of the classroom and will also complete some elements of sections C and D at home (drawings and design development).

How parents can help their child:

Parent support during the coursework project can be a huge driver in student success. This can be in the form of keeping students accountable and helping them to meet deadlines, help with organisation of materials, reminders to bring in anything completed at home, assistance with scanning or uploading files and generally supporting students to be independent. There may be a need to visit a beach or a farm or somewhere specific to help with project research, for example.

Term	Summary of work being covered	Knowledge, Understanding and skills assessed	How the work is assessed	Career Links
1	Investigation, primary/secondary data Design brief and design specification Carry out investigations in order to identify problems and needs Enviro/socio/economic challenge The work of others	Section A: Explore, understand and present context info, identify needs and problems, choose design opportunity and decide on a target user, product analysis Section B: Brief and spec Section C: Start design ideas	Sections A and B are marked using a skills grid that gives students indicators on what level they are working at. Short in-class quizzes	Design researcher Anthropologist
2	Generate imaginative and creative ideas using different design strategies Explore and develop own ideas Communication of design ideas Modelling and development Design refinement for manufacture	Sec. C: Explore a range of possible ideas; design ideas should demonstrate flair, originality and creative risk. Sec. D: Formal and informal 2D/3D drawings (CAD, schematics, diagrams). Students to develop at least one model.	Sections C and D are marked using a skills grid. In sec. D, marks for models are awarded for suitability rather than quantity. Students present ideas using a 'dragons den' style approach.	Illustrator and product design consultant, manufacturing engineer
3	Work with materials/components to produce an accurate prototype. Use specialist tools/equipment (hand tools, machines or CAM/CNC) and techniques (shaping, fabrication, construction and assembly) to achieve close tolerances.	Section E: Realise design ideas and produce a final prototype. Prototypes will have suitable finish with functional and aesthetic qualities and meets the needs of the user. Equipment consistently operated safely with a high level of skill.	Section E feedback issued using skills grid. In sec. E, marks are awarded for the quality of the prototype(s) and how it addresses the design brief and design spec of the chosen contextual challenge.	Prop maker Set designer Product designer Industrial designer
4	Continuously analyse and evaluate own design work, using decisions to improve outcomes across all sections. The final prototype(s) will undergo a range of tests on which the final evaluation will be formulated, to include market testing and a detailed analysis of the prototype(s).	Use of an iterative design process. Analysis and evaluation throughout the project including defining requirements, analysing the design brief/spec, testing and evaluating of ideas produced during sections C-D. Comprehensive testing of all aspects of the final prototype against the brief and spec in final evaluation.	Section F feedback issued using skills grid. In sec. F, marks are awarded for ongoing evaluation throughout the project as well as the final evaluation.	Researcher, lecturer, teacher
5	Exam revision covering all topics: Core technical principles (20 marks in exam) Specialist tech. principles (30 marks) Design and make principles (50 marks)	All knowledge covered in the GCSE course could be assessed in the exam, however, our specialism is papers and boards. This specialism is assessed in the second section of the exam where students select a question to answer.	Exam	
6	Exam revision		Exam	