



## Key Stage: 5

### Subject: Design & Technology: Product Design (3D)

#### Aims of the subject:

We provide a high-quality design and technology education that should give pupils opportunities to create, innovate, design, make and evaluate a variety of well-crafted products that are fit for purpose. Pupils will be taught the technical skills and craftsmanship to execute practical tasks, thereby developing confidence to increase their skills, knowledge and competence in using materials, machinery, techniques and processes. Pupils should develop valuable practical skills and use these safely with a range of resistant and non-resistant materials, drawing media tools and equipment, in both 2D and 3D. They will be shown how to communicate their ideas and designs skillfully and accurately in 2D and 3D, using a variety of techniques, including digital technology, advanced sketching & presentation, CAD & 3D printing. They should know about good design, everyday products and use correct technical terminology with Design & Technology literacy. They will be allowed to investigate and analyse the rich history of design and technological innovation and the work of others, including iconic designs, to inform their own work. They will be shown developments in design and technology and the responsibilities of designers, including environmental responsibilities. Pupils should clearly enjoy the subject, whilst developing a mastery of Product Design. They will be guided by teachers who themselves demonstrates a passion for Design & Technology.

#### Year 12

Year	What will I learn?	What will I do?
Year 12	<p><b>Term 1: AS Major Project / Theoretical Underpinning (PROD 1)</b>                      Identification of Problem (Major Project), Analysis, investigation, Client Interviews, Design Ideas, Development, Modelling &amp; Testing, Research, Further Development, Final Design Solution, CAD modelling, Testing, 3D printing, Advanced sketching techniques, Theoretical underpinning, Examination practise, test questions, knowledge &amp; understanding, literacy skills</p> <p><b>Term 2: AS Major Project / Theoretical Underpinning (PROD 1)</b>                      3D Printing, Diary of Manufacture, Finishing, Assembly, Fitting components, Detailing, Testing &amp; Evaluation, Client Testing, Submission of Major Project ePortfolio &amp; manufactured outcome, Theoretical underpinning, Examination practise, test questions, knowledge &amp; understanding, literacy skills</p>	<p>Advanced CAD skills, Modelling &amp; Testing, Further Development, Design for CAD, Design for 3D Printing, Design for Assembly, Design for Mass Production, Final Design Submission, Planning, 3D printed manufacture, Theoretical underpinning, practise for examination</p> <p>3D printed manufacture, realisation, finishing, assembling, Detailing, Testing &amp; Evaluation, Submission of final ePortfolio &amp; completed (working) manufactured work, Theoretical underpinning, practise for examination</p>

	<p><b>Term 3: Theoretical Underpinning (PROD 1)</b> Theoretical underpinning, Examination practise, test questions, knowledge &amp; understanding, literacy skills, Start of A2 Major Project, Reverse Engineering CAD task (Advanced CAD), Photoshop / Illustrator tutorials</p>	<p>Theoretical underpinning, practise for examination Start A2 Major Project: Identification of Problem, Analysis, Research. Reverse Engineering Project – Advanced CAD skills, Photoshop / Illustrator tasks</p>
Year 13	<p><b>Term 1: A2 Major Project / Theoretical Underpinning (PROD 3)</b> Design Ideas, Development, Modelling &amp; Testing, Research, Further Development, Final Design Solution, CAD modelling, Testing, 3D printing, Theoretical underpinning, Examination practise, test questions, knowledge &amp; understanding, literacy skills</p> <p><b>Term 2: A2 Major Project / Theoretical Underpinning (PROD 3)</b> 3D Printing, Diary of Manufacture, Finishing, Assembly, Fitting components, Detailing, Testing &amp; Evaluation, Client Testing, Submission of Major Project ePortfolio &amp; manufactured outcome, Theoretical underpinning, Examination practise, test questions, knowledge &amp; understanding, literacy skills</p> <p><b>Term 3: Theoretical Underpinning (PROD 3)</b> Theoretical underpinning, Examination practise, test questions, knowledge &amp; understanding, literacy skills</p>	<p>Advanced CAD skills, Modelling &amp; Testing, Further Development, Design for CAD, Design for 3D Printing, Design for Assembly, Design for Mass Production, Final Design Submission, Planning, 3D printed manufacture, Theoretical underpinning, practise for examination</p> <p>3D printed manufacture, realisation, finishing, assembling, Detailing, Testing &amp; Evaluation, Submission of final ePortfolio &amp; completed (working) manufactured work, Theoretical underpinning, practise for examination</p> <p>Theoretical underpinning, practise for examination</p>

### Extra-curricular opportunities

Use of workshops with teacher supervision

### How you can support your child's progress

Read through project Advice booklets and refer to exemplar material inside. Purchase of AQA AS/A2 Product Design (3D) core textbook to support theoretical underpinning. Reinforce the high standards expected and support creativity. Encourage students to meet deadlines. Monitor progress through use of Parent access to Edmodo – please ask for Parent Code.