

# A-Level Design and Technology: **PRODUCT DESIGN (3D)**

**Examination Board Specification:**

AQA 7552

**Why Study Product Design:** The course will be challenging and creative and will encourage students to develop higher order design skills. Students will be working primarily in designing, making and modifying products and they will be expected to present work to the group as part of their project. Great importance will be placed on the theoretical understanding of the development and design of products. The capacity to analyse a problem and synthesise to form a solution will also form an important element in the course. In addition, students will learn from demonstrations, their own practical work, experiments and visits to places of interest as well as discussions with industrialists. Information and communication technology will be used extensively within project work. Lessons will involve the analysis of existing products from conception to manufacture, for example low voltage lighting, domestic devices and furniture. During the first year students will make a variety of products using a range of materials and manufacturing techniques. In Year 13 they will undertake the Non Examination Assessment (NEA). From the outset students ought to enjoy combining practical and intellectual skills. Students will be expected to demonstrate initiative, imagination and ingenuity and to be prepared to work on projects in the Technology Rooms outside the School day.

**Content and Assessment of the Course:**

Year 12	
<b>Unit 1</b>	<b>Core Technical Principles</b>
Materials and their applications The requirements for product design, development and manufacture Design communication Digital design and manufacture Efficient use of materials Health and Safety	
<b>Unit 2</b>	<b>Core Designing and Making Principles (Project Work)</b>
Design methods and processes Design theory How technology and cultural changes can impact on the work of designers Design processes Critical analysis and evaluation Selecting appropriate specialist tools, techniques and processes Accuracy in design and manufacture How to evaluate products taking into account the view of potential users Responsible design	
<b>Unit 3</b>	<b>Additional Specialist Knowledge</b>
Materials, adhesives and fixings, surface finishes and coatings, forming, redistribution and addition processes.	

**Advancement to Year 13 will be based on satisfactory completion of the Year 12 projects and the end of year examination.**

Year 13	
<b>Unit 4</b>	<b>Core Technical Principles</b>
Design for manufacturing, maintenance and repair Protecting designs and intellectual property Enterprise and marketing in the development of products	
<b>Unit 5</b>	<b>Core Designing and Making Principles (NEA Project Work - 50% of overall grade)</b>
Approaches to project management Design for manufacture National and international standards in product design	
<b>Unit 6</b>	<b>Additional Specialist Knowledge</b>
Industrial and commercial practice Modern manufacturing systems	

**Final Assessment:** The final grade will be made up of 50% NEA (project task in Year 13) and two examinations. Paper 1 (30%) is 2.5 hours and will test the Technical Principles and Paper 2 (20%) is shorter at 1.5 hours and tests the Designing and Making Principles as well as the additional specialist knowledge.

**Additional Information:** Students ought to have a natural interest in Design and Technology and have an aptitude for practical work and project management. Independent study will form a large part of the course especially the Design and Make tasks.

**Entrance Requirements:** A grade from 7-9 in Design and Technology at GCSE is a minimum expectation.