# *A-Level Design and Technology: PRODUCT DESIGN*

**Examination Board Specification:** AQA 7552

**Why Study Product Design:** The course will be challenging and creative which 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, including CAD/CAM 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** | |
|---|---|
| **Unit 1** | **Core Technical Principles** |
| 1.1 Materials and their applications<br>1.2 Performance characteristics of materials<br>1.3 Enhancement of materials<br>1.4 Forming, redistribution and addition processes<br>1.5 The use of finishes<br>1.6 Modern and industrial scales of practice<br>1.7 Digital design and manufacture<br>1.8 Requirements for product design and development<br>1.9 Health and Safety<br>1.10 Protecting designs and intellectual property<br>1.11 Design for manufacturing, maintenance, repair and disposal<br>1.12 Feasibility Studies<br>1.13 Enterprise and marketing in the development of products<br>1.14 Design communication | |
| **Design and Make Projects** | |
| Projects have been selected to allow students to focus on the range of material disciplines that they are likely to work with for their Non-Examination Assessment in Year 12. These are woods, metals, plastics, textiles, papers and boards.<br><br>Term 1 Wooden Chair<br>Term 2 The Mini Golf Club<br>Term 3 Architectural Pavilion | |

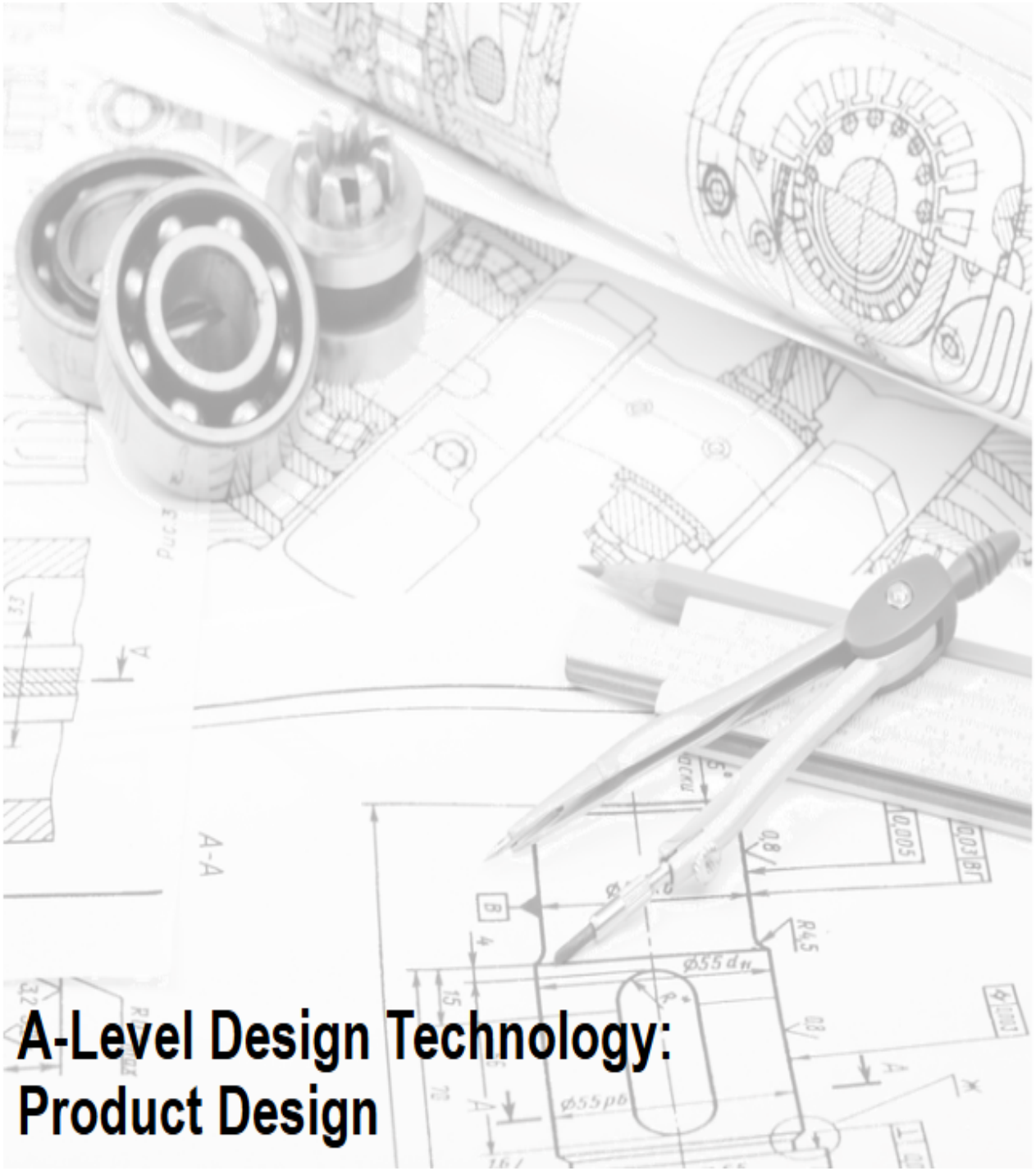
***Advancement to Year 13 will be based on satisfactory completion of the Year 12 projects and the end of year examination.***

| **Year 13** | |
|---|---|
| **Unit 2** | **Designing and Making Principles** |
| 2.1 Design methods and processes<br>2.2 Design theory<br>2.3 Technology and cultural changes<br>2.4 Design processes<br>2.5 Critical analysis and evaluation<br>2.6 Selecting appropriate specialist tools, techniques and processes<br>2.7 Accuracy in design and manufacture<br>2.8 Responsible design<br>2.9 Design for manufacture and project management<br>2.10 National and international standards in product design | |
| **Non-Examination Assessment** | |
| Portfolios are separated into five key criterions, that each have their own key deadlines, as follows:<br>Section A: Investigation – Year 12 Term 3<br>Section B: Design Brief and Specification – Year 12 Term 3<br>Section C: Developing design proposals – Year 13 Term 1<br>Section D: Realising design proposals – Year 13 Term 2<br>Section E: Analysing and Evaluating – Year 13 Term 3 | |

**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.



# A-Level Design Technology: Product Design

**Examination Board: AQA**

**Subject content:**

1. Technical principles
2. Designing and making principles

**Assessment:**

Paper 1: Technical principles

Written exam: 2 hours and 30 minutes

120 marks 30% of A-Level

Mixture of short and extended response

Paper 2: Designing and making principles

Written exam: 1 hour 30 minutes

80 marks: 20% of A-Level

Section A: Product Analysis (30 marks)

Section B: Commercial manufacture (50 marks)

NEA: Practical application of technical and designing and making principles

Substantial design and make project

100 marks: 50 % of A-Level

Digital portfolio and photographic evidence of final prototype