

## Year 12 Design Technology

The A-level Product Design course assesses students' ability to consider the needs of users and design products based on their knowledge of tools, materials and processes. In a similar format to the GCSE, students must produce a portfolio and practical element and at the end of the course are tested on the wider world of product design.

In Year 12, students spend some time learning the core knowledge needed for the Technical Principles element of the course. By January, students are ready and prepared to start the NEA element. By the end of Year 12, it is expected that students will have gathered the information needed to produce designs and come up with a plan of the product they are going to develop and produce in Year 13. In terms of weighting, the course is broken up into three parts:

**NEA:** 40-hour portfolio and substantial design and make project (50%)

**Paper 1:** Technical principles (30%)

**Paper 2:** Design and make principles (20%)

### Methods of deepening and securing knowledge:

Retrieval practice	Students build on the knowledge used throughout Years 7-11. This can be knowledge of tools, materials, processes and the structure of the design cycle and the design and make process. Students revisit the topic areas and look at them in more detail.
Concrete examples	Students are given real-life scenarios and examples. Using these they can apply knowledge of processes to develop products and investigate the reasons as to why things are produced in the way that they are.

	Autumn term 1	Autumn term 2	Spring term 1	Spring term 2	Summer term 1	Summer term 2
Topic(s)	<b>Technical principles: Materials</b> <ul style="list-style-type: none"> <li>- Polymers, metals and timbers</li> <li>- Different types</li> <li>- Properties</li> </ul>	<b>Technical principles: Materials</b> <ul style="list-style-type: none"> <li>- Polymers, metals and timbers</li> <li>- Modification, production processes</li> <li>- Finishes</li> </ul>	<b>NEA: Section A</b> <ul style="list-style-type: none"> <li>- Developing a problem</li> <li>- Investigating a context</li> <li>- Conversations with clients</li> </ul>	<b>NEA: Section A</b> <ul style="list-style-type: none"> <li>- Existing products</li> <li>- First concepts</li> <li>- Investigating processes</li> <li>- First-person research (investigating or working in the area of focus)</li> </ul>	<b>NEA: Section B</b> <ul style="list-style-type: none"> <li>- Developing design briefs</li> <li>- Creating design specifications</li> <li>- Planning and producing Gantt charts</li> </ul>	<b>NEA: Section C</b> <ul style="list-style-type: none"> <li>- Developing first concepts</li> <li>- Modelling</li> <li>- Further investigations</li> <li>- Feedback from clients</li> <li>- Manufacturing plans</li> </ul>

		<b>Design and Make Task</b> - Small design and make task, used to assess students ability to investigate, design, make and evaluate				
Assessment	- Exam question assessment - Booklets with past questions	- Exam question assessment - Booklets with past questions	- Ongoing assessment of Section A	- Ongoing and final assessment of Section A - Deadline Easter	- Ongoing assessment of Section B	- Assessment of Section A, B and ongoing of C – Summer holidays

**Independent learning:**

Due to the nature of the course, students are expected to spend more than just the 'contact time' (lessons) to complete work. Initially this will involve completing exam questions, creating notes, revising and researching processes for theory lessons, however during NEA time, students will need to complete research, investigations, design work and speak to clients in their own time.