

## Key Stage 5 (12)

**Course title: Design and Technology (product design)**

**Exam board: Pearson Edexcel**

**Specification code: 9DT0**

<p><b>Autumn 1 (September – October) to Autumn 2 (October – December)</b></p>	<p>During the first term key subject content is delivered to the students, using a project-based approach and formal theory lessons to learn about materials including timbers, metals, plastics, smart and composite materials. These projects also deliver key content associated with performance characteristics of materials and manufacturing processes and techniques.</p>
<p><b>Spring 1 (January – February) to Spring 2 (February – March)</b></p>	<p>During their second term, students split their studies into continued theory while starting work on their non-examined assessment (NEA).</p> <p>Theory topics covered this term include historical design movements and key designers, how to produce pictorial and working drawings and further materials including textiles, paper and boards. The students will also have an opportunity to develop CAD and CAM skills initially learned at key stage 4.</p> <p>Students will also begin work on their NEA (this is the term used for coursework, coursework represents 50% of their overall grade). The NEA is a substantial design and make project taking approximately a year to complete. Students will investigate a variety of different situations where design will be used to solve problems and meet user needs. After deciding on a particular problem to solve students will start to gather and analyse research to help them design.</p>
<p><b>Summer 1 (April – June) to Summer 2 (June – July)</b></p>	<p>During the third term, theory topics covered include safe working practices, where students can identify potential hazards and implement risk assessments. Designing for the maintenance and the cleaner environment</p> <p>Students will also progress through their NEA. They will complete the investigation stages conducting further research to help write a design brief and specification for the prototype they will design and make. The students will regularly consult with a client to help make design decisions.</p>

## Key Stage 5 (13)

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<p><b>Autumn 1 (September – October) to Autumn 2 (October – December)</b></p>	<p>During this first term theory topics covered include features of manufacturing industries, current legislation (consumer law as well as health and safety regulations).</p> <p>As the NEA progresses students start to generate design ideas that meet their clients' needs and the specifications that they have written. The students will regularly review their work and consult with the client to make changes and improvements to their ideas. A chosen idea is identified using a process of evaluation and review. The chosen idea is then developed into a final product that will be manufactured in the school workshop. During the development stages the students are encouraged to have an iterative and practical approach to improving their design. This will include regular research into possible processes and testing different components of the intended prototype.</p>
<p><b>Spring 1 (January – February) to Spring 2 (February – March)</b></p>	<p>During this second term theory topics covered include features of a professional manufacturing environment.</p> <p>The remaining time is used to prepare students for the exam, including time spent focusing on the higher tariff questions.</p> <p>For the NEA element the students conclude the development of their design and reflect on the changes they have made by producing a variety of different final drawings of their product. Drawing styles will include isometric, orthographic and exploded assembly drawings. The drawing will be used alongside a set of clear instructions of how to make the product in the workshop. The final design work is then put into action and the students use the school workshop to manufacture the prototype they have designed.</p>
<p><b>Summer 1 (April – June) to Summer 2 (June – July)</b></p>	<p><b>Exam prep</b></p> <p>The final stages of the NEA include final review, rigorous testing and evaluation of the completed prototype. The students will also conduct a life cycle analysis of the product to evaluate its impact on the environment. A sample of the cohort's work will be selected to be sent to the exam boards moderator.</p>