



**Kings Langley School**

Unlocking Potential for Life

**D&T:**

**KS5 Product Design**

*(Pearson Edexcel – 9DT0)*

# **Programme of Study - Overview**

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**Overview of KS5 PD curriculum**

<p><b>YEAR 12</b> Pearson Edexcel Level 3 Advanced GCE in Design and Technology - Product Design (9DT0)</p> <p><b>Summer Bridging work on research into key design movements...</b></p> <p><i>a) Arts and Crafts – William Morris</i> <i>b) Art Nouveau – Charles Rennie Mackintosh</i> <i>c) Bauhaus Modernist – Marianne Brandt</i> <i>d) Art Deco – Eileen Gray</i> <i>e) Post Modernism – Philippe Starck</i> <i>f) Streamlining – Raymond Lowey</i> <i>g) Memphis – Ettore Sottsass.</i></p>	<p><b>Introduction</b> – The first two terms are about building up student’s skills through a series of small-scale design and make tasks. These will be based about the possible project routes they could take for their NEA (coursework). Theory will be interleaved in during the course.</p> <p>Interior design project looking at developing the sixth form study area. Research and design development.</p> <p>Lighting project.</p> <p><b>Theory</b> <b>Factors influencing the development of products (5).</b> <b>Anthropometrics, Ergonomics, Design movements. Materials (1). Performance characteristics of materials (2).</b></p>	<p>Interior design project looking at developing the sixth form study area. Manufacture and evaluation.</p> <p>Lighting project.</p> <p><b>Theory</b> <b>Processes, techniques and specialist tools (3).</b> <b>Digital Technologies (4).</b> <b>Manufacturing processes</b></p>	<p>Tooth brush project – Introduction to 3D printing and Fusion 360. The first part of this product looks at product design and development.</p> <p>Till roll dispenser. Making use of mechanical fixtures and fittings. Learning about different joining and production methods..</p> <p><b>Theory</b> <b>Effects of technological Developments (6).</b> <b>Features of manufacturing industries (8).</b></p>	<p>Tooth brush project – The second part of the this project looks at packaging, branding, marketing and promotion.</p> <p>Till roll dispenser.</p> <p><b>Theory</b> <b>Designing for maintenance and the cleaner environment (9).</b></p>	<p><b>Begin NEA (coursework)</b> <b>Identification and investigation of a design possibility.</b></p> <p><b>Investigation of needs and research</b></p>	<p><b>NEA – Specification and initial generation of design ideas</b></p>
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<p><b>YEAR 13</b> Pearson Edexcel Level 3 Advanced GCE in Design and Technology - Product Design (9DT0)</p>	<p><b>NEA – Design Ideas and Development</b></p> <p><b>Theory - Further processes and techniques (12).</b></p>	<p><b>NEA – Final design, planning and Making of final prototype</b></p> <p><b>Theory - Safe working practices, potential hazards and risk assessment (7). Information handling, modelling and forward planning (11).</b></p>	<p><b>NEA - Making of final prototype</b></p> <p><b>Theory - Current legislation (10).</b></p>	<p><b>NEA - Evaluating own design and prototype</b></p> <p><b>Theory – Final Exam preparation.</b></p>	<p><b>Final Examination</b></p>	
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## Rationale

We are continually striving to implement the latest technology into the curriculum as well as building a sound knowledge base through practical experiences.



**Component 2: Independent Design and Make Project (Paper code: 9DT0/02)**

**Non-examined assessment**

**50% of the qualification**

**120 marks**

**Content overview**

- Students individually and/or in consultation with a client/end user identify a problem and design context.
- Students will develop a range of potential solutions which include the use of computer aided design and evidence of modelling.
- Students will be expected to make decisions about the designing and development of the prototype in conjunction with the opinions of the client/end user.
- Students will realise one potential solution through practical making activities with evidence of project management and plan for production.
- Students will incorporate issues related to sustainability and the impact their prototype may have on the environment
- Students are expected to analyse and evaluate design decisions and outcomes for prototypes/products made by themselves and others
- Students are expected to analyse and evaluate of wider issues in design technology, including social, moral, ethical and environmental impacts.

**Assessment overview**

- The investigation report is internally assessed and externally moderated.
- Students will produce a substantial design, make and evaluate project which consists of a portfolio and a prototype
- The portfolio will contain approximately 40 sides of A3 paper (or electronic equivalent)
- There are four parts to the assessment:
  - **Part 1: Identifying and outlining possibilities for design**  
Identification and investigation of a design possibility, investigation of client/end user needs, wants and values, research and production of a specification
  - **Part 2: Designing a prototype**  
Design ideas, development of design idea, final design solution, review of development and final design and communication of design ideas
  - **Part 3: Making a final prototype**  
Design, manufacture and realisation of a final prototype, including tools and equipment and quality and accuracy
  - **Part 4: Evaluating own design and prototype**  
Testing and evaluation

**Assessment Objectives**

Students must:		% in GCE A Level
<b>AO1</b>	Identify, investigate and outline design possibilities to address needs and wants	15
<b>AO2</b>	Design and make prototypes that are fit for purpose	25
<b>AO3</b>	Analyse and evaluate <ul style="list-style-type: none"> <li>• design decisions and outcomes, including for prototypes made by themselves and others</li> <li>• wider issues in design and technology</li> </ul>	25
<b>AO4</b>	Demonstrate and apply knowledge and understanding of <ul style="list-style-type: none"> <li>• technical principles</li> <li>• design and making principles</li> </ul>	35
<b>Total</b>		<b>100%</b>

**Breakdown of Assessment Objectives**

Component	Assessment Objectives				Total for all Assessment Objectives
	AO1 %	AO2 %	AO3 %	AO4 %	
Component 1: Principles of Design and Technology	-	-	15	35	50%
Component 2: Independent Design and Make Project	15	25	10	-	50%
<b>Total for GCE A Level</b>	<b>15%</b>	<b>25%</b>	<b>25%</b>	<b>35%</b>	<b>100%</b>

NB Totals have been rounded either up or down.