

# Website – KS4 Design & Technology

Students study the GCSE AQA Design and Technology specification (8552).

Paper 1	Non-exam assessment (NEA)
<p><b>What's assessed</b></p> <ul style="list-style-type: none"><li>• Core technical principles</li><li>• Specialist technical principles</li><li>• Designing and making principles</li></ul> <p>In addition:</p> <ul style="list-style-type: none"><li>• At least 15% of the exam will assess maths</li><li>• At least 10% of the exam will assess science</li></ul>	<p><b>What's assessed</b></p> <p>Practical application of:</p> <ul style="list-style-type: none"><li>• Core technical principles</li><li>• Specialist technical principles</li><li>• Designing and making principles</li></ul>
<p><b>How it's assessed</b></p> <ul style="list-style-type: none"><li>• Written exam: 2 hours</li><li>• 100 marks</li><li>• 50% of GCSE</li></ul>	<p><b>How it's assessed</b></p> <ul style="list-style-type: none"><li>• Non-exam assessment (NEA): 30-35 hours approx.</li><li>• 100 marks</li><li>• 50% of GCSE</li></ul>
<p><b>Questions</b></p> <p><b>Section A – Core technical principles (20 marks)</b> A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding.</p> <p><b>Section B – Specialist technical principles (30 marks)</b> Several short answer questions (2-5 marks) and one extended response to assess a more in depth knowledge of technical principles.</p> <p><b>Section C – Designing and making principles (50 marks)</b> A mixture of short answer and extended response questions.</p>	<p><b>Task(s)</b></p> <ul style="list-style-type: none"><li>• Substantial design and make task</li><li>• Assessment criteria:<ul style="list-style-type: none"><li>- Identifying and investigating design possibilities</li><li>- Producing a design brief and specification</li><li>- Generating design ideas</li><li>- Developing design ideas</li><li>- Realising design ideas</li><li>- Analysing &amp; evaluating</li></ul></li><li>• In the spirit of the iterative design process, the above should be awarded holistically where they take place and not in linear manner.</li><li>• Contextual challenges to be released annually by AQA on 1 June in the year prior to the submission of the NEA.</li><li>• Students will produce a prototype and a portfolio of evidence.</li><li>• Work will be marked by teachers and moderated by AQA.</li></ul>

# Website – KS5 Design & Technology (Product Design)

Students study the A-Level AQA Design and Technology Product Design specification (7552).

Paper 1	Paper 2	Non-exam assessment (NEA)
<b>What's assessed</b> Technical principles	<b>What's assessed</b> Designing and making principles	<b>What's assessed</b> Practical application of technical principles, designing and making principles.
<b>How it's assessed</b> <ul style="list-style-type: none"><li>• Written exam: 2 hours and 30 minutes</li><li>• 120 marks</li><li>• 30% of A-level</li></ul>	<b>How it's assessed</b> <ul style="list-style-type: none"><li>• Written exam: 1 hour and 30 minutes</li><li>• 80 marks</li><li>• 20% of A-level</li></ul>	<b>How it's assessed</b> <ul style="list-style-type: none"><li>• Substantial design and make project</li><li>• 100 marks</li><li>• 50% of A-level</li></ul>
<b>Questions</b> Mixture of short answer and extended response.	<b>Questions</b> Mixture of short answer and extended response questions. <b>Section A:</b> <ul style="list-style-type: none"><li>• Product Analysis: 30 marks</li><li>• Up to 6 short answer questions based on visual stimulus of product(s).</li></ul> <b>Section B:</b> <ul style="list-style-type: none"><li>• Commercial manufacture: 50 marks</li><li>• Mixture of short and extended response questions</li></ul>	<b>Evidence</b> Written or digital design portfolio and photographic evidence of final prototype.

# Website – KS4 Engineering

Students study the NCFE Level 1/2 Technical Award in Engineering

## Paper 1

**What's assessed** - Knowledge and understanding:

- AO1 – Learners to recall and communicate the fundamental elements of knowledge and understanding.
- AO2 – Learners to apply their knowledge and understanding to real-world contexts and novel situations.
- AO3 – Learners to develop analytical thinking skills to make reasoned judgements and reach conclusions.

**How it's assessed**

- Written exam: 1 hour 30 minutes
- 80 marks
- 40% of GCSE

**Questions**

A variety of assessment questions will be used, including multiple-choice, short-answer and extended-response questions. Questions will relate to:

- CA1 – Engineering Disciplines
- CA2 – Applied Science and Mathematics in Engineering
- CA3 – Reading Engineering Drawings
- CA4 – Properties, Characteristics and Selection of Engineering Materials
- CA5 – Engineering Tools, Equipment and Machines
- CA6 – Hand-Drawn Engineering Drawings
- CA7 – Computer-Aided Design (CAD) Engineering Drawings
- CA8 – Production Planning Techniques
- CA9 – Applied Processing Skills and Techniques

## Non-exam assessment (NEA)

**What's assessed** - Practical application:

- AO1 – Learners to recall and communicate the fundamental elements of knowledge and understanding.
- AO2 – Learners to apply their knowledge and understanding to real-world contexts and novel situations.
- AO3 – Learners to develop analytical thinking skills to make reasoned judgements and reach conclusions.
- AO4 – Learners to demonstrate the essential technical skills relevant to the vocational sector by applying the appropriate processes, tools and techniques.
- AO5 – Learners to analyse and evaluate the essential technical skills, processes, tools and techniques relevant to the vocational sector.

**How it's assessed**

- Non-exam assessment (NEA): 18 hours plus 2 hours preparation and research time.
- 120 marks
- 60% of GCSE

**Task(s)**

Students will produce a portfolio of work to support the design and make brief which is set by the exam board. Tasks will relate to:

- Task 1 – Materials Research and Materials Selection
- Task 2 – Hand-Drafted Engineering Drawings
- Task 3 – CAD Produced Engineering Drawings
- Task 4 – Production Plan
- Task 5 – Functioning Prototype Manufacture
- Task 6 – Summative Evaluation

# Website – KS5 Engineering (AAQ)

Students study the Pearson BTEC Level 3 National Extended Certificate in Engineering (AAQ).

Unit 1: Engineering Principles	Unit 2: Engineering Applications	Unit 3: Engineering Design	Unit 4: Engineering Project
<p><b>What's assessed</b> Engineering principles – this is assessed by an exam.</p>	<p><b>What's assessed</b> Engineering applications – this is assessed by an exam.</p>	<p><b>What's assessed</b> Engineering design – this is assessed by a set assignment from the exam board.</p>	<p><b>What's assessed</b> Engineering project – this is assessed by a set assignment from the exam board.</p>
<p><b>How it's assessed</b></p> <ul style="list-style-type: none"> <li>• Written exam: 2 hours, 15 minutes</li> <li>• 90 marks</li> <li>• 30% of BTEC</li> </ul>	<p><b>How it's assessed</b></p> <ul style="list-style-type: none"> <li>• Written exam: 2 hours</li> <li>• 70 marks</li> <li>• 20% of BTEC</li> </ul>	<p><b>How it's assessed</b></p> <ul style="list-style-type: none"> <li>• Non-exam assessment</li> <li>• Pass, Merit, Distinction</li> <li>• 30% of BTEC</li> </ul>	<p><b>How it's assessed</b></p> <ul style="list-style-type: none"> <li>• Non-exam assessment</li> <li>• Pass, Merit, Distinction</li> <li>• 20% of BTEC</li> </ul>
<p><b>Questions</b> Mixture of short open response, short and long calculation questions.</p> <p>Students will need to interpret and analyse information and diagrams related to engineering contexts and use the data presented. The questions will assess knowledge, understanding and application of mathematical, mechanical and electrical/electronic principles within contextualised problems.</p>	<p><b>Questions</b> Mixture of multiple choice, short and long answer questions.</p> <p>Students will need to explore and relate to contexts and data presented. The questions will assess understanding of engineering materials, processes and the impact of technological developments on a range of engineering sectors.</p>	<p><b>Evidence</b> Written or digital design portfolio and photographic evidence of final prototype.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>• Explore initial design proposals to meet the requirements of an engineering design challenge.</li> <li>• Develop initial design ideas into 3-dimensional models in response to an engineering design challenge.</li> <li>• Develop 3-dimensional models into 2-dimensional engineering drawings and present the final design solution.</li> <li>• Review the design process when responding to an engineering design challenge.</li> </ul>	<p><b>Evidence</b> Written or digital design portfolio and photographic evidence of final prototype.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>• Investigate an engineering project in a relevant specialist area.</li> <li>• Develop project management processes and a design solution for the engineering project.</li> <li>• Undertake the solution for an engineering project and develop skills to present the solution.</li> </ul>