

# Design and Technology - Year 10

	Year 10 – Block A	Year 10 – Block B
<b>What do we teach?</b>	<p>Specification: AQA Design and Technology (8552)</p> <p>Core Technical Principles – 1.1 new and emerging technologies, 1.2 energy generation and storage, 1.3 modern and smart materials, 1.4 systems approach to design, 1.5 mechanical devices.</p> <p>Sketching Skills – isometric sketching, 2-point perspective, orthographic projection.</p> <p>Practical Skills – introduction to hand tools and machinery, CAD/CAM, working with timbers and using different joining techniques to produce a final product.</p>	<p>Core Technical Principles – 1.6 material categories and properties.</p> <p>NEA – practice of non-examined assessment portfolio pages.</p> <p>Sketching Skills – product drawing and sketch modelling.</p> <p>Practical Skills – Alongside the material categories theory sessions, students will complete several mini design and make projects to expose them to using and working with multiple materials.</p>
<b>How does this meet the National curriculum?</b>	<p>During Block A students will focus on acquiring key skills and techniques that will enable them to be confident and creative in the design and make process as well as develop their understanding of how design decisions are influenced and influences our environment, culture and society. The focus will be on the following objectives:</p> <p>AO3: Analyse and evaluate:</p> <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> <p>AO4: Demonstrate and apply knowledge and understanding of:</p> <ul style="list-style-type: none"> <li>Technical principles.</li> <li>Designing and making principles.</li> </ul>	<p>Block B will be heavily focused on the process of design from conception to evaluation of a final product. Students will work with all material categories within the curriculum and complete practice NEA in the form of mini projects. The focus will be on the following objectives:</p> <p>AO1: Identify, investigate and outline design possibilities to address needs and wants.</p> <ul style="list-style-type: none"> <li>Develop realistic design proposals as a result of the exploration of design opportunities and users' needs, wants and values.</li> <li>Be ambitious and open to explore and take design risks in order to stretch the development of design proposals, avoiding cliched or stereotypical responses.</li> </ul> <p>AO2: Design and make prototypes that are fit for purpose.</p> <ul style="list-style-type: none"> <li>Use imagination, experimentation and combine ideas when designing.</li> <li>Communicate their design ideas and decisions using different media and techniques.</li> </ul>
<b>Why does this knowledge matter?</b>	<p>Design and Technology focuses on practical manufacturing skills to ensure students are able to design creative solutions to real-world problems without being hindered by a lack of constructional understanding. Our KS4 Design and Technology curriculum has been designed to upskill students quickly through a controlled design and make project. The focus of this project is to teach core woodworking techniques. Devoting one lesson a week to drawing skills will enable students to present their creative ideas with clarity and confidence. This is a core skill in Design and Technology that will be used throughout the course.</p>	<p>Block B's focus is on the entirety of the design process. This is crucial as exposure to all parts will allow students to confidently approach their final non-examined assessment (NEA) which starts at the end of Year 10. Allowing students to attempt different pages of a design portfolio and receive targeted feedback on this will allow them to highlight what areas of their practice need improving. Alongside this NEA practice, students will be able to work with all of the following material categories; papers and boards, polymers, metals and alloys and textiles. This is important as it will enable students to make informed material and design decisions during their final NEA.</p>
<b>Why do we teach in this sequence?</b>	<p>Our GCSE Design and Technology specification maps out the knowledge, practical and design skills required to confidently design using timbers, papers and boards, polymers, metals and alloys and textiles. The specification is delivered through three lessons a week. Each lesson has a specific focus linked to the specification: core theory, practical skills, and drawing skills.</p> <p>Core Theory – in these lessons students will be taught all of the knowledge required to succeed in GCSE Design and Technology. Specifically, in Block A students will learn sections 1.1, 1.2, 1.3, 1.4 and 1.5 of core technical principles in the specification and in Block B students will learn section 1.6.</p> <p>Practical Skills – in these lessons students will be taught about how to work with different woodworking hand tools, workshop machinery and types of timber-based materials and components in Block B and then polymers, textiles, papers and boards, and metals in Block B.</p> <p>Drawing skills – in these lessons students will be taught a variety of sketching techniques and give them plenty of practice to become confident sketchers. This will enable students to allow their creativity to thrive without the worry of a lack of drawing skill.</p>	
<b>What career links are made?</b>	<p>Engineering, Graphic Design, Product Design, Architecture, Set Design, Illustration, Carpentry.</p>	

# Design and Technology - Year 11

	Year 11 – Block A	Year 11 – Block B
<b>What do we teach?</b>	Specification: AQA Design and Technology (8552)	
	<p>Specialist Technical Principles with a material specialism of timber-based materials and Designing and Making Principles through the delivery of the Non-Examined Assessment (NEA).</p> <p>Students will focus on specialist techniques and processes when working with timber. Alongside this, students will continue their NEA by learning how to investigate in and around a conceptual challenge in order to design and make a product to solve a real-world problem.</p>	<p>Block B will focus on exam question techniques to prepare all students for their final exam through practice exam questions and regular knowledge retrieval.</p> <p>Students will also finish their NEA portfolio by the end of Block B.</p>
<b>How does this meet the National curriculum?</b>	<p>Year 11 focuses on upskilling students on the advanced methods of working with timber-based materials in order to give them the breadth of knowledge to enable them to design products effectively. Students will use this knowledge to complete a design and make portfolio to provide evidence that they can:</p> <p style="padding-left: 40px;">AO1 – Identify, investigate and outline design possibilities, AO2 – Design and make prototypes that are fit for purpose, AO3 – Analyse and evaluate.</p> <p>The research, investigation, evaluation and analysis skills learnt and applied during the NEA will also be assessed in Section C of the final exam.</p>	
<b>Why does this knowledge matter?</b>	<p>The completion of a full design and make portfolio (the NEA) gives students great experience of what goes into creating an industry standard design portfolio. The investigation and analysis sections of the NEA trains students to be critical of their work and the work of others so that they can make informed design decisions that are suitable for their chosen clients.</p> <p>Section C of the final exam equates to 25% of the overall grade for the GCSE D&amp;T course and therefore is a focus during Year 11 so that students can articulate their opinions of designs and the work of others.</p>	
<b>Why do we teach in this sequence?</b>	<p>Year 11 is sequenced in this way so that students gain in-depth material knowledge before the design stage of their NEA. This allows students to understand how timber-based products can be manufactured which opens more design opportunities when they get to the design stage of their NEA. As the skills learnt and applied during the NEA are strongly linked to the Designing and Making Principles section of the AQA Design and Technology specification, teaching these alongside students completing their NEA provides context for the students.</p> <p>Block B's focus on exam preparation allows student to practice exam competition so that when it comes to their final exam they are ready for the vocabulary used and understand how to answer each type of question effectively.</p>	
<b>What career links are made?</b>	Engineering, Graphic Design, Product Design, Architecture, Set Design, Illustration, Carpentry.	