

YEAR 10 RM

Y10 INTENT	By the end of year 10, students will be confident in their knowledge enough to complete their NEA, Design and make task independently. This year the students will build on knowledge taught in previous years to be confident in themselves and in their deep-rooted knowledge ready for their future learning and progress. By the end of year 10, the students will have developed their problem-solving skills and be able to confidently create a design and product based on user wants and needs. Students in year 10 will also be able to identify their weaknesses within the design and make process. In preparation for year 11, students will also complete a practice NEA to further identify where their areas of high ability and areas for development lie in readiness for year 11 and also beyond.
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Exam Information (Y10-11)	Board:	AQA
	Qualification:	Design and Technology
	Website link to specification/resources:	AQA Design and Technology GCSE Design and Technology

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Box Joints	Materials and their Working Properties	Designing Principles	New and Emerging Technologies	Specialist Materials	Common Specialist Principles
<p>Selection of the correct hand tools and machinery</p> <p>Safe use of tools</p> <p>Selection and use of specialist techniques (used to shape, fabricate, construct)</p> <p>Preparing a material for a surface finish – Sanding, buffing, polishing</p> <p>Applying a wax surface finish</p> <p>Quality control</p>	<p>In relation to the materials below:</p> <p>Where do they come from? How are they create? What are the main applications?</p> <p>What are the key properties of the material? How is the performance of the materials affected by their properties?</p> <p>Materials: Papers and Boards, natural and manufactured timbers, metals and alloys, polymers and textiles.</p>	<p>Investigation.</p> <p>Primary data – Creating questionnaires, focus groups, client interviews, mood boards, existing data</p> <p>Secondary data – Product analysis, anthropometrics, analysing existing research and data.</p> <p>The work of others – in particular looking at a range of architects specific to student interests.</p> <p>Design strategies – isometric drawing, CAD, model making. Initial ideas, development of ideas.</p> <p>Communication of design ideas and prototype development – Think outside the box when creating a product.</p> <p>(Continues into Spring 2)</p>	<p>Robotics, automation and production in industry – How will impact the future of production and jobs?</p> <p>Production techniques and systems – automation</p> <p>Enterprise</p> <p>Market pull and technology push – How do companies use this to their advantage?</p> <p>People, society and culture – How different cultures impact certain design aspects – how does society influence product development?</p> <p>Sustainability and the environment – 6Rs, the journey a sustainable material might go on which means it is less environmentally friendly.</p> <p>Critical evaluation of new and emerging technologies – planned obsolescence –</p> <p>Ethics – workers rights, fast fashion</p>	<p>Timber conversion – From tree to product</p> <p>Seasoning</p> <p>Manufactured board – positives and negatives</p> <p>Sustainable timber production</p> <p>Standard stock forms, types and sizes</p> <p>Shaping, processing and machining wood</p> <p>Wasting by hand and abrading</p> <p>Laminating</p> <p>Bending</p> <p>Wood joints</p> <p>Commercial products</p> <p>Surface treatments and finishes</p> <p>Quality control</p>	<p>How do forces and stresses impact on different materials and objects? Improving functionality of products by considering how they will be used.</p> <p>Ecological and social footprint – How do some “environmentally friendly” products have a negative impact on the environment? The six R’s of sustainability– Reuse, refuse, reduce, recycle, repair, rethink</p> <p>Scales of production – One off production, batch production, mass production, continuous production</p>

			Design for maintenance		
<p>Can do statement 1: (M) I can make a box with 4 different joints to an excellent standard with a surface finish. I can problem solve and adapt my design to suit limitations</p> <p>Can do statement 2: (S) I can make a wooden box safely with lid using 4 different joints to a good standard with a smooth surface with added surface finish.</p> <p>Can do statement 3: (D) I can make a wooden box with a lid safely using 4 different joints to a good standard and finish.</p>	<p>Can do statement 1: (M) I know the primary sources of materials for producing a variety of materials in each of five key material areas. I am able to recognise and characterise different types of materials in each key area. I understand how the physical and working properties of a material products affect their performance. I consistently select the most appropriate material appropriate to a given task</p> <p>Can do statement 2: (S) I know the primary sources of materials for producing a variety of materials in each of five key material areas. I am able to recognise and characterise different types of materials in each key area. I understand how the physical and working properties of a material products affect their performance</p> <p>Can do statement 3: (D) I know the primary sources of materials for producing a variety of materials in each of five key material areas. I am able to recognise and characterise different types of materials in each key area.</p>	<p>Can do statement 1: (M) I can research, design and make an MP3 speaker using architecture as inspiration. I can create a brief which clearly reflects my primary research and my client's needs and wants. I can evaluate my making against my specification.</p> <p>Can do statement 2: (S) I can research, design and make an MP3 speaker using architecture as inspiration. I can create a brief which clearly reflects my primary research. I can evaluate my making against my specification.</p> <p>Can do statement 3: (D) I can research, design and make and MP3 speaker. I can create a brief based on my theme of architecture. I can evaluate my making discussing what went well and what should be improved.</p>	<p>Can do statement 1: (M) I understand why automation is used in industry and can discuss the positives and negatives of this. I can explain the difference between market pull, technology push and planned obsolescence and the ethical implications. I understand why technologies have developed for industry today and what this means for workers within this field.</p> <p>Can do statement 2: (S) I understand why automation is used in industry and can discuss the positives of this. I can explain the difference between market pull, technology push and planned obsolescence. I understand why technologies have developed for industry today.</p> <p>Can do statement 3: (D) I understand why automation is used in industry. I can explain the difference between market pull and technology push. I understand why technologies have developed for industry today.</p>	<p>Can do statement 1: (M) I understand the main processes involved in producing workable forms of timber. I am aware of sustainability and ethical factors in timber production and use. I understand the advantages and disadvantages of manufactured board compared with natural wood</p> <p>Can do statement 2: (S) I understand the main processes involved in producing workable forms of timber. I understand the advantages and disadvantages of manufactured board compared with natural wood.</p> <p>Can do statement 3: (D) I understand where timber comes from and how it is felled. I understand where manufactured board comes from and its positives and negatives.</p>	<p>Can do statement 1: (M) I understand the various forces and stresses which impact a variety of materials. I understand how materials can be enhanced to resist and work with forces and stresses. I understand how consuming the Earth's natural resources can negatively impact the environment, including during the manufacturing process. I understand how products can be produced in various volumes and why different manufacturing methods are used.</p> <p>Can do statement 2: (S) I understand the various forces and stresses which impact a variety of materials. I understand how consuming the Earth's natural resources can negatively impact the environment. I understand how products can be produced in various volumes.</p> <p>Can do statement 3: (D) I understand what forces and stresses are. I understand what renewable and non-renewable materials are. I understand what a variety of production methods are.</p>