



## CHS Curriculum Intent

**SUCCESSFUL:** Learners who gain deep and powerful knowledge in preparation for life; combining academic rigour, curiosity and creative flair.

**CREATIVE:** Learners who are imaginative, optimistic and inventive; finding their voice to become effective communicators prepared for lifelong adaptability

**HAPPY:** Learners who are confident, resilient, well-rounded citizens; they understand the world’s communities and are ready to discover their place in it.

## CHS Curriculum Area Framework for Learning – Design and Technology – Year 11

<b>SUBJECT</b>	<b>Design Technology</b>
<b>INTENT</b>	<p style="text-align: center;">“There are three responses to a piece of design – yes, no, and WOW! Wow is the one to aim for.” – Milton Glaser</p> <p>By studying Design and Technology we want students to be secure in the core skills of teamwork, communication, co-operation, and empathy by immersing them into the world of tomorrow and inspiring them to solve real world problems using practical solutions. We aim to inspire our students to become reflective and creative individuals who have the confidence to explore and question the world around them.</p> <p>Everything we use in life has been designed by someone, by people who are risk takers, experimenters, who are not afraid to make mistakes and learn from them. Therefore, through the in-depth knowledge of materials, products and innovations, students learn to interact positively with the ever-changing world around them and how this can have potential implications on societies, cultures, environment, and new innovations.</p> <p>Our aim is to develop curious, confident young people who are introduced to a vibrant range of activities and cultural experiences covering a broad-spectrum of design disciplines. We encourage creativity supporting students to go beyond the classroom creating responsible consumers, and successful innovative designers and engineers of tomorrow.</p> <p>We aim to develop happy, creative and successful learners that can change the ever-developing Design and Technology landscapes, such as product design, engineering, fashion design and Sustainable futures, preparing them for A-Level, level 3 BTECs or apprenticeships.</p>

**Department: Computing & Technology 2021 - 2022**

**Subject: AQA Design Technology (8552)**

<b>Year Group</b>	Year 11
<b>Rationale/ Narrative</b>	As the final year of their GCSE Design and Technology course, students will work on their NEA project worth 50% of their final qualification grade. This project requires students to use the contexts set by the exam board to undertake a design, realise and evaluate activity that suits the needs of a client they have chosen. Year 11 sees the students complete their ‘Non-Examined Assessment/NEA) - A major piece of course work that is worth 50% of the final qualification (Current contexts: Outdoor living, Designing for Emergencies, Keeping fit and active).



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	Students will utilize knowledge and skills acquired over the previous academic year to enable them to work independently. Students will be required to show creative skills when designing and practical skills when making their projects based on their chosen brief and self-directed area of focus. Students will also spend time practicing and developing examination skills for their terminal examination at the end of Year 11.							
	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>		
<b>KNOWLEDGE</b>	<p>NEA Task (Coursework) Section B, C, D,</p> <p>Specific contextual challenges for this academic cycle of NEA's include:</p> <ul style="list-style-type: none"> <li>• Outdoor living</li> <li>• Designing for emergencies</li> <li>• Keeping fit and active</li> </ul> <p>Throughout the course of NEA task being completed this term (having been started at the end of Summer 2) there are a number of key knowledge areas that students will have to apply to their learning and evidence in a portfolio of work including in:</p> <p><b>Core technical principles:</b> New and emerging technologies, Energy generation and storage, Developments in new materials, Systems approach to designing, Mechanical devices, Materials and their working properties.</p> <p><b>Specialist technical principles:</b> Selection of materials or components, Forces and stresses, Ecological and social footprint, Sources and origins of materials, Using and working with materials, Stock forms, types and sizes, Scales of production, Specialist techniques and processes, Surface treatments and finishes, Materials (Relevant to NEA task being completed)</p> <p><b>Designing and making principles:</b> Investigation, primary and secondary data, Environmental, social and economic challenge, The work of others, Design strategies, Communication of design ideas, Prototype development, Selection of materials and components, Tolerances, Material management, Specialist tools and equipment, Specialist techniques and processes.</p>		<p>NEA Task (Coursework) Section B, C, D,</p> <p>Throughout the course of NEA task being completed this term (having been started at the end of Summer 2) there are a number of key knowledge areas that students will have to apply to their learning and evidence in a portfolio of work including in:</p> <p><b>Core technical principles:</b> New and emerging technologies, Energy generation and storage, Developments in new materials, Systems approach to designing, Mechanical devices, Materials and their working properties.</p> <p><b>Specialist technical principles:</b> Selection of materials or components, Forces and stresses, Ecological and social footprint, Sources and origins of materials, Using and working with materials, Stock forms, types and sizes, Scales of production, Specialist techniques and processes, Surface treatments and finishes, Materials (Relevant to NEA task being completed)</p> <p><b>Designing and making principles:</b> Investigation, primary and secondary data, Environmental, social and economic challenge, The work of others, Design strategies, Communication of</p>		<p>Revision and Exam Preparations</p> <p>The knowledge, understanding and skills that all students must develop are separated into:</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>During this half term students will focus on revision topics and exam preparation in preparation for the examination (50% of final grade). Students will be reviewing the topics outlined below;</p> <ul style="list-style-type: none"> <li>• New and emerging technologies</li> <li>• Energy generation and storage</li> <li>• Developments in new materials</li> <li>• Systems approach to designing</li> <li>• Mechanical devices</li> <li>• Materials and their working properties</li> <li>• Selection of materials or components</li> <li>• Forces and stresses</li> <li>• Ecological and social footprint</li> </ul>		<p>Revision and Exam Preparations</p> <p>The knowledge, understanding and skills that all students must develop are separated into:</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>During this half term students will focus on revision topics and exam preparation in preparation for the examination (50% of final grade). Students will be reviewing the topics outlined below;</p> <ul style="list-style-type: none"> <li>• <b>Material Areas</b> <ul style="list-style-type: none"> <li>○ Papers and boards</li> <li>○ Timber based materials</li> <li>○ Metal based materials</li> <li>○ Polymers</li> <li>○ Textile based materials</li> <li>○ Electronic and mechanical systems</li> </ul> </li> <li>• Investigation, primary and secondary data</li> <li>• Environmental, social and economic challenge</li> <li>• The work of others</li> <li>• Design strategies</li> <li>• Communication of design ideas</li> </ul>	



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		<p>design ideas, Prototype development, Selection of materials and components, Tolerances, Material management, Specialist tools and equipment, Specialist techniques and processes.</p>	<ul style="list-style-type: none"> <li>• Sources and origins of materials</li> <li>• Using and working with materials</li> <li>• Stock forms, types and sizes</li> <li>• Scales of production</li> <li>• Specialist techniques and processes</li> <li>• Surface treatments and finishes</li> </ul>	<ul style="list-style-type: none"> <li>• Prototype development</li> <li>• Selection of materials and components</li> <li>• Tolerances</li> <li>• Material management</li> <li>• Specialist tools and equipment</li> <li>• Specialist techniques and processes</li> </ul>	
<p><b>SKILLS</b></p>	<p>The NEA project in its entirety should take between 30-35 hours to complete and consist of a working prototype and a concise portfolio of approximately 20 pages of A3 paper.</p> <p>The project aims to let students not just to demonstrate their knowledge and understanding of Design and Technology but also to enable them with the skills to work independently, decision making and analytical thinking, making choices that impact on themselves and others.</p> <p>Students must demonstrate skills in applying the above knowledge to the six assessment areas;</p> <ul style="list-style-type: none"> <li>• Researching and investigating (A)</li> <li>• Writing a design brief and specification(B)</li> <li>• Generating ideas (C)</li> <li>• Developing ideas (D)</li> <li>• Realising an idea – making/manufacturing skills - (E)</li> <li>• Reflecting and evaluating (F)</li> </ul> <p>Alongside the areas assessed and the skills that are demonstrated in these categories, students’ needs to show creativity, and demonstrate suitable skills using ICT or CAD software where appropriate.</p>	<p>The NEA project in its entirety should take between 30-35 hours to complete and consist of a working prototype and a concise portfolio of approximately 20 pages of A3 paper.</p> <p>The project aims to let students not just to demonstrate their knowledge and understanding of Design and Technology but also to enable them with the skills to work independently, decision making and analytical thinking, making choices that impact on themselves and others.</p> <p>Students must demonstrate skills in applying the above knowledge to the six assessment areas;</p> <ul style="list-style-type: none"> <li>• Researching and investigating (A)</li> <li>• Writing a design brief and specification(B)</li> <li>• Generating ideas (C)</li> <li>• Developing ideas (D)</li> <li>• Realising an idea – making/manufacturing skills - (E)</li> </ul>	<p>As well as exploring a range of revision strategies and techniques in Design and Technology students will be looking at developing their ability to answer a range of examination questions and question styles including how to answer:</p> <ul style="list-style-type: none"> <li>• Section A - A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding</li> <li>• Section B - Several short answer questions (2–5 marks) and one extended response to assess a more in-depth knowledge of technical principles</li> <li>• Section C - A mixture of short answer and extended response questions.</li> </ul> <p>Preparations to also include:</p> <ul style="list-style-type: none"> <li>• Extended writing</li> <li>• Competing tables and graphs</li> <li>• Descriptive writing</li> <li>• Revision techniques</li> <li>• Reading questions</li> </ul>	<p>As well as exploring a range of revision strategies and techniques in Design and Technology students will be looking at developing their ability to answer a range of examination questions and question styles including how to answer:</p> <ul style="list-style-type: none"> <li>• Section A - A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding</li> <li>• Section B - Several short answer questions (2–5 marks) and one extended response to assess a more in-depth knowledge of technical principles</li> <li>• Section C - A mixture of short answer and extended response questions.</li> </ul> <p>Preparations to also include:</p> <ul style="list-style-type: none"> <li>• Extended writing</li> <li>• Competing tables and graphs</li> <li>• Descriptive writing</li> <li>• Revision techniques</li> <li>• Reading questions</li> </ul>	



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			<ul style="list-style-type: none"> <li>• Reflecting and evaluating (F)</li> </ul> <p>Alongside the areas assessed and the skills that are demonstrated in these categories, students' needs to show creativity, and demonstrate suitable skills using ICT or CAD software where appropriate.</p>	<ul style="list-style-type: none"> <li>• Sketching and designing</li> </ul>	<ul style="list-style-type: none"> <li>• Sketching and designing</li> </ul>	
<p><b>ASSESSMENTS</b></p>	<p><b>Key Assessment Piece: Classwork piece –</b> NEA Section C: Producing Design Ideas (20 Marks) initial submission.</p> <p><b>Key Assessment Piece: classwork piece –</b> NEA Section D: Developing Design Ideas (20 Marks) initial submission.</p>	<p><b>Key Assessment Piece:</b> Year 11 Mock Exam Students will complete a full paper as part of their mock examinations. Home Study topics will be shared with their class teacher.</p> <p><b>Key Assessment Piece: Classwork piece –</b> NEA Section D: Developing Design Ideas (20 Marks) developmental submission from feedback.</p> <p><b>Key Assessment Piece: Classwork piece –</b> NEA Section E: Realizing Design Ideas (20 Marks) initial submission.</p>	<p><b>Throughout Spring 1 there may be some interventions and review of NEA tasks to support students' progress.</b></p> <p><b>Key Assessment Piece:</b> NEA Submission – Section F (Reflecting and Evaluating) Reviews of their NEA projects will form part of this assessment to ensure teacher feedback can be provided prior to final submission.</p> <p>Section B/C exam question: Industry, Enterprise and New Technologies</p> <p><b>Key Assessment Piece: Classwork piece –</b> Section B/C exam question: Energy generation and storage</p>	<p><b>Key Assessment Piece:</b> Year 11 Mock Exam Students will complete a full paper as part of their mock examinations. Home Study topics will be shared with their class teacher.</p> <p><b>Key Assessment Piece:</b> Students will be submitting final NEA tasks during this half term, students will be assessed and graded based upon the criteria for the NEA tasks as outline in the specification.</p> <ul style="list-style-type: none"> <li>• <b>Classwork piece –</b> Section B/C exam question: Ecological and social footprint, Sources and origins of materials</li> <li>• <b>Classwork piece –</b> Section B/C exam question: Specialist techniques and processes</li> </ul>	<p><b>Assessment tasks for this half term will solely focus on practice exam questions and marked in line with exam mark schemes which will help support the students prior to the final exam.</b></p> <p>Examination questions and sample questions will be used to help familiarise students with the examination format and the methods of marking used by examiners.</p> <p>Students will unpick the mark schemes as well as possible responses to questions to structure the answers to the marks available.</p>	