



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 Technology– Year 10

SUBJECT	Design Technology
INTENT	<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)

Year Group	Year 10
Rationale/ Narrative	<p>Following on from the foundation year in the subject, students will this year develop greater independence and understanding of:</p> <ul style="list-style-type: none"> • Core Technical principles • Specialist Technical principles • Designing and making principle <p>Students will complete this year looking at areas of Design and Technology that underpin their understanding of the wider world of Design and Technology beyond just material areas, focussing on looking at the impact of Technology over time, from the industrial revolution through to the use of sophisticated CAM manufacture</p>



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	<p>and automation systems. Students will look at STEM focussed areas and how this has an impact on the products we design and make, as well as exploring the work of other key designers in the fields of architecture, fashion, graphics, systems, product design etc.</p> <p>Towards the end of Year 10 students will develop their own independent projects based upon exam board set contexts as the NEA begins in Summer 2.</p>					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KNOWLEDGE	<p>Students will learn about new and emerging technologies:</p> <ul style="list-style-type: none"> The impact of new and emerging technologies Smart and modern materials. Enterprise based on the development of an effective business innovation. Blue sky thinking. How technology push/market pull affects choice. How products are designed and made to have both positive and negative impact on others and the environment. The contemporary and potential future use manufacturing systems. 	<p>Students will learn about Energy, Materials, systems and devices:</p> <ul style="list-style-type: none"> How power is generated from fossil fuel. The impact of resource consumption on the planet Arguments for and against the selection of fossil fuels. How nuclear power is generated. Arguments for and against the selection of nuclear power. How power is generated from sustainable sources. Arguments for and against the selection of renewable energy. Kinetic pumped storage systems. Alkaline and re-chargeable batteries. Forces and stresses 	<p>Students will learn about common technical principles:</p> <ul style="list-style-type: none"> Forces and stresses on objects and materials Structures STEM (Physical properties of materials) Improving functionality Ecological and social footprints Safe working conditions Pollution and product miles The six R's Scales of production 	<p>Students will learn about Designing principles</p> <ul style="list-style-type: none"> Compare the work of past and present designers and companies to inform their own designing. Learn how to use a range of different design strategies. Develop, communicate, record and justify design ideas using a range of appropriate techniques Respecting people of different faiths and beliefs. 	<p>Students will learn about Making principles</p> <ul style="list-style-type: none"> Designing and developing prototypes in response to client wants and needs. Selecting and using a variety of materials and components. Material management. Selecting and using specialist tools and equipment. Identification of Specialist techniques and processes suitable for a specifically named material. 	<p>Students will be introduced to the Board prescribed NEA topics.</p> <p>They will focus their learning on the completion of the initial required sections. In relation to these students will:</p> <ul style="list-style-type: none"> Analyse the contextual challenges set out by the examination board. Develop a design brief.
SKILLS	<p>Students will be able to:</p> <ul style="list-style-type: none"> Identify, select and breakdown key information. summarize facts. Investigate, research and question. Analyze and evaluate CAD and rapid prototyping 	<p>Students will be able to:</p> <ul style="list-style-type: none"> Identify, select and breakdown key information. summarize facts. Investigate, research and question. Argue Analyze and evaluate 	<p>Students will be able to develop and use successfully a variety of practical skills which will include:</p> <ul style="list-style-type: none"> Drawing Measuring Marking Selecting and using Specialist tools and machines 	<p>Students will develop the skills of:</p> <ul style="list-style-type: none"> Investigation Analysis Evaluation Drawing by hand and with computer software packages Modelling Communication, recording and 	<p>Students will be able to develop and use successfully a variety of practical skills which will include:</p> <ul style="list-style-type: none"> Drawing Measuring Marking Selecting and using Specialist tools and machines 	<p>Students will develop skills in:</p> <ul style="list-style-type: none"> Researching and investigating (Section A) Writing a design brief (Section B) Generating ideas (Section C)



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			<ul style="list-style-type: none"> • Selecting and using a variety of construction techniques. 	<ul style="list-style-type: none"> • justifying design ideas 	<ul style="list-style-type: none"> • Selecting and using a variety of construction techniques. 	
ASSESSMENTS	<p>Key Assessment Piece: Classwork piece – Exam Question on New and emerging technologies</p> <p>Key Assessment Piece: End Point assessment. At the end of this unit of work a topic ‘test’ will assess their key understanding through the scheme and measure their progress in this subject.</p>	<p>D&T Progress Checkpoint Students will have a progress checkpoint assessment to assess their knowledge and understanding of the topics covered in this unit.</p> <p>Key Assessment Piece: Classwork piece – Students will be required to carry out some research on renewable energy Pros and cons</p> <p>Key Assessment Piece: Home learning: Case study exploration and exam question</p>	<p>Key Assessment Piece: Classwork piece - Product analysis and modification design</p> <p>Key Assessment Piece: End Point assessment. At the end of this unit of work a topic ‘test’ will assess their key understanding through the scheme and measure their progress in this subject</p>	<p>D&T Progress Checkpoint Students will have a progress checkpoint assessment to assess their knowledge and understanding of the topics covered in this unit.</p> <p>Key Assessment Piece: Homework piece – Student presentation on designers</p> <p>Key Assessment Piece: Classwork piece on Ergonomics Considerations</p>	<p>Key Assessment Piece: Classwork piece – Production of a manufacturing plan.</p> <p>Key Assessment Piece: End Point assessment. At the end of this unit of work a topic ‘test’ will assess their key understanding through the scheme and measure their progress in this subject</p> <p>Key Assessment Piece: Homework Testing evaluations for their products.</p>	<p>D&T Progress Checkpoint Students will have a progress checkpoint assessment to assess their knowledge and understanding of the topics covered in this unit.</p> <p>Key Assessment Piece: Classwork piece NEA AO1 Section A: Identifying and investigation design possibilities.</p>