

Year 11 – Design and Technology

Curriculum intent	GCSE Design and Technology enables learners to design and make products with creativity and originality, using a range of materials and techniques. Year 11 sees a primary focus on the NEA project in order to maximise returns for learners in this area. Interspersed with this are theory sessions intended to develop knowledge within the 'Core Technical Principles'. These are mostly revision sessions, which are designed into the first third of lessons used for NEA. After the formal submission of NEA in Easter there is a shift to exam preparation and technique.					
Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	<p><u>Major Project – Working towards a sustainable future (50% of qualification)</u></p> <p>HT1</p> <ul style="list-style-type: none"> • Research in answer to brief • Specification prior to designing • Initial ideas – sketching • Ideas cardboard modelling • Idea selection and justification • Structures • Wooden Materials • Levers Theory 	<p><u>Major Project – Working towards a sustainable future (50% of qualification)</u></p> <ul style="list-style-type: none"> • Development modelling • 3D CAD development via Sketchup • Exploded drawing and parts list • Manufacturing plan – Gantt Chart • Types of mechanism • Product life Cycle • Energy generation • MCQ 4-6 	<p><u>Major Project – Working towards a sustainable future (50% of qualification)</u></p> <ul style="list-style-type: none"> • Initial marking and rough cutting of components • Shaping and finishing of major elements • Manufacture and testing of functional elements • Advantages / Dis' of CAD/CAM • Production Aids • Dyson Case Study • Plastic Materials • Mock Feedback and RAMP • MCQ 7-9 	<p><u>Major Project – Working towards a sustainable future (50% of qualification)</u></p> <ul style="list-style-type: none"> • Surface finishes and graphics • Final assembly, testing and evaluation • Alec Issigonis and the Mini Q's • Quality control and assurance • MCQ 7-9 • Why modelling is important • Metal Materials, Stock forms and standard components' 	<p><u>Final Exam Preparation</u></p> <ul style="list-style-type: none"> • Consolidation of NEA folder and final outcome • Sustainability and the 6R's • Industrial processes – Injection moulding • Material sources – Ore's, crude oil, forestry • The work of Norman Foster • How to evaluate – your opinion justified • Scales of Production • Patents, trademarks & legislation • MCQ 10-12 	



	<ul style="list-style-type: none"> •Ergonomics and Anthropometrics •Basic electronics •MCQ 1-3 					
<p>Skills</p>	<ul style="list-style-type: none"> • Graphics, covering sketching in 2D and 3D • Technical drawing; mathematical terms and measurement • Isometric drawing of simple components • Modelling in foam to produce scale prototypes • Graphics based covering sketching in 2D and 3D • Quality outcomes produced using workshop skill 	<ul style="list-style-type: none"> • Graphics, covering sketching in 2D and 3D • Technical drawing; mathematical terms and measurement • Isometric drawing of simple components • Modelling in foam to produce scale prototypes • Graphics based covering sketching in 2D and 3D • Quality outcomes produced using workshop skill 	<p>Understanding scale and applying maths within Design and Technology.</p> <p>The impact of a crowded planet.</p> <p>Sketching to capture ideas.</p> <p>Using card to produce high-quality models.</p> <p>Applying sections and cutaways to aid idea communication.</p> <p>Graphics based covering sketching in 2D and 3D.</p>	<p>Understanding scale and applying maths within Design and Technology.</p> <p>The impact of a crowded planet.</p> <p>Sketching to capture ideas.</p> <p>Using card to produce high-quality models.</p> <p>Applying sections and cutaways to aid idea communication.</p> <p>Graphics based covering sketching in 2D and 3D.</p>	<ul style="list-style-type: none"> • The 6 R's • Precious plastics • Sustainable Timber • Recycling Metals • The morals of sustainability 	

<p>Assessments</p>	<p>Controlled assessment research section and specification complete and submitted.</p> <p>Ideas and development complete, with general feedback given as per QCA guidelines.</p> <p>Average theory score recorded on Excel tracker.</p> <p>Seneca feedback on theory.</p>	<p>Controlled assessment research section and specification complete and submitted.</p> <p>Ideas and development complete, with general feedback given as per QCA guidelines.</p> <p>Average theory score recorded on Excel tracker.</p> <p>Seneca feedback on theory.</p>	<ul style="list-style-type: none"> • Mock written exam • Average theory score recorded on Excel tracker • Final general feedback on NEA • Seneca feedback on theory. 	<ul style="list-style-type: none"> • Mock written exam • Average theory score recorded on Excel tracker • Final general feedback on NEA • Seneca feedback on theory. 	<ul style="list-style-type: none"> • External exam summer 2022 • Revision mock papers as issued 	
<p>Enrichment</p>	<p>Sketching Supporting the NEA:</p> <p>https://youtu.be/laU_oXtUU-E</p> <p>https://www.aga.org.uk/inside-exams-podcasts</p>	<p>Sketching supporting the NEA:</p> <p>https://youtu.be/laU_oXtUU-E</p> <p>https://www.aga.org.uk/inside-exams-podcasts</p>	<p>Modelling in cardboard supporting the NEA:</p> <p>https://youtu.be/z0nhQonMbH8</p>	<p>Modelling in cardboard supporting the NEA:</p> <p>https://youtu.be/z0nhQonMbH8</p>	<p>Disruptive Designs</p> <p>Knowledge and understanding of invention, inventors and iconic design...</p> <p>Design Process Curriculum (jamesdysonfoundation.com)</p>	



Rayner Stephens
HIGH SCHOOL