

Design Technology Department: Curriculum Overview 2024-25

Curriculum Intent:

We believe that students deserve a Design Technology and Art curriculum which prepares them for the ever-changing world they live in. Our curriculum aims to promote and develop resilient, independent, problem solvers utilising a range of transferable skills, allowing them to become successful members of our wider community. Our Design Technology and Art faculty comprises the following subjects: Design Technology, Hospitality & Catering, Food Technology, Graphic Design, Textiles, Art and Hair and Beauty. In the Design and Technology faculty students combine practical and technological skills with creative thinking to design and make unique outcomes. They learn to use current technologies and consider the impact of future technological developments as well as thinking creatively and solve a range of problems. We are a faculty which draws, develops and implements a range of different disciplines including mathematics, science, engineering, computing, geography, art and embed high quality literacy skills using analysis and evaluation techniques. Through the curriculum, students are actively contributing to the creativity, culture, and well-being of themselves. Students will be working in stimulating contexts that provide a range of opportunities and draw on the local community and wider world. They respond with ideas and products, challenging the ordinary and consider aesthetic, technical, cultural, social, emotional, economic, and environmental issues. Alongside this, students evaluate present and past design, its uses and effects. The Design Technology and Art faculty makes a unique and valuable contribution to the education and preparation for students' future lives for work and leisure. We aim to ensure that our students achieve the best possible experiences to become lifelong learners sharing the same joy of the subject that their teachers have.

Year 7	Term 1	
	Half Term 1 6 lessons	Half Term 2 6 lessons
Topic	Pewter Jewellery project	Pewter Jewellery project
Key skills developed	<ul style="list-style-type: none"> Analysing Sketching and mathematical drawing Idea generation Practical planning 	<ul style="list-style-type: none"> Metal smithing Finishing Evaluating
Content	<ul style="list-style-type: none"> Cultural and social impact of design Brief and specification adapting Biomimicry Casting process Isomeric and exploded drawing 	<ul style="list-style-type: none"> Metal origins and properties Practical manipulation of materials Health and safety Material finishes Nets and card construction Testing and Evaluation
Prior Knowledge Required	<ul style="list-style-type: none"> Design process 	
Feedback Points	<ul style="list-style-type: none"> Written feedback - Product analysis Written feedback - Design ideas Ongoing verbal feedback log 	<ul style="list-style-type: none"> Written feedback - Practical outcome Written feedback - Metals sheet Ongoing verbal feedback log
Key Questions	<ul style="list-style-type: none"> What is casting? Can you describe the term biomimicry? What is a brief and Specification? 	<ul style="list-style-type: none"> What is the difference between a ferrous and non ferrous metal? Can you name some ferrous and nonferrous metals? How do you cast in pewter safely?
Direct Vocab Instruction	<ul style="list-style-type: none"> Design Biomimicry Isometric Brief Specification 	<ul style="list-style-type: none"> Ferrous Non Ferrous Alloy Material Finish Evaluate
Standardised Homework	<ul style="list-style-type: none"> Exploded diagrams Casting knowledge reinforcement homework Moodboard Product analysis Isometric letters Metals knowledge homework 	<ul style="list-style-type: none"> Workshop safety Names the tools Packaging research Present packaging ideas Evaluation feedback of project

Year 8	Term 1	
	Half Term 1 [6 lessons]	Half Term 2 [6 lessons]
Topic	Moodlight Project	Moodlight project
Skill	<ul style="list-style-type: none"> • Analysing • Sketching • Idea generation • Practical planning 	<ul style="list-style-type: none"> • Timber joinery • Graphical mark making • Evaluating
Content	<ul style="list-style-type: none"> • Exploring cultures • Understanding electronic systems – input-process- output • Brief and specification writing including identifying a user • Recognising and explaining the functions of electronic components • How to Solder safely • Understanding stencils • Isometric sketching 	<ul style="list-style-type: none"> • Introduction to CAD CAM and its uses • Timber origins and properties • Practical manipulation of materials • Health and safety • Testing and evaluation
Prior Knowledge Required	<ul style="list-style-type: none"> • Design process • How to use research to generate ideas • What a specification is 	
Feedback Points	<ul style="list-style-type: none"> • Written feedback - Product analysis • Written feedback - Design ideas • Ongoing verbal feedback log 	<ul style="list-style-type: none"> • Written feedback – CAD/CAM • Written feedback – Final outcome • Ongoing verbal feedback log
Key Questions	<ul style="list-style-type: none"> • Can you explain the difference between an input, process and output? • What do you need to be aware of when soldering? • Can you identify different electronic components? 	<ul style="list-style-type: none"> • What is the difference between a softwood and hardwood? • Can you name a selection of soft and hardwoods? • Can you explain how you use a workshop safely
Direct Vocab Instruction		
Standardised Homework	<ul style="list-style-type: none"> • Every lesson has a 20min homework – see SOW for full break down of all homeworks 	<ul style="list-style-type: none"> • Every lesson has a 20min homework – see SOW for full break down of all homeworks

Year 9	Term 1 [6 lessons]	Term 2 [6 lessons]	Term 3 [6 lessons]
Topic	Inclusive design	Storage challenge	6R's and responsible design
Skill	<ul style="list-style-type: none"> • Designing for others • Drawing skills • Team work • Presentation skills 	<ul style="list-style-type: none"> • Problem solving • Idea generation • Practical application of material knowledge 	<ul style="list-style-type: none"> •
Content	<ul style="list-style-type: none"> • polymer origins and properties • polymer manufacturing processes • Inclusive design (elderly, disabled, religious groups) • Cultural and ethical factors • Idea generation • Modelling • Marketing 	<ul style="list-style-type: none"> • Modern Art movements – Memphis, Bauhaus • Isometric crating • Developing ideas into workable concepts • Workshop safety • Timber finishes • Plan of manufacture, quality control 	<ul style="list-style-type: none"> • positive and negative impacts on the environment • finite and non finite • 6 R's • Life cycle assessment • Social and environmental impact • Polymers
Prior Knowledge Required	<ul style="list-style-type: none"> • Isometric drawing • Modelling skills Design process 	<ul style="list-style-type: none"> • Timber properties • Workshop safety 	<ul style="list-style-type: none"> • Polymer origins and processes • Yinka Ilora (designer) • Design process and practical knowledge
Feedback Points	<ul style="list-style-type: none"> • Verbal ongoing feedback • Written feedback on design work • Written feedback on presentation 	<ul style="list-style-type: none"> • Verbal ongoing feedback during practical work • Written feedback final outcome • Practice theory assessment - forms • Formal assessment - 25 Multiple choice, 50 open looking at topics from yr7-9 	<ul style="list-style-type: none"> • Short class assessment - lesson 4 or 5 • Verbal ongoing feedback
Key Questions	<ul style="list-style-type: none"> • What are the two classes of polymer? • Can you explain one manufacturing processes for polymers? • Why do we model designs? • Why is it important to consider cultural and ethical factors in design? 	<ul style="list-style-type: none"> • Which lines do not get included in an isometric drawing? • What three views are found in an orthographic drawing? • 	<ul style="list-style-type: none"> • Can you name the 6 R's? • Which resources are classed as finite? • What are the impacts of global warming on humans and wildlife
Direct Vocab Instruction	<ul style="list-style-type: none"> • Thermoforming • Thermosetting • Inclusive • Market • Ethics 	<ul style="list-style-type: none"> • Manufacture • isometric 	<ul style="list-style-type: none"> • Finite • Sustainability • Recycle, reduce, repair, replace, rethink, reuse
Standardised Homework	<ul style="list-style-type: none"> • Every lesson has a 20-30min homework – see SOW for full break down of all homeworks 	<ul style="list-style-type: none"> • Every lesson has a 20-30min homework – see SOW for full break down of all homeworks 	<ul style="list-style-type: none"> • Every lesson has a 20-30min homework – see SOW for full break down of all homeworks

Year 10	Term 1		Term 2		Term 3	
	Half Term 1 [14 lessons]	Half Term 2 [14 lessons]	Half Term 3 [10 lessons]	Half Term 4 [12 lessons]	Half Term 5 [12 lessons]	Half Term 6 [14 lessons]
Topic	Skills mastery	Skills mastery	Practice NEA – child toy	Practice NEA – child toy	Practice NEA – child toy	GCSE NEA
Skills developed	<ul style="list-style-type: none"> Practical planning Polymer knowledge application Timber joinery 	<ul style="list-style-type: none"> Metal Casting Practical skills 	<ul style="list-style-type: none"> Analytical skills Researching skills Generating ideas 	<ul style="list-style-type: none"> Idea generating Problem solving 3D modelling/shaping skills Analytical skills 	<ul style="list-style-type: none"> Analytical skills Mathematical drawing Planning 	<ul style="list-style-type: none"> Analytical skills Researching skills Generating ideas
Content	<ul style="list-style-type: none"> Practical manipulation of materials polymer origins, classification and working properties Timber origins, classification and working properties Understanding the application of finishes Finite and non finite sources Energy generation 	<ul style="list-style-type: none"> Metal origins, classification and properties The process of sandcasting Manufacturing metals Practical manipulation of materials Methods of production -one off batch, mass Smart materials Modern & composite materials Automation, CAD, CAM JIT & Lean manufacture 	Section A & B <ul style="list-style-type: none"> Exploring a context Identifying a user Focused project research Anthropometrics & Ergonomics Analysing the work of others Writing a brief Writing a specification Work of others – designers and companies Beginning to generate ideas 	Section C <ul style="list-style-type: none"> Mechanisms Movement Generating ideas Developing ideas into workable concepts Modelling and testing materials 	Section C <ul style="list-style-type: none"> Further focused research Developing final concept Production of manufacture specification Planning of manufacture 	<ul style="list-style-type: none"> Exploring a context Identifying a user Focused project research Analysing the work of others Writing a brief Writing a specification Beginning to generate ideas
Prior Knowledge Required	<ul style="list-style-type: none"> Difference between softwood and hard wood 	<ul style="list-style-type: none"> Difference between ferrous and non ferrous metals What is an alloy What is CAD & CAM 	<ul style="list-style-type: none"> Design process Producing effective research What a brief and specification is Isometric drawing 	<ul style="list-style-type: none"> Design process 6 thinking hats Material properties 	<ul style="list-style-type: none"> How to do independent research Orthographic drawings 	<ul style="list-style-type: none"> Design process Producing effective research What a brief and specification is Isometric drawing
Feedback Points	<ul style="list-style-type: none"> Verbal feedback from staff Self and teacher feedback on 2 focus materials Practice analysis exam question feedback 	<ul style="list-style-type: none"> Formal assessment paper on theory knowledge Verbal feedback from staff Self and teacher feedback on 2 focus materials 	<ul style="list-style-type: none"> Verbal feedback from staff Peer, self and staff feedback on section A & B 	<ul style="list-style-type: none"> Verbal feedback from staff Peer, self and staff feedback on section C 	<ul style="list-style-type: none"> Verbal feedback from staff Peer, self and staff feedback on section C 	<ul style="list-style-type: none"> Exam practice questions 1.5hr full paper
Key Questions	<ul style="list-style-type: none"> Can you toughly explain the origins, classification and properties of timbers Can you toughly explain the origins, classification and properties of polymers Why are finishes applied and can you name a selection of finishes? 	<ul style="list-style-type: none"> Can you describe the process of sand casting? Can you toughly explain the origins, classification and properties of metals? 				
Direct Vocab Instruction	<ul style="list-style-type: none"> Lumber Classification Automation JIT, Lean manufacture 	<ul style="list-style-type: none"> Batch Mass production Smart material Composite 	<ul style="list-style-type: none"> Ergonomic Anthropometric 			
Standardised Homework	Every lesson has a 20-30min homework – see SOW for full break down of all homeworks	Every lesson has a 20-30min homework – see SOW for full break down of all homeworks	Every lesson has a 20-30min homework – see SOW for full break down of all homeworks	Every lesson has a 20-30min homework – see SOW for full break down of all homeworks	Every lesson has a 20-30min homework – see SOW for full break down of all homeworks	Students give personal targets to work on based on their NEA projects.

Year 11	Term 1		Term 2		Term 3	
	Half Term 1 [? Lessons]	Half Term 2 [? Lessons]	Half Term 3 [? Lessons]	Half Term 4 [? Lessons]	Half Term 5 [? Lessons]	Half Term 6 [? Lessons]
Topic	NEA	NEA	NEA	Revision: Section C	Revision: Specialist area - timber	Revision: Exam prep
Skill	<ul style="list-style-type: none"> Idea generating Problem solving 3D modelling/shaping skills Analytical skills 	<ul style="list-style-type: none"> Analytical skills Mathematical drawing Planning 	<ul style="list-style-type: none"> Varying material manipulation processes Evaluating 	<ul style="list-style-type: none"> Applying knowledge Understanding what is required 	<ul style="list-style-type: none"> Applying knowledge Understanding what is required 	<ul style="list-style-type: none"> Applying knowledge Understanding what is required
Content	<ul style="list-style-type: none"> Generating ideas Developing ideas into workable concepts Modelling and testing materials 	<ul style="list-style-type: none"> Further focused research Developing final concept Production of manufacture specification Planning of manufacture 	<ul style="list-style-type: none"> Practical manipulation of materials to produce outcome Testing Evaluating 	<ul style="list-style-type: none"> How to apply drawing skills to questions How to answer “analyse and evaluate” questions 6-8 mark questions 	<ul style="list-style-type: none"> Reviewing timber origins, properties and processes How to apply knowledge to exam style questions 	<ul style="list-style-type: none"> Exam focused tasks based on class performance analysis (content each class has struggled with)
Prior Knowledge Required	Prior knowledge of how to produce the NEA would have been covered in year 10 in the practise NEA tasks. This knowledge will be needed to complete these tasks to the required standard			<ul style="list-style-type: none"> Theory knowledge required to apply to exam style questions 	<ul style="list-style-type: none"> Foundation level of timber knowledge from previous theory lessons to build upon at this time 	
Feedback Points	Generic class feedback as instructed by JCQ regulations	<ul style="list-style-type: none"> 2hr Mock paper 	Generic class feedback as instructed by JCQ regulations	<ul style="list-style-type: none"> NEA raw scores to be given out to all students. 	<ul style="list-style-type: none"> Formal external exam 	
Direct Vocab Instruction				<ul style="list-style-type: none"> Exam command words – evaluate, analyse, explain, compare Perspective, orthographic, isometric 	<ul style="list-style-type: none"> Properties Characteristics Origins 	
Standardised Homework	Students give personal targets to work on based on their NEA projects.	Students give personal targets to work on based on their NEA projects.	Students give personal targets to work on based on their NEA projects.	<ul style="list-style-type: none"> Practice exam questions from section C 	<ul style="list-style-type: none"> Practice exam questions from section B 	

Year 12	Term 1		Term 2		Term 3	
	Half Term 1 [24 lessons]	Half Term 2 [20 lessons]	Half Term 3 [20 lessons]	Half Term 4 [20 lessons]	Half Term 5 [20 lessons]	Half Term 6 [20 lessons]
Topic	Timbers & Polymers	Metals, Composites & papers	Lamp project and Technology & cultural changes	Lamp project and Responsible & environmental design	NEA & manufacture, project management	NEA & H&S legislation
Skill	<ul style="list-style-type: none"> Laminating and manipulating Measuring, marking out, common joints Costing exercises – numeracy Workshop shaping skills 	<ul style="list-style-type: none"> Testing properties Forming, joining and machining skills Analysis Material manipulation Practical awareness of adhesives 	<ul style="list-style-type: none"> Analysing skills Researching skills Design development Problem solving 	<ul style="list-style-type: none"> Analysing skills Researching skills Modelling Testing of materials Practical manipulation of materials Evaluation skills 	<ul style="list-style-type: none"> Analysing skills Primary and secondary Researching skills 	<ul style="list-style-type: none"> Idea generating Problem solving 3D modelling/shaping skills Analytical skills
Content	<ul style="list-style-type: none"> Types & definitions Properties, environmental Protection & degradation Permanent and non-permanent joining methods Properties and classifications properties and uses Manufacturing processes Jigs and fixtures 	<ul style="list-style-type: none"> Material Properties Metals and alloys Composite types, properties & uses Smart & modern materials Adhesives Industrial processes & alternatives Papers types, properties & uses 	<ul style="list-style-type: none"> Design influences. Designers their work Design movements Social, moral and ethical Socio economic issues Inclusive design 	<ul style="list-style-type: none"> Enterprise and marketing in the development of products Ease of manufacture International standards and directives environmental impact Responsible design 	<ul style="list-style-type: none"> Modern industrial practice Property Technology development Iterative design methodology Generation and conservation of energy Exploring a context Identifying a user Focused project research Analysing the work of others 	<ul style="list-style-type: none"> Health & safety Accuracy in manufacture, QA/QC Manufacture, repair & disposal Generating ideas Developing ideas into workable concepts Modelling and testing materials
Prior Knowledge Required	<ul style="list-style-type: none"> Foundation knowledge of timbers Foundation knowledge of polymers 	<ul style="list-style-type: none"> Foundation knowledge of metals Foundation knowledge of composites and papers 	<ul style="list-style-type: none"> Some understanding of design movements Foundation knowledge of ethical design 	<ul style="list-style-type: none"> Foundation knowledge of environmental considerations 	<ul style="list-style-type: none"> Knowledge of how projects are structured How to conduct research correctly Foundation knowledge of energy generation 	<ul style="list-style-type: none"> Foundation knowledge Manufacture, repair & disposal What are jigs How to write a brief/specification Generating ideas using research
Feedback Points	<ul style="list-style-type: none"> Feedback on exam question answers 	<ul style="list-style-type: none"> Feedback on exam question answers 	<ul style="list-style-type: none"> Mini mocks 	<ul style="list-style-type: none"> Feedback on exam question answers 	<ul style="list-style-type: none"> Generic class feedback as instructed by JCQ regulations 	<ul style="list-style-type: none"> End of year exam Generic class feedback as instructed by JCQ regulations
Key Questions	<ul style="list-style-type: none"> Select & describe timber types accordingly Understand how manufactured timber improve performance Awareness of extending performance Select & describe materials appropriate for different products Understand how different products are mass produced. Consider alternatives 	<ul style="list-style-type: none"> Select & describe materials accordingly Awareness of mass production methods Understand existing and future printing and packaging needs & eco awareness Understand definition of composites and practical examples around 	<ul style="list-style-type: none"> Awareness of famous designers work awareness & knowledge. Of historical design development 	<ul style="list-style-type: none"> Understand environment issues. Be able to discuss environmental impact of design Impact of 6R's & sustainability issues. Circular economy & energy 	<ul style="list-style-type: none"> How organisations manage design stages discuss the benefits and constraints on products +ive & -ive of design copyright 	<ul style="list-style-type: none"> What are rights and responsibilities, improved working conditions Understand efficiencies in manufacture and modern design Consumer rights and safety understood
Standardised Homework	<ul style="list-style-type: none"> Exam style questions 	<ul style="list-style-type: none"> Exam style questions 	<ul style="list-style-type: none"> Study task – famous designers Exam style questions 	<ul style="list-style-type: none"> Exam style questions 	<ul style="list-style-type: none"> Exam style questions One to one targets for NEA 	<ul style="list-style-type: none"> Exam style questions One to one targets for NEA

Year 13	Term 1		Term 2		Term 3	
	Half Term 1 [? lessons]	Half Term 2 [? lessons]	Half Term 3 [? lessons]	Half Term 4 [? lessons]	Half Term 5 [? lessons]	Half Term 6 [? lessons]
Topic	NEA & Modern industrial practice	NEA	NEA	NEA & Exam preparation	Exam preparation	
Skill	<ul style="list-style-type: none"> Varying material manipulation processes Evaluating CAD skills 	<ul style="list-style-type: none"> Varying material manipulation processes planning Evaluating 	<ul style="list-style-type: none"> Practical skills planning Evaluating 	<ul style="list-style-type: none"> Evaluating How to apply knowledge to exam style questions Maths skills 	<ul style="list-style-type: none"> Applying knowledge Understanding what is required 	
Content	<ul style="list-style-type: none"> Efficient use of materials Use of computer systems Digital design & manufacture Design for maintenance, repair. Sub assembly CAD/CAM plus IT system 'just in time' & data gathering Virtual modelling & rapid prototyping Developing ideas Modelling and testing 	<ul style="list-style-type: none"> Modelling and testing ideas Final design – manufacturing specification 	<ul style="list-style-type: none"> Paper 1 structure Exam command words Practical application of materials to produce final prototype Evaluation of final prototype 	<ul style="list-style-type: none"> Paper 2 structure Exam command words Exam practice Additional maths support Evaluation of final prototype 	<ul style="list-style-type: none"> Exam focused tasks based on class performance analysis (content class has struggled with in their mocks) 	
Prior Knowledge Required	<ul style="list-style-type: none"> Foundation knowledge of computer systems -CAD/CAM/JIT Material properties 	<ul style="list-style-type: none"> Material properties – how to select materials Foundation knowledge of practical skills 	<ul style="list-style-type: none"> Material properties – how to select materials Foundation knowledge of practical skills How to evaluate a product effectively 	<ul style="list-style-type: none"> All theory covered on the course Maths skills 	<ul style="list-style-type: none"> All theory covered on the course 	
Feedback Points	Generic class feedback as instructed by JCQ regulations	<ul style="list-style-type: none"> Assessment 1 – exam paper Generic class feedback as instructed by JCQ regulations 	Generic class feedback as instructed by JCQ regulations	Full exam paper	Public examinations	
Key Questions	<ul style="list-style-type: none"> how companies manage production volumes how companies use IT at different levels for efficiency Awareness of products & processes in house & manufacturing 	<ul style="list-style-type: none"> Appreciating needs, app. of technical & visual design language 	<ul style="list-style-type: none"> Have you planned to get personal 3rd party feedback for your product? Do you need to plan laser cutting time. 	<ul style="list-style-type: none"> Are you confident on the structure of exam questions? 		
Direct Vocab Instruction	JIT, Lean Manufacture, CAD, CAM, Virtual, Rapid, Tessellation			<ul style="list-style-type: none"> Exam terms: Evaluate, compare, analyse, explain 	Exam terms: Evaluate, compare, analyse, explain	
Standardised Homework	<ul style="list-style-type: none"> Exam style questions One to one targets for NEA 	<ul style="list-style-type: none"> Exam style questions One to one targets for NEA 	Exam style questions	Exam style questions	Exam style questions	