

Year 7

Half Term 1&2 - Sept- Dec		Half Term 3&4 – Jan-April		Half Term 5&6 - April- July	
Bauhaus & perspective drawing		Electronics		Graphics: Adobe illustrator	
Knowledge	Skills	Knowledge	Skills	Knowledge	Skills
<ul style="list-style-type: none"> •Design process •Isometric drawing •Vanishing Points •Horizon line •1 point perspective drawing •2 point perspective drawing •Rapid prototyping 	<ul style="list-style-type: none"> •Generating ideas •Experimental drawing •Concept drawings •Pencil rendering •Technical drawings •Isometric •1 and 2 point perspective 	<ul style="list-style-type: none"> •Electronic components •Soldering •Prototyping •Friction fit •Plywood •Leather •Finger joints •Pattern design •Sustainable design •Safety in the workshop 	<ul style="list-style-type: none"> •Soldering a complete circuit •Using a scalpel to model with cardboard •Using a screwdriver •Constructing and gluing box together •Painting •Test and evaluate 	<ul style="list-style-type: none"> •Design process •Brand identity •Colour •Graphics Software •Logo evolution •Laser cutting 	<ul style="list-style-type: none"> •Generating ideas •Experimental drawing •Concept drawings •Pencil rendering •Technical drawings •Isometric •1 and 2 point perspective



Year 8

Half Term 1&2 - Sept- Dec		Half Term 3&4 – Jan-April		Half Term 5&6 - April- July	
Lego Figure Man		Textiles – Felt Keyring		Food & Nutrition	
Knowledge	Skills	Knowledge	Skills	Knowledge	Skills
<ul style="list-style-type: none"> Design process Understanding user and client needs Isometric Cutting list One-off manufacturing Batch production Mass production Friction Fit 	<ul style="list-style-type: none"> Machinery application in the workshop (Hegner Saw, Pillar Drill and Belt Sander) Glue together with PVA Rendering skills using coloured pencils Evaluate against design brief Generate ideas through isometric drawing (build on Y7 skill) Prime and paint using acrylic paints 	<ul style="list-style-type: none"> Design process Pattern Design Sewing Techniques Specialist equipment in textiles Additive manufacturing Felt properties and manufacturing Natural & Synthetic Fibres 	<ul style="list-style-type: none"> Deciding on a design challenge Generating ideas Sketching patterns on fabric and paper Sewing techniques (running stitch, blanket stitch, overcast stitch, back stitch and cross stitch) 3D product construction 	<ul style="list-style-type: none"> Design process Health and Safety in the Kitchen Basics of Nutritional Values in Diet Working with Pastry Oven Settings 	<ul style="list-style-type: none"> Food preparation Chopping Baking Oven settings Working with Filo Pastry Plating



Year 9

Half Term 1&2 - Sept- Dec		Half Term 3&4 – Jan-April		Half Term 5&6 - April- July	
CAD - Shapr3D		UX/UI Design		Food & Nutrition	
Knowledge	Skills	Knowledge	Skills	Knowledge	Skills
<ul style="list-style-type: none"> Design process CAD software CAM 3D printing 	<ul style="list-style-type: none"> Technological literacy 3D modelling software(CAD) Dxf file formatting for 3D printing Designing for a client, following a design brief Evaluating against a specification 	<ul style="list-style-type: none"> Design process Graphic Design App Design User interface User mapping 	<ul style="list-style-type: none"> Technological literacy Adobe InDesign Adobe illustrator User mapping – problem solving Interface design Evaluate against design brief 	<ul style="list-style-type: none"> Design process Health and Safety in the kitchen Cooking/Baking Nutrition 	<ul style="list-style-type: none"> Food Preparation Constructing your own specification Cooking/Baking Health and safety in the kitchen Plating Garnishing Working under time constraint



Year 10

Half Term 1,2&3 - Sept- Feb		Half Term 4, 5 & 6 - Feb-July	
Component 1: Understanding our world, Core Designing and Making Technical Principles – In-depth Polymers		Component 2: Iterative Design and Communication of Ideas - NEA Preparation	
Knowledge	Skills	Knowledge	Skills
<ul style="list-style-type: none"> ➤ Emerging Technologies ➤ Sustainability and CO2 ➤ CAD, CAM and CNC ➤ Smart Materials ➤ Marketing ➤ Linear and Circular economy ➤ Electronic systems ➤ Mechanical components 	<ul style="list-style-type: none"> ➤ Application of sustainable design ➤ Product Analysis ➤ Green solutions ➤ Exam style questions ➤ Soldering ➤ Motions and Calculations ➤ Life Cycle Assessment (LCA) 	<ul style="list-style-type: none"> ➤ Design process ➤ Design brief ➤ Design specification ➤ Ideation ➤ Product Development ➤ Evaluation ➤ Delivery ➤ Exploring iterative design and its importance in refining designs 	<ul style="list-style-type: none"> ➤ Unpicking exemplar situational design brief ➤ Personas and marketing ➤ User mapping – problem solving ➤ Constructing your own specification ➤ Primary Data ➤ Evaluating against a specification ➤ Workshop machinery ➤ Coursework Layout ➤ Developing sketching and annotation skills for effective communication of ideas



Year 11

Half Term 1,2&3 - Sept- Feb		Half Term 4, 5 & 6 - Feb-July	
Component 2: Iterative Design and Communication of Ideas - NEA		Component 1: Understanding our world, Core Designing and Making Technical Principles – In-depth Polymers	
Knowledge	Skills	Knowledge	Skills
<ul style="list-style-type: none"> ➤ Design process ➤ Design brief ➤ Design specification ➤ Ideation ➤ Product Development ➤ Evaluation ➤ Delivery ➤ Exploring iterative design and its importance in refining designs 	<ul style="list-style-type: none"> ➤ Unpicking situational design brief ➤ Personas and marketing ➤ User mapping – problem solving ➤ Constructing your own specification ➤ Primary Data ➤ Evaluating against a specification ➤ Workshop machinery ➤ Coursework Layout ➤ Developing sketching and annotation skills for effective communication of ideas 	<ul style="list-style-type: none"> ➤ Materials and their properties ➤ Performance characteristics of materials ➤ Processes and techniques ➤ In-depth study of specialist technical principles related to chosen material areas (e.g., textiles, wood, metal, plastics, electronics) ➤ Considering user needs and preferences in design 	<ul style="list-style-type: none"> ➤ Practical exercises to demonstrate understanding of core technical principles ➤ User-centered design process: empathy, defining, ideating, prototyping, testing



Year 12

Half Term 1,2&3 - Sept- Feb		Half Term 4, 5 & 6 - Feb-July	
Component 1: Design and Technology in the 21st Century		Component 2: NEA Preparation	
Knowledge	Skills	Knowledge	Skills
<ul style="list-style-type: none"> Design Movements & Historical Context - Key design movements (e.g. Bauhaus, Art Deco, Postmodernism) Influence of culture and society on design Materials Science - Properties, classification and applications of: <ul style="list-style-type: none"> Woods (hardwoods, softwoods, manufactured boards) Metals (ferrous, non-ferrous, alloys) Polymers (thermoplastics, thermosets, elastomers) Composites and smart materials Manufacturing & Processes -One-off, batch, mass and continuous production Traditional and modern manufacturing techniques Introduction to CAD/CAM Sustainability and Environmental Impact- Life Cycle Analysis (LCA) Sustainable material choices and product longevity Recycling and design for disassembly 	<p>Sketching & Communication</p> <ul style="list-style-type: none"> Rapid idea generation and annotation Orthographic and isometric drawing <p>CAD Skills</p> <ul style="list-style-type: none"> Basic 2D and 3D CAD modelling Intro to digital rendering and layout <p>Analytical & Critical Thinking</p> <ul style="list-style-type: none"> Product analysis and evaluation Using testing data to improve ideas <p>Time & Project Management</p> <ul style="list-style-type: none"> Planning a design task Logging work and iterative development 	<ul style="list-style-type: none"> Design Theory & Strategies - Design process stages User-centred design Ergonomics and anthropometrics Form vs function Systems and Mechanisms- Levers, linkages, gears, cams Forces, stresses and structural integrity <p>Introduction to NEA (Non-Exam Assessment)</p> <ul style="list-style-type: none"> Writing a design brief and specification Research and analysis of user needs Early concept generation and modelling 	<p>Primary Research strategies</p> <ul style="list-style-type: none"> User wants and needs research Understanding the market Surveys/questionnaires <p>Practical Workshop Skills</p> <ul style="list-style-type: none"> Safe use of hand and machine tools Prototyping with woods, plastics, card and foam Vacuum forming Line bending Laser cutting Vinyl cutting 3D printing



Year 13

Half Term 1,2&3 - Sept- Feb		Half Term 4, 5 & 6 - Feb-July	
Component 1: Design and Technology in the 21st Century		Component 2: NEA	
Knowledge	Skills	Knowledge	Skills
Advanced Materials and Manufacturing <ul style="list-style-type: none"> Material finishes, tolerances, quality control Advanced processes like CNC, injection moulding, vacuum forming Understanding cost, time, waste, and batch sizes Exam Preparation <ul style="list-style-type: none"> Deep revision of Component 1 topics Structuring extended written answers Interpreting exam design scenarios Non-Exam Assessment (NEA) <ul style="list-style-type: none"> Iterative designing, modelling and development Making a high-quality final prototype Evaluation and user feedback analysis Professional portfolio presentation 	Advanced Making Techniques <ul style="list-style-type: none"> Precision measuring and marking Advanced joinery, shaping, and finishing techniques CAD & Technical Documentation <ul style="list-style-type: none"> Detailed CAD models with tolerances and exploded views Assembly drawings and specification sheets Critical Evaluation <ul style="list-style-type: none"> Comprehensive analysis of final outcomes Using feedback to inform future design iterations Time & Project Management <ul style="list-style-type: none"> Managing a long-term independent project Meeting internal deadlines and assessment milestones 	Sociocultural and Ethical Issues <ul style="list-style-type: none"> Moral, legal and environmental responsibilities of designers Globalisation and consumerism Energy and Electronics <ul style="list-style-type: none"> Energy sources (renewable/non-renewable) Basic electronic systems and components Sustainability in energy use Design Theory and Influential Designers <ul style="list-style-type: none"> Design strategies (e.g. Iterative design, Six Hats, SCAMPER) Influence of iconic designers and companies Exam Preparation <ul style="list-style-type: none"> Deep revision of Component 1 topics Structuring extended written answers Interpreting exam design scenarios 	Portfolio & Communication <ul style="list-style-type: none"> High-quality digital and physical presentation Justifying decisions with evidence and research

