

Extracurricular Enrichment (Years 7, 8 & 9)

- **Open Studios:** Art Club runs at lunchtime once a week, providing space for independent skill refinement.
- **Digital Enrichment:** A dedicated Photography Club runs on Tuesday (Week 1).
- **Live Briefs:** Students are consistently challenged through regular, live seasonal competitions, including the Audenshaw School Christmas Card Competition and the Summer Photography Challenge.

Rigorous Assessment Framework (12-Week Rotation)

Within their 12-week departmental rotation, students are formally assessed at three distinct tracking points to monitor the development of specific practical and analytical skills.

- **Year 7 Assessment Milestones:**
 - Artist Research Page (Analytical skills)
 - Sustained Painted Piece (Material handling)
 - Anni Albers Sustained Piece (Final realisation)
- **Year 8 Assessment Milestones:**
 - Skills Investigation Portrait (Proportional accuracy)
 - Chuck Close Artist Research Page (Contextual understanding)
 - Sustained Portrait (Mixed media application)
- **Year 9 Assessment Milestones:**
 - Skills Investigation (Textured surfaces and ink work)
 - Sustained Transcript (Accuracy and technique mimicry)
 - Final Sustained Landscape (Independent composition and realisation)

Learning Journey: Mid-Century Inspired Lamp

Focus: Timber Fabrication, Basic Electronics, Graphical Communication, and CAD Objective: To design and manufacture a functioning desk lamp, drawing inspiration from Mid-Century modern design whilst developing rigorous workshop, electronic, and presentation skills.

Phase 1: Design Context & Mid-Century Analysis

- **Iconic Design Research:** Investigate the Mid-Century modern design movement, analysing the highly influential work of designers such as Charles and Ray Eames, Alvar Aalto, and Arne Jacobsen.
- **Form and Function:** Deconstruct the key characteristics of Mid-Century design—such as organic curves, functional simplicity, and the use of natural materials—to inspire initial lamp concepts.

Phase 2: Graphical Communication & CAD

- **Isometric Projection & Rendering:** Learn to produce accurate isometric drawings, applying tonal shading techniques to effectively communicate 3D forms, form, and light.
- **Iterative Ideation:** Develop a diverse range of design proposals for the desk lamp based on the research theme, focusing on aesthetic appeal and structural viability.
- **CAD Modelling:** Translate hand-drawn concepts into 3D Computer Aided Design (CAD). This allows students to develop their concepts further, visualising proportions and refining the design virtually before manufacture.

Phase 3: Workshop Safety & Production Planning

- **Health & Safety Fundamentals:** Undertake a comprehensive introduction to workshop health and safety, establishing a strong foundation in hazard awareness and safe working practices.
- **Tool & Equipment Mastery:** Learn the correct and safe operating procedures for a variety of hand tools, bench tools, and machinery required for the project.

Phase 4: Timber Fabrication & Machining

- **Preparation & Marking Out:** Accurately mark out timber components using standard tools (e.g., try squares, marking gauges, and steel rules) to ensure precision from the outset.
- **Woodworking Techniques:** Safely utilise specific tools and equipment to cut, shape, and finish timber components, focusing on achieving a high-quality outcome with rigorous precision and accuracy.

Phase 5: Electronics & Component Integration

- **Basic Electronics:** Understand the fundamentals of circuitry and safe electrical practices to wire and integrate the lighting components (e.g., switches, battery packs/plugs, and bulbs).
- **Functional Testing:** Ensure all electronic elements are securely housed within the timber structure and function correctly, mimicking the safety standards required for consumer lighting products.

Phase 6: Final Assembly & Critical Evaluation

- **Final Assembly:** Bring together the fabricated timber components and the electronic circuitry to produce a fully functioning, polished desk lamp.
- **Critical Evaluation:** Assess the final product against the initial Mid-Century design inspiration. Students reflect on their new skills in 3D CAD, their accuracy during timber fabrication, and the overall success of the final functioning product.



YOUR
SCHOOL
JOURNEY

YEAR 8

Design & Technology

Learning Journey: Brutalist Plant Holder & Moisture Detector

Focus: Fabrication, Advanced Electronics, 2D/3D CAD, and Client-Centered Design **Objective:** To design and manufacture a functioning, Brutalist-inspired plant holder with an integrated moisture sensing circuit, applying advanced CAD modelling and complex soldering techniques.

Phase 1: Design Context & Brutalist Analysis

- **Architectural Research:** Investigate the bold and controversial 1950s Brutalist architectural movement. Analyse the monumental work of key architects such as Le Corbusier, Ernő Goldfinger, and Chamberlin, Powell and Bon.
- **Form and Function:** Deconstruct Brutalism's defining features—such as raw textures, heavy geometric forms, and exposed structural elements—to inspire the aesthetic concept of the plant holder.

Phase 2: Client-Centered Design & Advanced CAD

- **Client Needs & Ergonomics:** Develop a functional product specification tailored to a specific client. Focus on ergonomic success, user interaction, and ensuring the product is entirely fit for purpose.
- **2D & 3D CAD Modelling:** Build upon prior knowledge of Computer Aided Design to advance manufacturing skills. Utilise 2D and 3D CAD software to iteratively model, refine, and support both the design and the subsequent making process.

Phase 3: Electronic Systems & Component Investigation

- **Component Analysis:** Investigate a variety of electronic components (e.g., transistors, resistors, LEDs, and sensory probes) to understand their specific roles and functions within a sensing circuit.
- **Systems and Control:** Understand the principles behind the moisture detector, mapping out how the circuit interprets environmental data (soil moisture levels) to provide a clear user output.

Phase 4: Advanced Electronics & Soldering

- **Complex Circuit Assembly:** Learn and apply advanced PCB (Printed Circuit Board) soldering techniques to populate and assemble a more complicated electronic circuit.
- **Quality Control:** Ensure strong, reliable solder joints (avoiding 'dry joints') to produce a robust, functioning moisture detector, adhering strictly to safe electrical workshop practices.

Phase 5: Workshop Fabrication & Machining

- **Material Processing:** Safely use a range of workshop tools, equipment, and machinery to manufacture the Brutalist-inspired planter casing (using materials that mimic the heavy, raw aesthetic of the movement).
- **Precision & Accuracy:** Focus on rigorous workshop tolerances, ensuring all fabricated parts fit together seamlessly to house both the plant and the electronic circuitry securely.

Phase 6: Assembly, Testing & Critical Evaluation

- **Integration:** Successfully assemble the product by integrating the soldered moisture detector circuit securely within the manufactured planter casing.
- **Functional Testing:** Evaluate the final prototype in action. Is it fit for purpose? Does the moisture sensor accurately detect and signal water levels to the user?
- **Iterative Improvement:** Critically evaluate the ergonomic success and overall design against the initial client specification, proposing realistic, industry-focused improvements for future manufacturing iterations.

BUILDING EXCEPTIONAL YOUNG MEN



YOUR
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YEAR 9

Design & Technology

Learning Journey: Iconic Mobile Phone Stand

Focus: Metal & Polymer Fabrication, CAD, and Industry-Standard Practices **Objective:** To design and manufacture a multi-material mobile phone stand, utilising iconic design principles and rigorous KS4-level engineering processes.

Phase 1: Material Science & Iconic Design Analysis

- **Investigating Materials:** Explore the distinct working properties of metals (ferrous vs. non-ferrous) and plastics (thermoplastics vs. thermosetting polymers). Focus on why specific materials are chosen for structural integrity versus aesthetic finishing.
- **Iconic Design Deconstruction:** Analyse iconic design movements (e.g., Bauhaus, minimalism, or specific industrial designers). Students extract key visual principles—such as form following function or bold geometric shapes—to inspire their initial concepts.
- **Design Brief & Specification:** Develop a robust specification that meets the criteria of holding a modern smart device, incorporating an iconic aesthetic, and utilising both metal and plastic components.

Phase 2: Industry-Standard Communication & CAD

- **Iterative Ideation:** Generate initial concepts focusing on the integration of the metal base/frame and the thermoplastic support.
- **Orthographic Projection:** Produce rigorous, industry-standard 2D working drawings (3rd Angle Projection) incorporating British Standards (BS8888) conventions, including hidden details and precise dimensional tolerances.
- **CAD Modelling:** Translate 2D concepts into 3D CAD models. This allows students to visualise the assembly, test proportions, and render the final design with applied material properties.

Phase 3: Rigorous Production Planning

- **Manufacturing Diaries:** Develop step-by-step production plans (flowcharts/Gantt charts) mirroring real-world industry planning.
- **Risk Assessment & Quality Control:** Identify potential hazards in the workshop (e.g., using taps and dies, heat treatments) and establish quality control checks (e.g., checking tolerances with digital vernier callipers) before manufacturing begins.

Phase 4: Metal Fabrication & Machining

- **Preparation & Marking Out:** Use industry-standard tools (engineers' squares, scribes, centre punches) to mark out the metal components accurately from the orthographic drawings.
- **Cutting & Wasting:** Safe and precise cutting, filing, and finishing of the metal stock to the required tolerances.
- **Engineering Practices (Threading):** Introduce advanced bench skills by cutting internal or external threads using taps and dies, ensuring components can be mechanically fastened.

Phase 5: Polymer Processing & Finishing

- **Forming Thermoplastics:** Utilise heat treatments (e.g., line bending or vacuum forming) to shape the thermoplastic elements of the stand, ensuring the viewing angle is optimal for the screen.
- **Dip Coating:** Apply a fluidised bed dip coating to the metal components. This teaches surface finishing techniques used in industry to improve aesthetics, provide a protective barrier, and enhance ergonomics.

Phase 6: Assembly, Evaluation & KS4 Readiness

- **Final Assembly:** Combine the threaded metal components and the formed thermoplastic pieces.
- **Testing & Tolerances:** Test the stand against the initial specification and the orthographic drawings. Did the physical outcome meet the planned tolerances?

Critical Evaluation: Students reflect on their manufacturing diary, the effectiveness of their industry practices, and how successfully they integrated their chosen iconic design movement

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YOUR
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JOURNEY

YEAR 7

Food & Nutrition

Students participate in a carousel including art, each rotation consist of 16 lessons.

Food & nutrition (8 weeks)

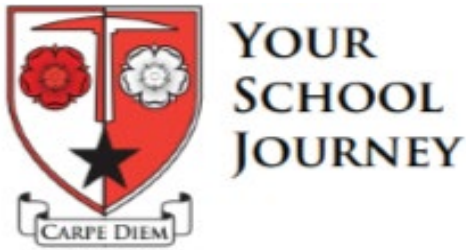
- **Maintaining a Balanced Diet** – Explore the principles of healthy eating, examining the benefits and challenges of a varied diet. Investigate how the Eatwell Guide promotes physical wellbeing, supports healthy lifestyles, and contributes to positive mental health.
- **Eating Like an Athlete** – Investigate the role of macronutrients in nutrition and understand how diet influences physical performance, growth, recovery, and overall health. Explore how food provides the energy and nutrients needed to fuel the body effectively.
- **Where Does Our Food Come From?** – Develop an understanding of food sources, production systems, and processing methods. Examine the ethical, environmental, and social issues associated with food production and consider how food choices impact individuals, communities, and the wider world.

Assessment

Is based on a range of design ideas & making skills, and an evaluation.

Students will be assessed at 3 points across a rotation of 12 weeks.

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YEAR 8

Food & Nutrition

Students participate in a carousel including art, each rotation consists of 16 lessons.

Food & Nutrition (8 weeks)

- **Healthy Lifestyles** – Explore the 8 Healthy Eating Guidelines and their role in supporting long-term health and wellbeing. Develop an understanding of how recipes can be adapted to reduce saturated fat, salt, and sugar, and learn how to transform popular takeaway meals into healthier homemade “fakeaway” alternatives.
- **What Food Does for Your Body** – Investigate the role of food in maintaining health and wellbeing, including an exploration of ultra-processed foods and their impact on the body. Build on prior knowledge of nutrition by examining the functions and benefits of different nutrients and food groups.
- **Factors Affecting Food Choice** – Examine the range of factors that influence food choices, with a particular focus on medical and dietary needs. Develop practical skills in adapting recipes and selecting alternative ingredients to create dishes suitable for individuals with coeliac disease, lactose intolerance and those following a vegetarian diet.

Extracurricular

Become a DT mentor and produce products for poppy day, mentor your peers and help to deliver extracurricular clubs and join STEM club.

Assessment

Is based on a range of design ideas & making skills, and an evaluation.

Students will be assessed at 3 points across a rotation of 12 weeks.

BUILDING EXCEPTIONAL YOUNG MEN



YOUR
SCHOOL
JOURNEY

YEAR 9

Food & Nutrition

Students participate in a carousel including art, each rotation consists of 16 lessons.

Food & Nutrition (8 weeks)

- **Healthy Lifestyles** – Explore the 8 Healthy Eating Guidelines and their role in supporting long-term health and wellbeing. Develop an understanding of how recipes can be adapted to reduce saturated fat, salt, and sugar, and learn how to transform popular takeaway meals into healthier homemade “fakeaway” alternatives.
- **What Food Does for Your Body** – Investigate the role of food in maintaining health and wellbeing, including an exploration of ultra-processed foods and their impact on the body. Build on prior knowledge of nutrition by examining the functions and benefits of different nutrients and food groups.
- **Factors Affecting Food Choice** – Examine the range of factors that influence food choices, with a particular focus on medical and dietary needs. Develop practical skills in adapting recipes and selecting alternative ingredients to create dishes suitable for individuals with coeliac disease, lactose intolerance and those following a vegetarian diet.

Extracurricular

Students can attend STEM club and DT club once a fortnight developing their skills and participate in the Green Power competition.

Assessment

Is based on a range of design ideas & making skills, and an evaluation.

Students will be assessed at 3 points across a rotation of 12 weeks.

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