DESIGN & TECHNOLOGY

YEAR 11

EXAM – FINAL EXAM

Core content and specialist knowledge: Revise and use practice exam papers in preparation for exam.

F: Evaluate & Test: Reflecting on how your product meets your design brief and specification through practical testing.

E: Realising ideas: Manufacturing your product using a range of skills and processes.

D: Modelling Modelling, testing and defining a manufacturing plan

C: Generating & Develop Ideas: Develop your ideas through sketches and models communicating ideas.

B: Specification Developing a brief and specification for your product.

A: Investigate Profiling users, analysing products, gathering research data.

NEA – DESIGN & MAKE

Investigate possibilities: What is the design context? What research can you carry out to gather ideas?.

Sustainability: Environmental and moral needs of product design.

CAD: Advanced CAD, applying ergonomic theory & inserts.

SCREWDRIVERS – CAD/CAM-MODELLING

Graphics: Developing a striking 3D net for a drinks carton, along with a brand.

Socioeconomics: Investigating into the influences on product design.

CARTON DESIGN – CARD-MODELLING

Resistant Materials: Manufacturing a mixed material product for a key user.

Design Theory: Inspired by key design movements, and iconic products

Iterations Developing a wide range of designs.

UCD: Designing for specific users using anthropometrical data and ergonomics.

SOLAR LIGHTS – RM-MODELLING

YEAR 10

RAZOR DESIGN – EMRO-MODELLING

Design: Mastering Isometric and rendering skills, iterating designs.

Craft Skills: Addition processes & wood joints. Using skills to develop high quality craftsmanship products.

Creativity: Using techniques such as biomimicry to create design.

LIT – TECHNIQUES & PROCESS

Modelling: Develop your design through iterative modelling.

Teams: Work as a design team, to merge ideas and work to briefs

Robotics: Using microcontrollers to control and design robotics.

SKILLS STICK – RESISTANT MATERIALS

MOVE – ELECTRONICS & MECH

Electronics: Applying programming knowledge to design.

Ratios: Applying maths to calculate velocity ratio & mechanical advantage.

Motions, movements & levers: How things move.

Testing: Using modelling techniques to test and trial ahead of manufacture

Metalwork: Understanding material properties, and honing fine motor skills.

Materials: Working properties, and joining materials.

Manufacturing: Concrete casting, materials theory, routers, jigs and many more!

CAD: Assembling parts together, creating orthographic drawings and 3D printing.

Learning about foundation principles in the design and manufacture of products for specific users.

Experience of multiple material areas with associated skills and theory.

YEAR 9

DESIGN DAY

WHEELIES – GRAPHICS & CAD DESIGN

Users (UCD): User centered design, and creativity techniques.

Electronics: Understanding capacitance, and astable circuitry

Industry: Gain experience of working in industry for the day to a real world brief

CAD: Develop independence in CAD using 3D design software to make complex design ideas.

Evaluate: At each stage, how can you improve your product's performance?

USE THE FORCE – ENGINEERING DESIGN

MOOD LIGHTING – METALWORK & DESIGN

MEDIA PLAYER – 3D CAD & USER DESIGN

KEEP OUT! – ELECTRONICS & PLASTICS

Broadening knowledge of materials and mechanisms. Working in more depth on projects, honing your practical skills, improving your resilience & problem solving whilst developing independence in the workshop.

YEAR 8

Teams: Work as a design team, to merge ideas and work to briefs

Processes: Designing formers, vacuum forming and vinyl cutting

Structures: Experimenting with tension and compression, and understanding material properties.

Materials: Working with metals, casting, cutting and finishing techniques.

Evaluate: Does your product work? How can you fix problems?

Make: Thermo - Forming Shaping manufactured boards Basic circuitry and soldering

ARCHITECTURE – MATERIALS & MODELS

ZIP IT – METALWORK & MATERIAL

ILLUMINATIONS – CAD & ELECTRONICS

Computer Aided Design: Begin to master 2D CAD, and experiment with 3D.

Model: Using card to model complex structures, and present ideas

Materials: Polymers Classification. What is a polymer? What is a circuit?

Learning about foundation principles in the design and manufacture of products for specific users.

Experience of multiple material areas with associated skills and theory.

YEAR 7

DESIGN SKILLS – GRAPHICS & MODELS

WHAT'S IT HOLDING – WOODWORK & JOINTS

Welcome! Settling in, equipment and group identity

Introduction to the workshops: Health and Safety

Baseline Assessment: What do you already know about D&T?

Graphics: Drawing for purpose and for explanation (isometric)

Materials: Wood classification. Where does timber come from?

Make: Measuring, wood joints, use of hand and machine tools

Product Analysis: What makes a product suitable, or desirable? How can we learn from others?

Electronics: Circuits, what components do and, resistance theory.

Design: Designing for users, CAD design development, creativity and range extension.

THE FERNWOOD SCHOOL