EMMAUS CATHOLIC MAC
Our journey with Christ

THE DESIGN & TECHNOLOGY LEARNING JOURNEY

HAGLEY CATHOLIC HIGH SCHOOL
SEMPER FIDELIS

The study of Design and Technology seeks to prepare students to participate confidently and successfully in an increasingly technological world. It helps students to be aware of, and learn from, wider influences on Design and Technology, including historical, social, cultural, environmental, and economic factors.
We aim to produce students who can use their imagination and, through experimentation, communicate their design ideas and decisions using the most suitable techniques.
We strive to help students to develop a broad knowledge of materials, components, technologies, and practical skills to develop high-quality, imaginative and functional prototypes.
We try to help students to understand the impact of their work through effective testing and evaluation.

YEAR 11

- Revision of identified topics
- Testing and Evaluation
- Development and Planning for making
- Development and Modelling
- FINAL NON-EXAMINED ASSESSMENT (N.E.A.) Writing a Brief and a Design Specification
- EXAM REVISION Review of content covered
- Making the final product(s)
- Testing developed ideas to produce a final product
- Testing ideas to select which to develop
- Generating a wide range of design ideas
- Identifying a specific End User/ Client
- Analysing and investigating a context
- FINAL NON-EXAMINED ASSESSMENT (N.E.A.) Selecting a context
- Surface treatments and finishes
- Specialist techniques
- Manufacturing processes and scales of production
- Stock forms, types and sizes
- Forces and stresses
- Selection of papers and boards
- SPECIALIST CONTENT: PAPERS AND BOARDS The sources, origins and properties of papers and boards
- Design strategies and communication techniques
- The process of designing and making
- CORE CONTENT 3 Natural and manufactured timbers
- Making paper patterns
- Thermoforming and thermosetting polymers
- Fibres and textiles
- TEXTILES DESIGN AND MAKE ACTIVITY Textiles, fabrics and fibres
- Using sewing machines to make more complex products
- Design and technology contexts
- Investigating design professionals to inform your designs
- CORE CONTENT 2 Ferrous and non-ferrous metals
- Papers and boards

YEAR 10

- Testing and Evaluation
- Simulating circuits using Computer Aided Design (CAD)
- What is a Circuit Diagram?
- More complex programming skills for useful products
- How can you use a Microprocessor to control a circuit?
- Using Breadboard to model more complex circuits
- SYSTEMS AND CONTROL What are programmable components?
- Programming a BBC Microbit
- Switching Inputs and Outputs for different purposes
- Fabrics and Fibres
- TEXTILES Designing and making a product for an End User
- Designing and Modelling for a purpose and a person
- Mechanical devices used to produce movement
- Energy: generation, storage and sources
- Programmable components
- Programmable components
- Simulating circuits and Printed Circuit Boards (PCBs)
- Making activity: Prototypes and Finished Products
- Computer Aided Design and Computer Aided Manufacturing
- MINI N.E.A. DESIGN AND MAKE ACTIVITY Investigating a context
- Developing and planning a final product
- Designing for a specific end user
- Testing and Evaluation
- Manufacturing using both traditional processes and CAM
- ELECTRONICS DESIGN AND MAKE ACTIVITY Exploring Systems and Control
- Electronic systems
- Smart and composite materials, and technical textiles
- CORE CONTENT 1 New and emerging technologies

YEAR 9

- Testing and Evaluation
- Using Computer Aided Design (CAD) to design products
- Using Computer Aided Design (CAD) to simulate a circuit
- What are resistors?
- Types of Inputs: Sensors and Switches
- Tools and equipment for building complex circuits
- SYSTEMS AND CONTROL Designing and making a product for an end user
- Using Computer Aided Manufacturing (CAM) to manufacture products
- Testing and Evaluation
- Designing products with safety in mind
- Extended practical using on-board and off-board components
- PRODUCT DESIGN Designing a product for a specific Target Market
- Investigating woods, wood finishes and adhesives
- Marking out accurately
- Extended practical activity: Wooden Toy Train
- Tools and equipment for working safely with wood
- Using sewing machines
- Designing specialist garments
- Testing and Evaluation
- Techniques for generating ideas: Biomimicry
- Motions and Mechanisms
- What are Smart Materials?
- DESIGN COMMUNICATION Typography and Corporate Identity
- Drawing techniques: 2-Point Perspective
- Working with a Client
- Testing and Evaluation

YEAR 8

- Using Computer Aided Design (CAD).
- Testing and Evaluation
- Using pillar drills safely
- Light Emitting Diodes (LEDs), Transistors and Capacitors
- Investigating electronic systems: Input, Control, Output
- Soldering and safety in the workshop.
- Measuring and marking out accurately.
- What is an End User?
- SYSTEMS AND CONTROL What is Systems and Control?
- Testing and Evaluation
- DESIGN COMMUNICATION What is Typography?
- Pencil Rendering
- Designing for a Target market
- Testing and Evaluation
- Drawing techniques: Isometric
- Investigating Designers and Design organisations
- Development and Modelling

YEAR 7

- Extended Jewellery making practical
- Design and Development
- Investigating die casting and metals
- PRODUCT DESIGN What is Design and Technology?
- Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM)
- Tools and equipment for working with metal
- What is a Target Market?

WELCOME

Matthew 16:18 'On this rock I will build my church, and not even death will ever be able to overcome it.'