Guilsborough Academy
Guilsborough Multi Academy Trust

DESIGN TECHNOLOGY

Electronics route

Core content and specialist knowledge: Revise and practice exam papers in preparation for your final exam in DT.

AO3: Evaluate & Test: Gain feedback throughout your project, and test your final product – have you met your brief?

AO2: Realise Design ideas: Manufacture your product using skills and processes used throughout your DT journey.

AO2: Generate & Develop Design Ideas: Develop your sketches and communicate ideas. Developing them using modelling techniques.

AO1: Specification & Brief: Clarify the needs and wants of the project writing your own brief & specification.

AO1:Research & investigation Follow on from your summer task to further understand the context. Client interviews, product, site analysis and designer research.

Initial Concept Sketches: What ideas do you have already? Can you visualize them?

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

FINAL GCSE EXAM

EXAM REVISION

NEA COURSEWORK

YEAR 11

GCSE NEA CONTEXTS

KS4

Make: Using MDF layers. Finishing techniques. PCB soldering skills & using 555 timers. Using recycled materials.

Design: looking at fashions and trends to produce 3D isometric designs advertising an interest area. Conducting market research. Exploded drawings. Using CAD to program microcontrollers.

Systems Theory: Design contexts, Sources, origins & sustainability.

Systems Theory: Materials and stock forms

Research & Specification: Conducting research into the problem. Identifying a user, Specification

Design: using CAD to design templates for photoetching. Using CAD to design & adapt advanced circuits. Sketching designs for product ideas by hand. Using 2D design for accurately laser cutting casings in layers.

Systems Theory: Planning and production methods

Make: through hole soldering & drilling on individualized PCBs. Assembling & finishing cases to a high quality.

Systems Theory: Materials processing, treatments & finishing techniques

Core Theory: Informing design decisions

Display Stand project

Make: Using flying leads with inputs & outputs. Neat & accurate cable management. Programming in products. Making cases using slot joints/ tabs.

Security Project

Board Game Project

Design: Designing a board game for a specific target market. 2D design for customizing designs Simple circuits on CAD modelling software (Yenka)

Make: Using stripboard/wiring to assemble a USB powered circuit with different type of LEDs. Use a range of papers and boards to assemble a card using both CAD CAM and a craft knife.

Core Theory: Papers and boards, composite materials, smart materials.

Design: Using nets and translucent paper to create detailed and clear silhouettes.

Mood Lighting project

Core Theory: New and emerging technologies

YEAR 10

Theory: Mechanisms theory including cams, levers, linkages and gears.

Make: Using timbers to produce a mechanical toy.

Design: Designing a creative and fun mechanical toy using cams, linkages and/or gears.

Mechanisms Project

Make: Sublimate your design panel. Produce a high-quality case focusing on accuracy and detail

Origin of food- field to plate. Function of ingredients. Review and apply Eatwell guide, designing food which fuses culture

Make: Sublimation printed work that has been scanned in, embroidered / machine stitching over the top. Piece has a combination of mixed media to portray their identity, which can be attached to a bag / placed within a photo frame.

Materials: Mixed media, polyester fabric, sublimation printing

Artists: Maurizio Anseri, Deborah Klein, Nathaniel Mary Quinn, Picasso, Susie Vickery

TEXTILES: "I AM" (Portrait project)

Design: Creating a self identity piece reflecting the student's personality, interests and features

Making: Fajitas, Tabbouleh, Curried rice & Pasta primavera

WHY AND HOW DO WE COOK FOOD ?

Making : Vegetable Soup
Shepherds Pie
Kebabs with flatbread
Apple turnovers

Have you ever considered why we cook food ? And the science behind how the heat is transferred into our food which cooks it ? We will look at Conduction, Convection & Radiant heat and the effects it has on how our food looks and what it tastes like.

Design: Isometric projection, CAD development CAM – use of laser cutter to customize casing

Testing / Modelling: Will my product work? What can I do to improve it?

Design: Analyse existing products to identify strengths & weaknesses. Design the structure, fastening and embellishment for your case

Advanced soldering: Use of PCB to develop soldering work

PHONE CASE

FUSION FOOD

YEAR 9

Design: Designing for a specific user. Detailed circuits, input process and out puts. Switches, microchips, capacitors LED's

Evaluate: At each stage of making, how can you improve your product? Would you change any thing?

Make: Focus on high quality finish. Using mitre & tenon saws, sander and chisel for joints. Engraving with laser cutter

Design: Designing for a user and client. What is an isometric projection? Develop design ideas using CAD.

Materials: Wood classification. Where does timber come from? What is plywood? What are it's properties?

SPEAKER PROJECT

PHONE STAND

Work in more depth on projects, honing your practical skills, improving your resilience & problem solving whilst developing independence in the workshop.

Make: Basic soldering, copper tape circuit line-bending, use of card, paper and fabric to customize the product

Materials: Working with recycled fabrics. Impact of textiles on the environment

Make: Joining techniques. Sewing by hand and by sewing machine

Nutrition: Eatwell guide, 5-a-day campaign and the nutritional panels on food packaging

Making: Pasta salad, Carrot cake, Quesadilla, Pizza and Cheese & courgette scones.

Design: Designing for a specific user Simple circuits, input process and out puts.

PATCHWORK POPART CUSHION

FOOD FOR A HEALTHY LUNCHBOX

YEAR 8

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

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

Design: Basic 2D drawing techniques. Working with geometric shapes Lay planning

NIGHTLIGHT PROJECT

ACRYLIC KEYRING

YEAR 7

Experience a wide range of fun and exciting projects that teach you valuable skills in the workshop, understanding different materials and how they work.

Evaluate: What makes a good keyring? How can you improve your skills?

Make: Shaping wire Heat setting Cutting to shape Embossing acrylic Abrading to a high-quality finish Drilling.

Design: Designing for users Shading & Rendering.

Materials: Acrylic – origin, types and material properties

Introduction to the workshop: Health and Safety

Baseline Assessment: What do you already know about DT?

KS3

After choosing GCSE options in year 9, we focus your studies in years 10 & 11, through exciting, real life projects. Deepen your understanding of DT in the world around us whilst developing products that help various needs and users.