Guilsborough Academy
Guilsborough Multi Academy Trust

DESIGN TECHNOLOGY

Product Design Route

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

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

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

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

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

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

FINAL GCSE EXAM

EXAM REVISION

NEA COURSEWORK

YEAR 11

GCSE NEA CONTEXTS

KS4

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.

Theory: Woodworking joints, finishing techniques, identification of timbers

Make: Using multiple materials to create a high quality container for a watch or jewellery.

Design: Designing the storage box in terms of size, joint selection, finish and embellishment

Jewellery Box

Design: Using inspiration from nature to design picture holders to be formed from timber.

Make: Using flexiply and veneers to create natural forms through lamination techniques

Natural Forms Picture Holders

Theory: Production methods including lamination and use of CAD/CAM

Night Light Project

Design: Design an acrylic sheet for light to shine through

Theory: Electronic systems, power systems and new and emerging technology

Make: Soldering components to a PCB to create a circuit for a night light. Also making a simple housing for the circuit using timber.

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

Make: Using timbers to produce a mechanical toy

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

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

Mechanisms Project

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

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

TEXTILES: "I AM" (Portrait project)

YEAR 10

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

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

PHONE CASE

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

FUSION FOOD

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.

YEAR 9

Advanced soldering: Use of PCB to develop soldering work

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?

SPEAKER PROJECT

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?

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

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

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

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

PATCHWORK POPART CUSHION

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.

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

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

ACRYLIC KEYRING

Introduction to the workshop: Health and Safety

Baseline Assessment: What do you already know about DT?

YEAR 7

KS3

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