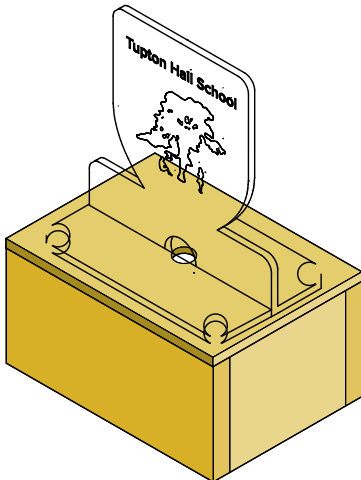
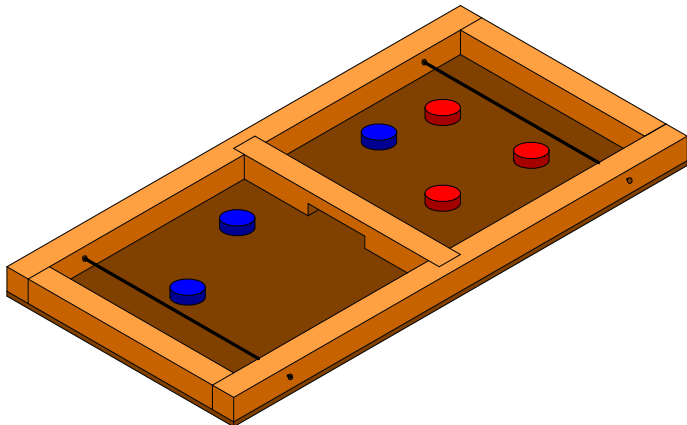


Year 7 Design and Technology

Curriculum Overview

Topic 1: Health and Safety (baseline) <u>3 Lessons</u> - Baseline assessment - Health and safety in the workshop - Safe use of tools and equipment	Topic 2: Manufacturing with Metals <u>2 Lessons</u> - Ferrous and non-ferrous metals - Alloys - Engineering tools and equipment - Working properties of metals	Topic 3: Joining Timbers <u>2 Lessons</u> - Traditional wood joints and real-world applications - Permanent and non-permanent fixings - Adhesives for timbers and other materials	Topic 4: Polymers and the Environment <u>2 Lessons</u> - Thermo and thermosetting polymers - Environmental impact of polymers - The 6 R's	Topic 5: Electronic Systems <u>3 Lessons</u> - Basic components and their functions - Soldering safely - Assembling a circuit board	Topic 6: Computer Aided Design <u>4 Lessons</u> - Introduction to CAD/CAM - Techsoft tutorials - Producing a CAD for the mood light - Laser cutting
Project 1: Spinner <u>4 Lessons</u> 		Project 2: Mood Light <u>10 Lessons</u> 		Project 3: Desk Hockey <u>8 Lessons</u> 	

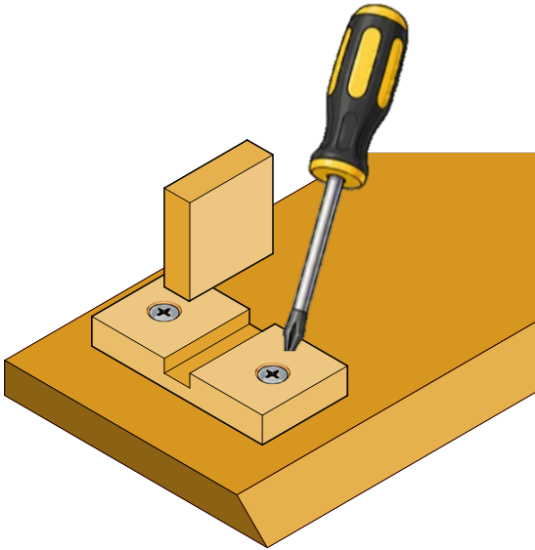
Year 8 Design and Technology

Curriculum Overview

Topic 1: Health and Safety <u>2 Lessons</u> • COSHH symbols • Safe and effective use of hand tools • Types of hazard in the workplace	Topic 2: Adhesives and finishes for timbers <u>2 Lessons</u> • Adhesives and their suitability for different materials • The purpose of surface finishes and treatments • Application of knowledge to exam style questions	Topic 3: Design Brief and Specification <u>2 Lessons</u> • Analysing a design brief • Analysis of key words/terms • Writing a justified specification using ACCESS FM	Topic 4: Ergonomics and Anthropometrics <u>2 Lessons</u> • Interpreting anthropometric data • Applying anthropometric data • Understanding the needs of the client • The importance of ergonomics	Topic 5: Electronics and Soldering <u>2 Lessons</u> • Calculating the values of a resistor • Identifying key circuit components and their functions • Accurately soldering a printed circuit board	Topic 6: Developing Design Ideas <u>2 Lessons</u> • Generating design ideas • Communicating design solutions • Evaluating designs against a set of criteria
Project 1: Pencil Case <u>8 Lessons</u> 		Project 2: Flashing Light <u>8 Lessons</u> 		Project 3: Bottle Opener <u>8 Lessons</u> 	

Year 9 Design and Technology

Curriculum Overview

Topic 1: Properties of Materials, Forces and Stresses	Topic 2: Energy Resources	Topic 3: Manufacturing and Technology	Topic 4: Polymers and the Environment	Topic 5: New Materials and Technology	Topic 6: Sustainable Futures
<u>2 Lessons</u> - Working and physical properties of materials - Enhancing the properties of materials - Forces and stresses	<u>2 Lessons</u> - Finite and non-finite resources - Environmental impact of energy generation - Carbon footprint - Renewable energy	<u>2 Lessons</u> - Automation in manufacturing - CAD/CAM and robotics - Smart technology - Manufacturing strategies	<u>2 Lessons</u> - Life cycle analysis - Polymers and their impact on the environment - Alternative materials - Properties of polymers	<u>2 Lessons</u> - Smart materials and their applications - Innovative and new materials - Composite materials - Technical textiles	<u>2 Lessons</u> - Sustainability and the 6R's - The future of design and technology - Forest Stewardship Council - Biodegradable materials
Project 1: Skills Stick		Project 2: Scrappy Creature		Project 3: Desktop Golf	
<u>8 Lessons</u> 		<u>8 Lessons</u> 		<u>8 Lessons</u> 	

Y10 - 11 GCSE Design Technology Curriculum Overview 2026-27

Year 10 (5 x lessons over 2 weeks)

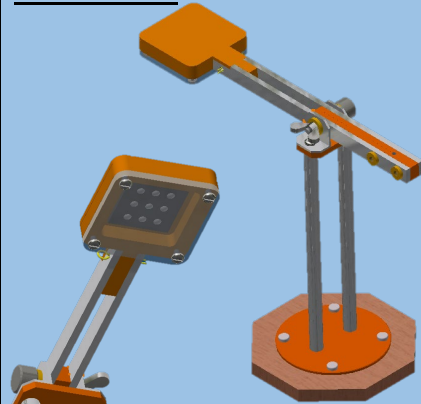
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Unit topic: • Intro & outline course • CHAPTER 15, 27, 28, 29 Timbers and processing • Assessment – Timbers and processes • CHAPTER 3: People, culture and society • Independent Learning:	Unit topic: • CHAPTER 16, 30, 31, 32: Metals • CHAPTER 02, 21, 22: Sustainability and the environment • Assessment – sustainability, environment • Assessment – Metals and processes • Independent Learning:	Unit topic: • CHAPTER 35: Commercial manufacturing and quality control • CHAPTER 17, 33, 34: Polymers • Assessment – polymers • Independent Learning:	Unit topic: • CHAPTER 45: Communication of design ideas and prototype development • CHAPTER 23: Scales of production • CHAPTER 14, 24, 25, 26: Papers and boards • Assessment – CAD/CAM/Technical drawing techniques • Independent Learning:	Unit topic: • CHAPTER 23: Scales of production • CHAPTER 45: Communication of design ideas and prototype development • CHAPTER 4: Production techniques and systems • CHAPTER 8 &9: Smart and Modern materials • CHAPTER 20: Improving functionality • CHAPTER 10: Composite materials and technical textiles • Independent Learning:	Unit topic: • Release of GCSE context: investigate options • CHAPTER 42: Investigation, primary and secondary data • CHAPTER 43: The work of others • NEA focus

Year 11 (5 x lessons over 2 weeks)

Term 1	Term 2	Term 3	Term 4	Term 5
Unit topic: • SECTION B: Producing a design brief and specification • CHAPTER 23: Scales of production • CHAPTER 25: Working with paper-based materials • CHAPTER 4: Production techniques and systems • CHAPTER 22: The six R's • NEA: Mark section A & B	Unit topic: • Y11 Mocks • CHAPTER 45: Communication of design ideas and prototype development • SECTION C & D • SECTION E: Plan for manufacture • CHAPTER 6 & 7: Energy generation & storage • Assessment: Energy generation and storage • NEA: Mark section C & D	Unit topic: • SECTION E: Manufacture • CHAPTER 11: Systems approach to designing • CHAPTER 12: Electronic systems processing • Maths in DT focus • CHAPTER 41: Commercial manufacturing and quality control • Assessment – Maths: volumes, areas, Interpreting graphs, ratios	Unit topic: • NEA: Mark section E • SECTION F: Analyse and evaluate • Revision - Exam question practice • NEA: Mark final submission • CHAPTER 17, 33, 34 Polymers and processes – recap • CHAPTER 27, 28,29: Timbers and processes – Recap • CHAPTER 16, 30, 31, 32: Metals and processes - recap	Unit topic: • Revision - Exam question practice • Exam period

Level 1/2 Engineering Vocational

Curriculum Overview – Year 1

Topic 1: Materials	Topic 2: Communicating as Engineers	Topic 3: Planning, Equipment and Processes	Topic 4: Environment, Developments and Mathematical Techniques	Topic 5: Desk Lamp (practical)
<u>8 Lessons</u>	<u>10 Lessons</u>	<u>8 Lessons</u>	<u>8 Lessons</u>	<u>20 Lessons</u>
- Course introduction and material properties - Raw materials and stock forms - Metals - Composites, plastics and smart materials - Finishes for metals - Testing material properties	- Crating and isometric - Orthographic projection (BS 8888) - Computer aided design - Communicating with CAD (Techsoft Design) - Communicating with CAD (Autodesk Fusion)	- Health and safety - Equipment - Processes (turning, milling and drilling) - Processes (joining and cutting) - Processes (moulding and forming)	- Environmental considerations - Engineering developments - Mathematical techniques - Gears - Levers and pulleys	
Assessments				
<u>Formative Assessments</u>		<u>Summative Assessments:</u>		<u>Year 10 Mock Examination</u>
Microsoft Forms homework set to inform progress on each of the topic areas		- Materials - Communicating as Engineers - Planning, Equipment and Processes - Environment, Developments and Mathematical Techniques - Practical Assessment		- Preparation and revision - Full paper to be set - QLA looking for misconceptions



Level 1/2 Engineering Vocational Curriculum Overview – Year 2

Unit 1: Manufacturing Engineering Products (40%)	Unit 2: Designing Engineered Products (20%)	Unit 3: Solving Engineering Problems (40%)
<u>September - December</u> - Task 1a: Interpreting Drawings - Task 1b: Technical Information - Task 2a: Materials, Equipment and Tools - Task 2b: Planning - Task 2c: Health and Safety - Task 3: Completed Prototype - Task 4a: Evidence of Manufacture - Task 4b: Evaluation	<u>January - March</u> - Task 1a(i): Explain the individual functions of the primary features of the product. - Task 1a(ii): Suggest at least two other engineered products that have similar functional properties to those required by the given brief. - Task 1b: Justify how the functional properties of the suggested engineered products meet the requirements of the brief. - Task 2a: Design a range of solutions that meet the brief and design specification. - Task 2b: Candidates should evaluate how their designs meet the criteria set in the brief and design specification. - Task 2c: Present design ideas clearly using suitable media appropriate to the information being displayed. - Task 3a: Candidates should draw, using conventions accurately, engineering drawings of their final design solution. - Task 3b: Outline an engineering specification that addresses key points required to produce the design solution. - Task 4a: Apply mathematical techniques appropriate to the task to determine specific problems identified in the given brief. - Task 4b: The prototype is to be produced by a third party.	<u>March - May</u> - Unit 3: Solving Engineering Problems Exam Preparation - Unit 3 revision clock - Unit 3 revision calendar
Assessments		
<u>Formative Assessments</u> Microsoft Forms homework set to inform progress on each of the topic areas	<u>Summative Assessments:</u> - Materials - Communicating as Engineers - Planning, Equipment and Processes - Environment, Developments and Mathematical Techniques	<u>Year 11 Mock Examination</u> - Preparation and revision - Full paper to be set - QLA looking for misconceptions

Y12 - 13 GCE Design Technology Curriculum Overview 2025-27

Year 12 (5 x lessons per week)

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Unit topic: - Intro – H&S 1 Materials and their applications 2 Classification of materials 3 Methods for investigating and testing materials 7 Industrial tests 4 performance characteristics of papers and boards 2 design influences, styles and movements 7 Performance characteristics of metals - Metal processes - Maths - exam question practice	Unit topic: Metal Processes - Metals assessment 01 - Metals assessment – Metals 02 – casting 6 Performance characteristics of wood - Woods assessment - Iterative design process 13 Enhancement of materials 15 Polymer processes - User centred design UCD 19 The uses of finishes 8 performance characteristics of polymers 13 Polymer enhancement 9 Biodegradable polymers	Unit topic: NEA - Section A - Polymer assessment - Exam questions 09 Modern materials 11 Smart materials 10 Composite materials – concrete practical NEA - Section A - MARK NEA - Section B Maths - exam question practice	Unit topic: - Assessment: Composite, Smart, and Modern materials - Exam questions 23 Health and safety - H&S case study - Ergonomics and anthropometrics NEA - Section A – MARK improvements NEA - Section B - MARK NEA - Section C - Maths - exam question practice 28 Design communication	Unit topic: 6 Social, moral and ethical issues - Maths - exam question practice' - Exam questions - Assessment: Social, moral and ethical issues NEA - Section C NEA - Section C - MARK - Welding theory and practical	- A level Mocks - Production aids: Jigs, fixtures and fixings (practical) 5 Major developments in technology 20 modern industrial and commercial practice 13 Design for manufacture and project management - NEA - Section C - Planning for manufacture, CAD drawings, ordering materials and material specification

Year 13 (5 x lessons per week)

Term 1	Term 2	Term 3	Term 4	Term 5
Unit topic: Chapters • Section C - Development of Design Proposals) - Sketching and modelling • NEA: SECTION C - Mark • 23 Health and safety • 5 Major developments in technology • 7 product lifecycle • Assessment Product lifecycle and developments in technology • Maths • 13 Design for manufacture and project management • 21 digital design and manufacture	Unit topic: Chapters • 20 modern industrial and commercial practice • 21 electronic data interchange • 21 Production, planning and control PPC networking • Assessment – modern industrial manufacture • 19 The uses of finishes • 24 protecting designs and intellectual property • A level NEA (Section C - Development of Design Proposals) • Section C - Planning for manufacture NEA: SECTION C – Final Mark • Section D – Manufacture NEA: SECTION D – Mark	Unit topic: Chapters • Y13 Mocks • Review mock exams • Section D – Manufacture • NEA: SECTION D – Final Mark • Exam question practice • Case studies • Section E – Testing, Analysing and Evaluating	Unit topic: Chapters • Section E – Testing, Analysing and Evaluating NEA: SECTION E –Mark • Exam question practice • Case studies • NEA submission	Unit topic: Chapters • Exam question practice • Case studies

