Design and Technology

MILLFIELD SCHOOL
Design and Technology

Year 11

Revision

Scales of production Materials and their working properties
Papers and boards Stock forms, types and sizes Developments in new materials
New and emerging technologies Energy generation and storage Selection of materials
Ecological and social footprint New and emerging technologies Mechanical devices
Stock forms Systems
Timbers Textiles
Evaluation CAD
Tolerances CAM
Polymers Metals
Environment
Orthographic
Design strategies
New materials
Production techniques
Component identification
Work of others Sustainability
Composites

Exam

Where Next?

College University Apprenticeship Own business
Architect Ship builder Engineer Astronaut Designer Teacher
Builder Project manager Graphic designer Artist
Materials manager Graphic artist Set builder
The possibilities are endless!

NEA

Design strategies Environmental, social and environmental issues Selection of materials
Selection of materials and components Primary and secondary data The work of others
Surface treatments and finishes Material management Prototype development Investigation
Stock forms, types and sizes The work of others Communication of design ideas

Specialist technical principles

Sources and origins
Surface treatments and finishes
Ecological and social footprint
Selection of materials
Forces and stresses
Stock forms, types and sizes
Using and working with materials

Year 10

Core knowledge

Materials and their working properties
Energy generation and storage Systems approach
Scales of production New and emerging technologies
Developments in new materials Mechanical devices Design
Strategies CAD/CAM
Environmental, social and environmental issues
Selection of materials and components
Primary and secondary data
The work of others Surface treatments and finishes Material management Prototype development Investigation Stock forms, types and sizes Fusibility
Communication of design ideas Aesthetics Automation Composite Ecological Footprint Finite Iterative Design Life Cycle Assessment (LCA) Physical
Functionality Batch Production Client Commercial Process Crowd Funding Ergonomics Fabrication Jig Lean Manufacturing Market Pull Nesting
Planned Obsolescence
Tolerance User
Technology Push
User Centred
Design Wasting
Processes
Smart Materias
Thermoforming
Thermosetting
Polymers

Mock NEA

Communication of design ideas Communication of design ideas
Tolerances Primary and secondary data Prototype development
Environmental, social and economic challenge Selection of materials
Investigation The work of others Selection of components

Pull along toy

Cams Machine operator Lasercut Engineer Types of motion Fabricator
Jeweller Material properties Mechanic Timber Architect Man made Joiner
Measuring Designer Sketching Civil engineer Joining techniques Mechanic
Mechanical engineer Tolerances Joiner Board Avionics technician Components

Laser cut product

Electronics Metrologist
Joiner Material Properties Diver
Teamwork Programmer Finishes
Motors Fabricator Components Electrician
Tolerances Engineer
Avionics technician
Problem solving
Cyber engineer
Sustainability
Chemical engineer
New Technologies
Facilities manager
Energy storage
Estates manager CAD
Evaluation Renewable energy engineer
Electricity generation worker CAM
3D printing Forestry worker

Year 9

Rotation 1

Jigsaw

Developer Health and safety Architect Polymers
Man made boards Fabricator Problem solving Joiner
Civil engineer Planning Teacher User centered design
Finishes Racing mechanic Tolerances Tree surgeon

Rotation 2

Costings
Fabricator
Designing Architect
Sports mechanic
Electronics
Pattern printer
CAD/CAM
Cyber engineer
Hand tools
Sound engineer
Problem solving
Software engineer
Tolerances Carpenter

Year 8

Rotation 2

Nightlight

Electrician Product analysis Designer Finishes
Electronic engineer Evaluation Theatre technician
Specification writing Mechanic Designing Plasterer
Bomb disposal Component identification Programmer

Rotation 1

Interior designer Teamwork Web developer
Finishing techniques Boat builder
HGV driver Evaluation

Iconic Chairs

Year 7

Rotation 1

Hand held maze

Joiner
Wood joints
Architect Challenge
Measuring Teacher
Tool use Plumber
Tolerance
UX designer
Planning
Painter/decorator
Health and safety
Industrial designer
Problem solving
Structural engineer Soft wood
Boat builder Cutting
Cabinet maker

Design — Develop
Make — Select materials
Evaluate — Ideas
Technical knowledge — Structures
Research
Select tools
Existing products
Electrical systems
Programming

Primary School

Assessment Opportunities Ks4:

Pupils at Ks4 are formatively assessed on a bi-weekly basis in the form of exam questions either in class or set for homework. Summative assessment takes place on a termly basis based on topics covered—This takes place alongside ongoing NEA assessment

Assessment Opportunities Ks3:

At Ks3 pupils complete a 10 week rotation in each specialism for Design and Technology. Formative assessment takes place in theoretical lessons in the form of 'Recall 3'. Pupils are assessed in a summative manner at the end of every rotation using the GCSE weighting of 50% project work and 50% theory taught over the rotation, They will also sit a formal exam at the end of the academic year. This provides teachers with a clear and fair assessment of how pupils are achieving.

A JOURNEY TO BEING EXCEPTIONAL

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