

DESIGN & TECHNOLOGY

D&T Optional Extras

Tasks
Monthly enrichment opportunities to stretch and challenge their DT curriculum.



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



Sustainability:
Environmental and moral needs of product design.

Learning about foundation principles in the design and manufacture of products for specific users.

Experience of multiple material areas with associated skills and theory.

Broadening knowledge of materials and mechanisms. Project in year 8 build on the foundations of year 7, but increase the fluency of skill and design. A greater depth of knowledge is required, and more theoretical concepts are introduced.

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A: Investigate
Profiling users, analysing products, gathering research data.

B: Specification
Developing a brief and specification for your product.

C: Generating & Develop Ideas:
Develop your ideas through sketches and models communicating ideas.

D: Modelling
Modelling, testing and defining a manufacturing plan

E: Realising ideas:
Manufacturing your product using a range of skills and processes.

F: Evaluate & Test:
Reflecting on how your product meets your design brief and specification through practical testing.

Core theory & specialist knowledge:
Exam technique, and mock exam papers. Information retrieval techniques.

YEAR 11

NEA
DESIGN & MAKE

CAD:
Advanced CAD, applying ergonomic theory & inserts.



DESIGNER LIGHT
Anglepoise lamp

Social, Moral, Economic and Environmental factors:
Investigating into the influences on product design.

Mock NEA:
Creation of mock NEA pages; A, B, C, D, E, F.

Resistant Materials:
Manufacturing a mixed material product for a key user.

Design Theory:
Inspired by key design movements, and iconic designers.



YEAR 10 PPE

DESIGNER LIGHT
Anglepoise lamp

Design:
Mastering Isometric and rendering skills, iterating designs.

Manufacturing:
Rapid prototyping processes.



Craft Skills:
Addition processes & wood joints. Using skills to develop high quality craftsmanship products.

Creativity:
Using techniques such as biomimicry to create design.

Modelling:
Develop your design through iterative modelling.

UCD:
Designing for specific users using anthropometric data and ergonomics.

Iterations
Developing a wide range of designs.



CLOCK PROJECT
Zaha Hadid & Thomas Heatherwick

Re Visit Materials:
Working and physical properties and joining materials.

YEAR 10

SKILLS STICK
Practical skills & tools



PENTER CASTING
TECHNIQUES & PROCESS

Manufacturing:
Concrete casting, materials theory, routers, jigs and many more!

Electronics:
Applying programming knowledge to design.

Motions, movements & levers:
How things move, and mechanical advantage.

CAD:
Develop independence in CAD using 3D design software to make complex design ideas.

YEAR 9

GCSE base line assessment

CAD:
Assembling parts together, creating orthographic drawings and 3D printing.



Industry:
Gain knowledge of industrial processes.

Electronics:
Circuits, what components do, soldering and resistance theory.

Evaluate:
At each stage, how can you improve your product's performance?

Testing & Planning:
Using modelling techniques to test and trial ahead of manufacture

YEAR 8

Monster Desk tidy
Design, develop realise & evaluate

Users (UCD):
User centered design, and creativity techniques.

Materials:
Working and physical properties and joining materials.

ALUMINIUM LAMP
Modelling & practical workshop skills

Structures:
Experimenting with tension and compression and understanding material properties.

Materials:
Working with metals, cutting and finishing techniques.

Design:
Inspirations, analysis and specification creation.

YEAR 7

The work of others assessment

Health & Safety:
Workshop introductions.

Processes:
Manufacturing in timbers and plastics.

The work of others:
Investigating influential designers and their work.

Structures
Investigate, test & Evaluate

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

Materials categories & classifications:
Plastics, timbers, metals and paper & board.

YEAR 7

Base line assessment

Welcome!
Settling in, equipment and group identity.

Baseline Assessment:
Gauging and then banding prior learning.

Design skills:
Communicating and presenting ideas.

Technical Knowledge:
Timbers, GRS Sustainable design.

Product Analysis:
What makes a product suitable, or desirable? How can we learn from others?

Design:
Designing for users, CAD design development, creativity and range extension.

Communication skills
Isometric & enhancement

Dye Sublimation:
Printing process.

Design:
Designing for users, branding, application and development of enhancement skills.

Branding
Design & Evaluate

Analysis:
Considering the work of others.

Model:
Using card to model complex structures, and present ideas.

Maze Project
CAD Build, Develop & Realise

Computer Aided Design:
Begin to master 2D CAD, experiment with 3D.