



CURRICULUM OVERVIEW FOR DT-PRODUCT DESIGN

KS3

**YEAR
7**

What is 'Product Design'?

Block-bots
Health and safety
Designing and creativity
Annotation

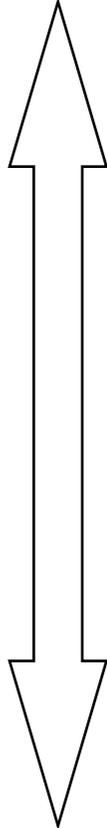
Key practical skills and machinery
CAD—2D Design—contouring an image
CAM—Laser cutter

**YEAR
8**

What is a mechanism?

Automata
Cams and followers
Implementing mechanisms in a product
Developing ideas

Joining different materials
Manufacture of own product
CAD—Tinkercad and 2D Design
CAM—3D printer
Manufacture of own product



**Courses Delivered
10 week Rotations**

HALF TERM 1

HALF TERM 2

HALF TERM 3

**YEAR
9**

Iterative thinking
Designing **passive amplifiers** (isometric & orthographic projection) both hand drawn and using CAD software.
Prototyping
Developing ideas based on testing

Practical skills
Materials—natural timbers (pine) and polymers (PLA and acrylic)
Bitmapping and contouring for the laser cutter
Quality control—measuring

Computer Aided Design
SketchUp Robot
OnShape skills development (dice)
CAM—laser cutter and 3D printer design challenge



CURRICULUM OVERVIEW FOR DT-PRODUCT DESIGN

KS4

HALF TERM 1

HALF TERM 2

HALF TERM 3

HALF TERM 4

HALF TERM 5

HALF TERM 6

YEAR
10

Product: phone holder
Work of other designers
Iterative prototyping
Perspective drawing

The 6Rs & sustainability
Planned obsolescence
Scales of production
Complex modelling skills

CAD software
Product: trinket box
Energy generation
Smart materials

Anthropometrics and ergonomics.
Isometric projection
Exploded sketches

Product: desk lamp
Soldering PCBs
Modern and composite materials.
Movement & forces.

Tech push/market pull
Third angle orthographic
Start research for **NEA**, 50% of final GCSE grade

YEAR
11

NEA
Design brief and specification
Iterative designing

NEA
Prototype building
Testing in use
Developing ideas

NEA
Final product build
Testing with user

NEA
Evaluation
Revision

Revision

END OF EXAMINATION PERIOD

Single Award DESIGN AND TECHNOLOGY - 1 GCSE

Non Exam Assessment (NEA): 50% of GCSE

The time allowed for NEA is 30-35 hours.

External Exam assessment: 50% of GCSE

Written exam: 2 hours