



Kimberley
School

A Level
3D

PRODUCT DESIGN

SIXTH FORM
D&T

What is 3D Product Design?

Product Design seeks to develop student's knowledge, understanding, skills when designing products. It encompasses a wide range of design disciplines but is firmly rooted in the skills required to design and make high quality products.

Who is it for?

The course is aimed at pupils who have gained a 5 or above at GCSE in the following Design and Technology subjects:

- Resistant Materials
- Graphic Products
- Textiles

What will I study?

Paper 1

What's assessed

Technical principles

How it's assessed

- Written exam: 2 hours and 30 minutes
- 120 marks - 30% of A-level

Questions

Mixture of short answer and extended response.

Paper 2

What's assessed

Designing and making principles

How it's assessed

- Written exam: 1 hour and 30 minutes
- 80 marks - 20% of A-level

Questions

Mixture of short answer and extended response questions.

Section A:

- Product Analysis: 30 marks

Section B:

- Commercial manufacture: 50 marks

NEA – Non examined assessment

What's assessed

Practical application of technical principles, designing and making principles.

How it's assessed

- Substantial design and make project
- 100 marks - 50% of A-level

Evidence

Written or digital design portfolio and photographic evidence of final prototype.



The course is made up of:

Year 1

Unit 1: Core technical principles and core designing and making principles.

During the A level you will develop an understanding of materials and components that are used in the manufacture of products and investigate their different applications. You will develop your knowledge and skills by working in a variety of different materials and gain experience with the related processes. You will learn how to take a design problem, investigate the user needs, create early design concepts and then develop these ideas into a fully working prototype. This will be taught through a series of hands on practical session and mini projects.

Year 1

Unit 2: Specialist knowledge, technical and designing and making principles.

During Year 2 students will develop specialist knowledge and understanding of a range of materials and processes. They will investigate modern/contemporary designs, Market Influences, Processes and Manufacture processes. These consist of Industrial and Commercial Practices; Systems and Control; Design in Context; Influences of Design History on the Development of Product and sustainability.

Unit 3: – Practical application of technical principles, designing and making principles and specialist knowledge.

Students in this unit will chose a design problem and investigate possible solutions to it. This will lead them to research the idea, offer a range of creative solutions and eventually produce a design solution. This will be presented in a portfolio and a final working porotype will be produced.

Examples of Work:

Sketches Continued

These are the different compartments for the seed packets to sit.

The handle is a curved shape and would go $\frac{3}{4}$ of the way across the whole box.

The separate compartments are for the larger tools and equipment.

Shelves inside to keep things from getting wet or damaged by being outside

This hinge would be appropriate to use in this design as it is the right size and the colour of it is subtle. I would use a hinge for the door so it will be easy to open and close

A door to keep things safe and away from the environment. The door would be fastened on with a hinge.

A good material for this product to be made out of is wood.

A place to put waste when it is no longer needed.

These drawers are to store things that shouldn't be left outside.

A chain to keep the door from falling off or going on the floor when opened

This chain can be used on the door to stop it from hitting the door and damaging it

Likes:

- This product has several compartments for different types of tools and equipment
- It has drawers to keep certain things from getting ruined in different weather conditions

Dislikes:

- It looks too industrial and doesn't look suitable for a gardening tool box for people that will use it as a hobby
- There isn't much open space for bigger gardening tools

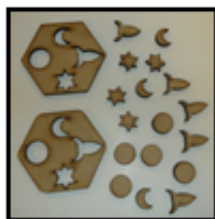
Summary of development

User feedback

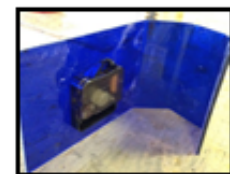
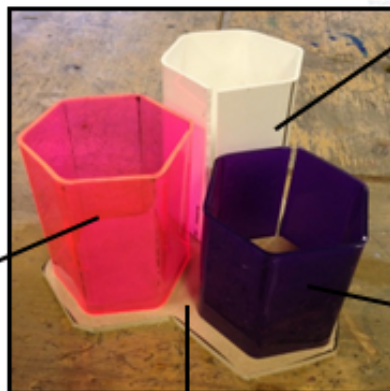
User: This base is a great design, it now prevents the clock from tipping over making it more stable and safe.



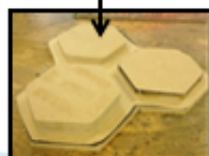
The third hexagon will contain the nightlight, with the circuit and light hidden inside and a lip with shapes cut out, so that the light can shine through.



The second hexagon will include an interactive game, where I will make separate toy shapes that can slide through the top, like a puzzle.



The first hexagon will contain the main clock part of my product, with the mechanism hidden inside, and a lid on top. The clock will face outwards.



This is the base of my product, it will keep in place the three sections, increase the steadiness and stop it from tipping over.

See Mr Yates for further details.