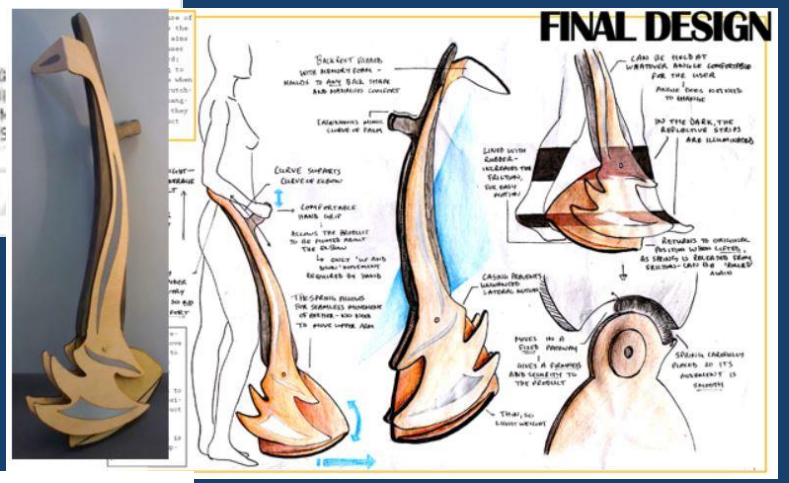


A Level
Product Design

Welcome to A Level Product Design

Learning Objectives

1. All students will have a firm understanding of the ***Product Design A level*** and participate in A level style design tasks.
2. Most students will produce a range of design ideas, which take inspiration from designers and design movements.
3. Some students will begin developing their ideas through the process of **COLLABORATIVE** designing with other peers.

Entry Requirements

WHAT DO I NEED?

(Essential)	(Desirable)
• To have studied and achieved either: • Level 5+ in GCSE D&T • Level 2Merit+ in Engineering • Level 4 or higher in English • Level 5 or higher in Maths	• Level 5 or higher in GCSE Art • Level 4 or higher in Sciences • Beneficial to have studied Business/Finance or equivalent

- You will only be put on the course if you have a good behaviour record and good reputation in the Design and Technology department
- External applicants may be asked for a reference

Introduction

NEA	Exam Written	
50 % **Out of 100**	**Paper 1 – 30%** **Out of 120**	**Paper 2 – 20%** **Out of 80**
- Identify and investigate design possibilities - Producing a design brief and specification - Development of design proposals - Development of design prototypes - Analysing and evaluating	- Materials, performance characteristics, enhancements and their applications - Forming, redistribution and addition process - The use of finishes - Modern and industrial scales of practice - Digital design and manufacture - The requirements for product design and development - Health and safety - Protecting design and intellectual property - Design for manufacturing, maintenance, repair and disposal - Feasibility	- Design methods and processes - Design theory - Technology and cultural changes - Design processes - Critical analysis and evaluation - Selecting appropriate tools, techniques and processes - Accuracy in design and manufacture - Responsible design - Design for manufacturing and project management - National and international standards in product design

Designers

In AQA Product Design you must look at various designers for your NEA and also in Paper 2.

Some of the designers are:

- **Philippe Stark**
- **James Dyson**
- **Margaret Calvert**
- **Dieter Rams**
- **Charles and Ray Eames**
- **Marianne Brandt**

Design Movements

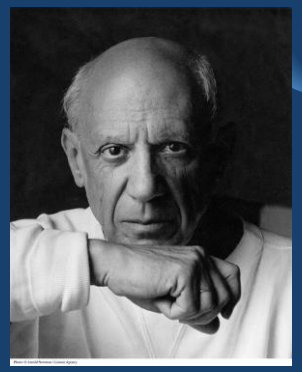
In AQA Product Design you must look at various design movements for your NEA and also in Paper 2.

Some of the design movements are:

- **Arts and Crafts**
- **Art Deco**
- **Modernism (Bauhaus)**
- **Streamlining**
- **Post Modernism (Memphis)**
- **Contemporary**

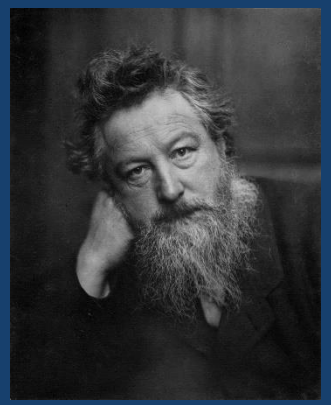
How We Design

“Good designers copy; great designers steal”
Pablo Picasso



“I am just a copier, an impostor. I wait, I read magazines. After a while my brains send me a product... I am my brain's publisher”
Philippe Stark

“Have nothing in your homes that you do not know to be useful and believe to be beautiful”
William Morris



Designer study

From the moodboard, select one product to then copy this in the space provided

Designers task

What terminology might you use to describe these two designers?

Style

Function

Aesthetics

Materials

Re-Design Idea

Using one of the designers, redesign this everyday product with the influence and style of the chosen designer

Product Design – Summer Project

Name:	

Learning Objectives:

1. **Develop an understanding of the different design movements that will be used across the A level**
2. **Be able to correctly identify the distinct styles of all four design movements and be able to write effectively on a chosen designer's work, life and influences.**
3. **Undertake a short self-study that incorporates the theory that is taught at A Level**

Learning Outcomes:

1. **Produce work based on the work of the four design movements which will influence the A level across NEA and Paper 2**
2. **Correctly apply information that has been gathered on the four key movements**
3. **Work independently on the exam practice work set out to prepare you for next year**

Summer Project Checklist

Task	Arts & Crafts	Art Deco	Bauhaus	Memphis
Introduction				
Key Designer				
Study of Work				

Theory Element	Product Life Cycle	Life Cycle Analysis	Volume of Shapes

Task 1 - Research

Designers are influential in the evolving world around us. They look to the past, present and future for inspiration and design objects which reflect this.

Part of the A level this year is to look to at significant developments in Art & Design to inspire us.

Task

You are to research the four design movements Art & Crafts, Art Deco, Memphis, Bauhaus to develop your knowledge on the following:

- **The principles of the design movement (What did they stand for?).**
- **Their influences.**
- **Some examples as pictures (no more than 3).**
- **The key designers who were involved in the design movement.**

Research Page 1

Arts & Crafts

Space for images

Art Deco

Space for images

Research Page 2

Bahaus

Space for images

Memphis

Space for images

Key Designers

Now that you have an understanding about the design movements that will be used for our project, you are now needed to evidence a key designer/maker that you feel drawn to. This can be for any/many reasons, but it is essential that you familiarise yourself with their work.

Task

Using the first task, you are now required to produce a small fact file on 1 designer from each of the design movements. You need to produce a short piece of writing based on *your own opinion* of the designer. Consider:

- **How influential they were during the design movement.**
- **Do you personally like their work? Give your reasons as to why.**
- **How they have affected Product Design with their work?**
- **Some examples as pictures (no more than 3).**
- **Any other information you find relevant about the designer.**

Key Designers

Arts & Crafts

Name	
Age	
Born	
Died	
Lived	

Picture

Art Deco

Name	
Age	
Born	
Died	
Lived	

Picture

Bauhaus

Name	
Age	
Born	
Died	
Lived	

Picture

Memphis

Name	
Age	
Born	
Died	
Lived	

Picture

Study of Work

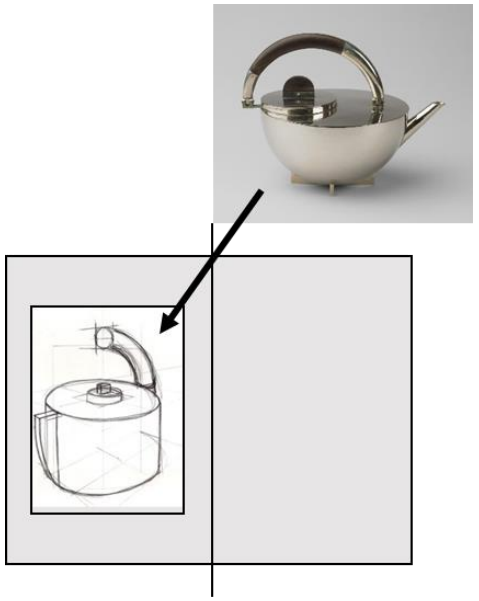
Now you have an understanding of the designers themselves, their work and inspiration you now need to produce your own study of their work.

Task

Produce a freehand sketch of a piece of work produce by the four designers.

To produce these drawings they will need to be:

- **Done in pencil (2H if you have it!)**
- **Detailed shading (not colouring in with pencil)**
- **Labels indicating what the inspiration was for your designers chosen product.**
- **NO COLOURING.**



Study Page 1

Arts & Crafts

Original Image

Art Deco

Original Image

Study Page 2

Bauhaus

Original Image

Memphis

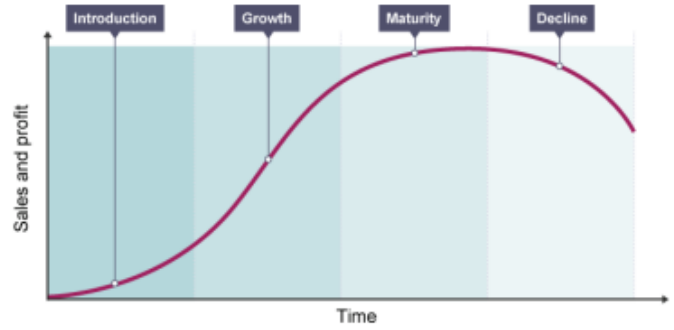
Original Image

Theory - Check Yourself Before You Wreck Yourself

Here's 3 extracts of theory that are a big part of the overall A level. Study these 3 content areas and give them exam questions a go on the next page!
No final judgement - this is just getting your brain in gear!

Product life cycle

The diagram below shows a product life cycle, highlighting the four different stages a product goes through in its life. Companies can use this cycle as part of their planning of products. Keeping a record of sales over time ensures money, materials and energy are not wasted when the product has stopped selling, lessening the potential impact on the environment.



- introduction - this can be the most expensive stage for a company due to paying for a new product to be advertised and launched while sales are low
- growth - if promotion of the product is successful then sales will increase as it becomes popular with consumers
- maturity - a competitive time for the company as their product has reached out to all customers and is becoming well known, but there is continued competition as newer products are being released, and the company will need to keep sales of their product high through more marketing
- decline - product sales decrease as new competitive products come to market and/or everyone who needs it has already purchased the product

Life cycle analysis

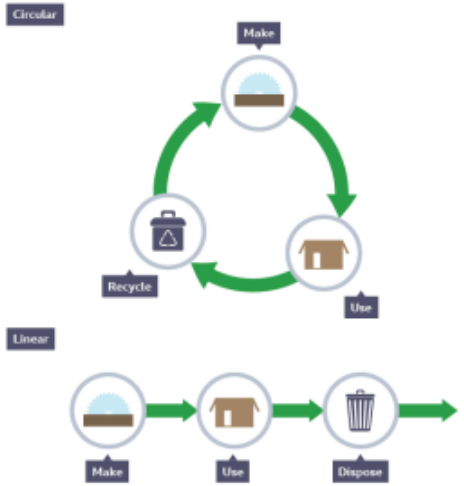
Life Cycle Analysis (LCA) assesses the environmental impact associated with a product, including:

- raw materials
- manufacture
- transportation
- Disposal

This makes it easier for the manufacturer to identify the areas that can be altered to reduce the possible environmental impact and cost of a product.

There are two different cycles:

- linear - ends with disposal, adding waste to landfill
- circular - continuous and incorporates recycling to ensure materials and products are used over and over again



Life cycle analysis needs to be considered by the designer, the manufacturer and the consumer to reduce negative impact on the environment.

Calculating Volume – Cylinders

Cylinders have circles at each end. The curved surface is actually rectangular – imagine a rectangle wrapped around the cylinder (see Figure 3.32).

The dimensions, height and width, of the rectangle can be given as:

height = height of the cylinder =

width = perimeter, or circumference, of the circle = 2π

By applying the area of a rectangle formula (h x w) the area of the curbed surface of the cylinder is:

surface area of the curved surface of a cylinder =

circumference of base x height = $2\pi\boldsymbol{rh}$ or $\pi\boldsymbol{dh}$

Where ***d*** is the diameter of the circle.

A cylinder also comprises a circle at each end, so:

surface area of a cylinder = $2\pi\boldsymbol{rh} + 2\pi\boldsymbol{r}^2$

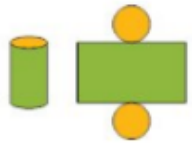
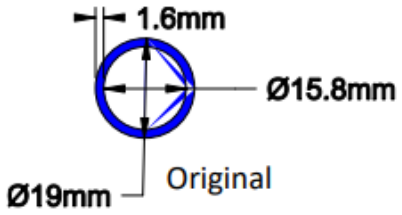
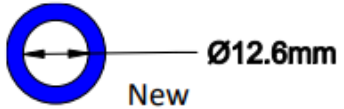


Figure 3.32 A cylinder and development

Theory - Can You Apply That Now?

1 A length of mild steel tubing of 19mm diameter is used as a handle on a shopping trolley. Product testing has revealed that the tube bends when the trolley is used at its maximum rated loading. The tube has a wall thickness of 1.6mm. In order to increase rigidity, the manufacturer is considering changing the tube to one with a 3.2mm wall thickness. The tube is 800mm long.





Calculate the increase in volume of the tube if this change is made.
Show all workings out

Ans

2 Describe the use of product life cycle graphs by product designers, on behalf of retailers and manufacturers when planning and developing new products.

3 Explain the term Life Cycle Analysis using a hardwood chair to demonstrate your answer..

Manufactured from hardwood