

YEAR 11 – 12 TRANSITION PACK



In Product Design we are interested in solving real life problems with creative thinking. Your transition tasks are designed to allow you to flex your creative muscles.

We also need you to gain greater confidence with communicating your designs using hand sketches and CAD.

Below are the tasks we would like you to complete in readiness for Year 12.

Pick a hand size(ish) product you use regularly (TV remote, hairdryer, kitchen utensil) Pick something that has an organic shape.

Task 1—Sketch it

Pick two of the following drawing techniques and sketch your chosen product by hand using only pencil. Use tone to create the 3D form. It doesn't need to be to scale.

You should sketch on an A4 or A3 sheet = approx 2hrs.

- Isometric
- One or two point perspective
- Oblique
- Orthographic

Extension: Draw your chosen product using all the drawing techniques. Pick another product with a different organic form and complete the task again.

Task 2—Draw it

Sketch your chosen product using CAD. Use any 3D drawing package you have easy access to. We would recommend Google SketchUp; it is free to download and there are loads of tutorials for it. It is essential you know how to use a 3D computer package as you have to include CAD drawings in your coursework. Therefore, it is crucial you spend time building your confidence = minimum 3hr (the more the better.)

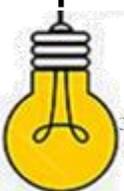
Task 3—Solve it

Observe a family member or friend using a product that you think could be improved. Take some photos of them using the product and make notes about some of the problems they have using it. Suggest 3 improvements and solutions. You could write your ideas or sketch them. Don't over think your solutions; go with your gut reaction and be as bold and as out there as you want! This task should fill an A3 sheet = approx. 1.5 hr.

Photos	Problem 1	Solution 1
	Problem 2	Solution 2
	Problem 3	Solution 3

This is a suggested layout. You can be as creative as you want.

Extension: Using all your suggested solutions, redesign the product and sketch your final design. Use full annotations to describe your design.



Task 4—Explore it

Explore the design museum website. Go to their design object page and pick an product that you find interesting. Sketch the product (using one of the drawing techniques over leaf) and render your drawing with colour, if you can. You can draw by hand or using CAD.



Annotate around your drawing information about the product using the heading from the website to guide you. Remember to use full sentences when writing.

- ▽ What do you see?
- ▽ What is it made from?
- ▽ How is it made?
- ▽ What is its life cycle?
- ▽ What is its impact?
- ▽ What is your opinion of the product and the designer?

This task should fill an A3 sheet = approx. 2 hrs.

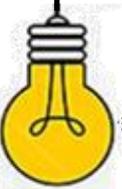
<https://designmuseum.org/discover-design/all-design-objects>

Extension: Read the information on chair designs through the ages. Create a timeline of chair designs making notes on their materials, the manufacturing techniques, the fashion with style and their environmental impact,

Task 5 – Develop it

<https://www.youtube.com/watch?v=Rnsk5IA52ps&t=58s>

- ▽ For the product ideas you sketched in Task 3, use some scrap card (cereal boxes or anything from your card recycling bin) and make some basic card models to see what your ideas look like in 3D. Once you've modelled them, get your family member to give you feedback on it and then sketch and model some more developments of the idea.
- ▽ The idea of iterative design is to go through a cycle of idea – sketch – model – test- evaluate. Practising this process will be very important as it is the style of design you will use throughout the A-Level course
- ▽ Take photos of your models and bring them in in September with your work so we can discuss your ideas!



Task 4—Explore it

Please prepare for this by researching and revising the following topics:

Topic	Details	Revised?	Ready?
Polymer	Characteristics and working properties		
Metal	Characteristics and working properties		
Circular Economy	The main features of the circular economy and systems thinking		
Iterative Design	General knowledge on iterative design, the process of innovation, and an understanding of what reverse engineering is		
Problem solving	Understanding how to creatively solve a design problem.		
Analyse and evaluate	Knowledge of how to constructively critique your own work, and the work of others		
CAD/CAM	Able to list benefits and hinderance in the manufacturing industry		

▽ Watch the You Tuber Product Tank who has some fantastic advice for budding designers.

<https://www.youtube.com/user/producttank>

▽ Watch the Victoria and Albert Museum's YouTube channel, where designers discuss their work and the museum walks you through their exhibitions.

<https://www.youtube.com/channel/UCmaflrfppKNfg8uuZVZZxQg>

▽ Find an unused or broken product around the house. Take it apart to discover how it was manufactured and the materials that were used. Photograph each stage and make notes on your discovery. Check with those at home before you dismantle!

▽ Sketch sketch sketch!

We look forward to welcoming you!

The D&T team.

