**A Level Product Design Year 12 Transition Work**

**Why study A Level Design and Technology: Product Design**

Studying Design and Technology will enable you to participate successfully and with confidence in an increasingly technological world. You will learn from the wider influences on the subject, including historical, social, cultural, environmental and economic factors.

You will develop your creative abilities by advancing your practical skills, designing skills and theoretical knowledge whilst enjoying opportunities to put your learning into practice by producing products of your choice in different materials.

Choosing Design and Technology at A Level prepares you well for a world of opportunities in higher education and careers.

Some examples include but are not limited to:

Architecture, Product Design, Interior Design, Graphic Design, Engineering (aeronautical, civil, climate, energy conservation, mechanical and robotics), Prosthetics technician, Special effects director, Furniture designer and maker.

Apprenticeships, including:

Engineering model maker, Design and drafting technician, Civil engineering technician, Carpenter, Mechanic, Plumber, Electrician

**A-Level Product Design at a glance**

This course is 50% examination (1 x 2 ½ hour written paper) and 50% coursework. The coursework allows you to design and make a product of your choice, although you will need a client as it will be based on a real-life problem. You will begin this in June of Year 12.

**In Year 12 you will study:**

Materials and properties, manufacturing processes (workshop and industrial), design related mathematical problems, product design and design influences and technological developments. You will also develop your skills in drawing (hand and CAD) and manufacturing.

**In Year 13 you will study:**

Manufacturing systems, Industrial systems for managing efficiency, environmental design, the law and how it affects designers and consumers. You will spend a substantial amount of your time completing your chosen coursework task.

**How work is set and assessed**

You will be set a variety of tasks and be expected to do your own independent reading around the subject. These might include:

* Watching YouTube clips
* Short answers
* Creating notes
* Longer answer questions (essays)
* Mathematical problems
* Examination questions
* Research
* Minor coursework tasks (practice)
* Major coursework tasks

You will be assessed us using the school systems of PIA (Positive, Improvement, Action). This will allow you to improve your work. You will also be awarded a mark or grade where appropriate so that you are able to gauge the standard of your work and whether you are on track to meet your personal targets.

**The purpose of the transition work**

The purpose of the transition work is to develop your knowledge and skills of product analysis, drawing, life cycle analysis and design movements. Some of this work will follow on from your GCSE and Cambridge National studies, other parts will be new to you. For the Design Movement work in particular, you will have to research from a variety of sources and analyse what the key messages are. All of these areas will be studied in Year 12.

There are some links to resources that will help you to complete this work towards the end of this document.

You will need to complete the work and bring this to your first lesson in September.

If you have any queries about the work these can be directed to:

opigott@holytrinitycrawley.org.uk or vchadwick@holytrinitycrawley.org.uk

Any queries should be timely and specific.

**Transition tasks:**

***Task 1: Take a torch or lantern that you have at home.***

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On paper:

* Photograph someone using the torch (close-ups), print and stick
* Take the torch apart, drawing a series of annotated pictures of the whole torch and main parts (exploded view is best)
* You need to identify the functions of each part (roles / jobs) e.g. The lens provides protection for the bulb, whilst also stopping any water getting into the electronic parts
* Specify materials that have been used and the properties that make them suitable. You will have to do some research and make your best guess about the materials used.
* Identify the manufacturing techniques that have been used and joining methods
* You need to measure all of the main features (adding the dimensions to your diagram) and explain how the size, and layout make the product ergonomic (comfortable to use)

By the end of this task you will:

* have gained knowledge and understanding of materials and processes
* be able to breakdown the different parts of a product and analyse their use
* Have demonstrated a drawing technique and dimensions best practice

***Task 2:***

* *Complete a* ***Life Cycle Analysis (LCA)*** *of your torch. You need to explain the impact that your torch has on the environment, from acquisition of material to disposing of it when it has perished. Remember that it needs batteries!*
* *HELP!!! -* [*http://www.technologystudent.com/prddes1/lifecy1.html*](http://www.technologystudent.com/prddes1/lifecy1.html)

*You need to consider the following stages (write a paragraph for each):*

* *Extraction – impact of acquiring the raw materials*
* *Production – impact of the processes required to turn the material into a torch*
* *Transport – issues of transporting the materials and products between stages.*
* *Use – the impact of the use of the product*
* *Disposal – the impact of the disposal of the product*

By the end of this task you will:

* have considered the impact of a product throughout its whole life (cradle to grave).
* You will have developed knowledge about the consequences of the impact.

**Task 3: Personal development task:**

***Choose*** *a historical design movement and designer of your choice for the following list:*

* *Arts and Crafts – William Morris*
* *Art Nouveau – Charles Rennie Mackintosh*
* *Bauhaus Modernist – Marianne Brandt*
* *Art Deco – Eileen Gray*
* *Post Modernism – Philippe Starck*
* *Stream Lining – Raymond Lowey*
* *Memphis – Ettore Sottsass*

***Produce a small booklet about the design movement and the designer e.g. 1 x A4 page folded (giving 4 pages).***

*You need to include:*

* *The dates that the design movement was active*
* *Key designers within the design movement*
* ***The philosophy about the design movement – what were they trying to achieve***
* *The characteristics that are seen in the designs (what are the underlying principles to look for), including colour, patterns, style, shape etc.*
* *The materials and manufacturing techniques most likely to being used.*
* *Information about the named designer as well as* ***examples*** *of their work*
* *How their work fits within the description of the design movement.*

By the end of this task you will:

* You will have developed your research skills
* You will have developed knowledge about a specific historical design movement
* You will have analysed the work of designers, identifying the characteristics of their work that matches then to a design movement.

**Task 4 - Vision task:**

You have almost finished the bridging unit exercises for Design and Technology*.* Before you go, we would like you to write about four lines on what you hope to get out of studying Design and Technology over the next two years:

**Links to support you with the transition tasks:**

Materials and Properties: <https://www.bbc.co.uk/bitesize/guides/zdkr97h/revision/1>

Polymers: <https://www.bbc.co.uk/bitesize/guides/zdmqmsg/revision/1>

Metals: <https://www.bbc.co.uk/bitesize/guides/zv4g4qt/revision/1>

Life Cycle Analysis: - <http://www.technologystudent.com/prddes1/lifecy1.html>

Life Cycle Analysis: - <https://www.bbc.co.uk/bitesize/guides/zwvq4qt/revision/1>

Design Movements: [http://designkmg.weebly.com/design-movements.html#](http://designkmg.weebly.com/design-movements.html)

Design Movements: <http://www.technologystudent.com/despro_flsh/Designer1.html>

**Wider reading and more:**

You should aim the following London Museums during your 2 years on this course

* The Victoria and Albert Museum- Applied arts and design from around the world
* The Design Museum
* The British Museum- artefacts from around the world
* The Brands Museum

**Useful Websites and Magazines:**

* [www.dexigner.com - online magazine](../Bridging%20%20Work%202022-2023/Transition%20July%2022%20-%20save%20new%20documents%20here/www.dexigner.com%20-%20online%20magazine)
* [The Design Museum](http://designmuseum.org/)
* [Design week magazine.](http://www.designweek.co.uk/%20-%20design%20week%20magazine.)
* [core77.com/ online magazine](http://www.core77.com/%20online%20magazine)
* [www.technologystudent.com](http://www.technologystudent.com)

***TED Talks – Watch videos featuring Design philosophy, materials and renewables.***

[*https://www.ted.com/talks/john\_maeda\_how\_art\_technology\_and\_design\_inform\_creative\_leaders?language=en*](https://www.ted.com/talks/john_maeda_how_art_technology_and_design_inform_creative_leaders?language=en)

[*https://www.ted.com/talks/tony\_fadell\_the\_first\_secret\_of\_design\_is\_noticing?language=en*](https://www.ted.com/talks/tony_fadell_the_first_secret_of_design_is_noticing?language=en)

[*https://www.ted.com/talks/katleen\_gabriels\_we\_design\_technology\_technology\_designs\_us*](https://www.ted.com/talks/katleen_gabriels_we_design_technology_technology_designs_us)

[*https://ed.ted.com/lessons/a-brief-history-of-plastic*](https://ed.ted.com/lessons/a-brief-history-of-plastic)

[*https://ed.ted.com/lessons/what-is-metallic-glass-ashwini-bharathula*](https://ed.ted.com/lessons/what-is-metallic-glass-ashwini-bharathula)

[*https://ed.ted.com/lessons/which-bag-should-you-use-luka-seamus-wright-and-imogen-ellen-napper*](https://ed.ted.com/lessons/which-bag-should-you-use-luka-seamus-wright-and-imogen-ellen-napper)

[*https://ed.ted.com/lessons/can-100-renewable-energy-power-the-world-federico-rosei-and-renzo-rosei*](https://ed.ted.com/lessons/can-100-renewable-energy-power-the-world-federico-rosei-and-renzo-rosei)

[*https://ed.ted.com/lessons/the-life-cycle-of-a-t-shirt-angel-chang*](https://ed.ted.com/lessons/the-life-cycle-of-a-t-shirt-angel-chang)