



## Design & Technology

AQA (7552) A-Level

### Product Design

Year 11 into Year 12 Induction Pack



*"Recognizing the need is the primary condition for design." — Charles Eames*

*"Design is not just what it looks like and feels like. Design is how it works." — Steve Jobs*

# WELCOME TO PRODUCT DESIGN

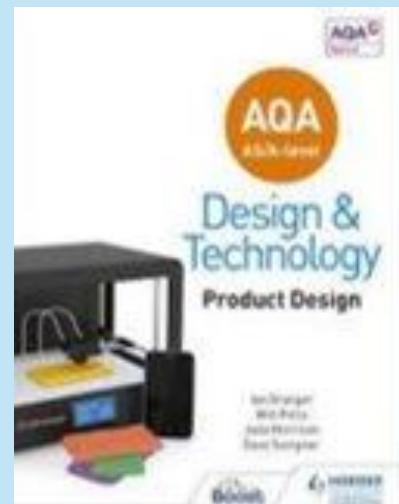


I am pleased that you have chosen A-Level Product Design at Faringdon Community College. This preparation pack is designed to provide you with key information on the course as well as prepare you for the start of the course in September.

If you have any questions, please email me on:

[clpawson@fcc.cambrianlt.org](mailto:clpawson@fcc.cambrianlt.org)

Mrs C. Pawson  
**Head of Department**



## COURSE OVERVIEW

PAPER 1	PAPER 2	NEA
<b>What's assessed?</b>	<b>What's assessed?</b>	<b>What's assessed?</b>
Technical Principles	Designing and Making Principles	Practical application of technical principles, designing and making principals.
<b>How it's assessed?</b>	<b>How it's assessed?</b>	<b>How it's assessed?</b>
Written Exam: 2hrs 30mins 120 Marks 30% of A-Level	Written Exam: 1hr 30mins 80 Marks 20% of A-Level	Substantial design and make project 200 marks 50% of A-Level
<b>Question Types</b>	<b>Question Types</b>	<b>Evidence</b>
Mixture of short and extended response: - Analyse and Evaluate: design decisions and outcomes, wider issues in design and technology - Demonstrate and apply knowledge of technical principles - Mathematics questions	Section A: Product Analysis - 30 marks - Up to six short answer questions based on the visual stimulus of products  Section B: Commercial Manufacture - 50 marks - Mixture of short and extended response - Mathematics questions	Written or digital design portfolio and photographic evidence of a final prototype.



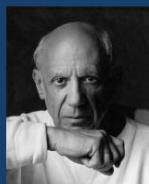
## COURSE CONTENT

Technical Principles	Designing & Making Principles
<p>1.1 Materials and their applications</p> <p>1.2 Performance characteristics of materials</p> <p>1.3 Enhancement of materials</p> <p>1.4 Forming, redistribution and addition processes</p> <p>1.5 The use of finishes</p> <p>1.6 Modern and industrial scales of practice</p> <p>1.7 Digital design and manufacture</p> <p>1.8 The requirements for product design and development</p> <p>1.9 Health and Safety</p> <p>1.10 Protecting designs and intellectual property</p> <p>1.11 Design and manufacturing, maintenance, repair and disposal</p> <p>1.12 Feasibility studies</p> <p>1.13 Enterprise and marketing in the development of products</p> <p>1.14 Design communication</p>	<p>2.1 Design methods and processes</p> <p>2.2 Design theory</p> <p>2.3 Technology and cultural changes</p> <p>2.4 Design processes</p> <p>2.5 Critical analysis and evaluation</p> <p>2.6 Selecting appropriate tools, equipment and processes</p> <p>2.7 Accuracy in design manufacture</p> <p>2.8 Responsible design</p> <p>2.9 Design for manufacture and project management</p> <p>2.10 National and international standards in Product Design</p>

## 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**



## RESEARCH TASK 1



### Designers

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

Research the following designers:

- Phillippe Starck
- James Dyson
- Margaret Calvert
- Dieter Rams
- Charles & Ray Eames
- Marianne Brandt

Include dates, what they are well known for, style, career successes



## RESEARCH TASK 2

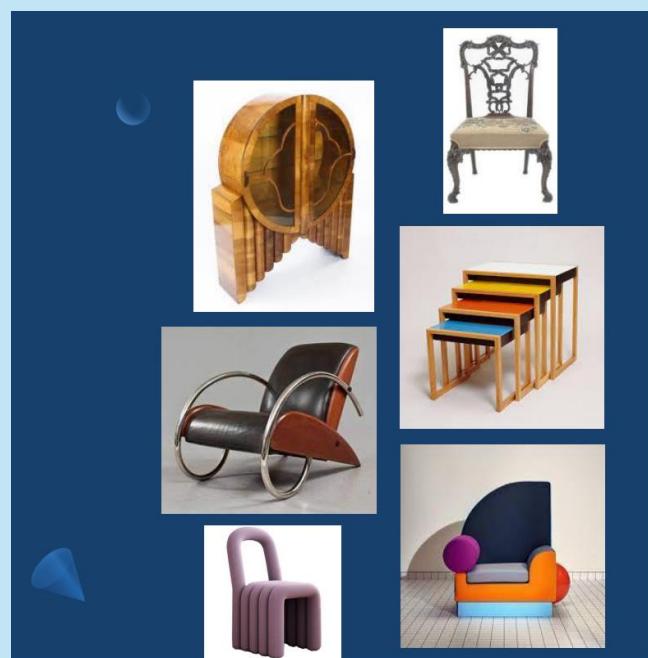
### Design Movements

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

Research the following design movements:

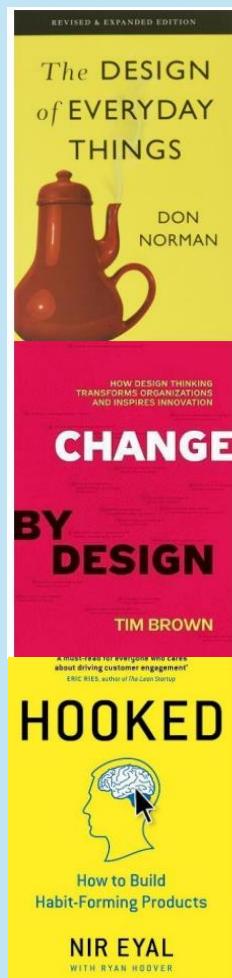
- Arts & Crafts
- Art Deco
- Modernism (Bauhaus)
- Streamlining
- Post Modernism (Memphis)
- Contemporary

Include dates, history, designers, style, successful products





It is vital you read around the subject during your A-Level. Just some useful books.



- **The Design of Everyday Things: by Don Norman** – Even the smartest among us can feel inept as we fail to figure out which light switch or oven burner to turn on, or whether to push, pull, or slide a door. The fault argues this ingenious book, lies not in ourselves, but in product design that ignores the needs of users and the principles of cognitive psychology. The problems range from ambiguous and hidden controls to arbitrary relationships between controls and functions, coupled with a lack of feedback or other assistance and unreasonable demands on memorization.
- **Change by Design: by Tim Brown** – Design thinking can be learned and developed intentionally. A potential design thinker needs to possess such characteristics as below; empathy, integrative thinking, optimism, experimentalism and collaboration.
- **Hooked how to build habit-forming products: by Nir Eyal** – A must read book for every product designer who is serious about his or her product. He boils down to four actionable steps – trigger, action, variable rewards and investment – forming a ‘Hook Model’. If you ever want to know what keeps people coming back to Facebook, Twitter, Instagram, the answer is contained in this book. And if you’re working on a consumer product, be sure to read it.

- The New Science of Strong Materials (2018) – J E Gordon
- Why we don't fall through the floor (2018) - J E Gordon
- Stuff matters: Strange stories of the marvellous Materials that shape our man made world (2014) - Mark Miodownik
- Manufacturing processes for Design Professionals (2007) - Rob Thompson
- The Genius of Design – Penny Sparke
- Materials selection in Mechanical Design - Michael F Ashby
- The Machine that changed the world – James P Womack, Daniel T Jones, Daniel Roos
- Design for the real world: Human Ecology and Social change- Victor Papanek
- Against all odds- An autobiography- by James Dyson
- Legally branded: Logos, Trade marks, Designs, Copyright, Intellectual property, Internet Law, Social media, Marketing – Shireen Smith
- Cradle to Cradle-Williams McDonough
- Sustainable Materials Processes and production – Rob Thompson
- Packaging the brand- The relationship between packaging design and brand identity – Gavin Ambrose
- Presentation techniques A guide to drawing and presenting design ideas Dick Powell
- How designers Think: The Design Process Demystified- Brian Lawson
- Less but better – Dieter Rams
- Design: The definitive Visual History – DK Books
- Great Designs – DK Books
- Process selection: From Design to Manufacture - K G Swift



It is vital you read around the subject during your A-Level. Just some useful websites.

[www.bpf.co.uk](http://www.bpf.co.uk) - The British Plastics federation

[www.explainthatstuff.com/adhesives.html](http://www.explainthatstuff.com/adhesives.html) - How forces make stuff stick, how adhesive products work

[www.pneac.org](http://www.pneac.org) - Fact sheets about printing and the packaging industry

[www.materialstoday.com](http://www.materialstoday.com) - finishing methods

[www.ttf.co.uk](http://www.ttf.co.uk) - Timber trade federation

[www.iso.org/iso/home.html](http://www.iso.org/iso/home.html) - The international organisation for standardisation

[www.nextnature.net/2011/12/11](http://www.nextnature.net/2011/12/11) -golden-rules-of-anthropomorphism-anddesign-introduction/

[www.practicalaction.org](http://www.practicalaction.org) - Website that uses technology to challenges poverty in developing countries

[www.ipo.gov.uk](http://www.ipo.gov.uk) - Website for IPO

[www.recyclemore.co.uk](http://www.recyclemore.co.uk)

[www.recyclenow.com](http://www.recyclenow.com)

[www.seymourpowell.com](http://www.seymourpowell.com)

[www.eamesoffice.com](http://www.eamesoffice.com)

[www.vitra.com/en-gb/corporation/designer/details/charles-ray-eames](http://www.vitra.com/en-gb/corporation/designer/details/charles-ray-eames)

[www.designcouncil.org.uk](http://www.designcouncil.org.uk)

[www.yankodesign.com](http://www.yankodesign.com)

[www.fairtrade.org.uk](http://www.fairtrade.org.uk)

[www.discoverdesign.org/handbook](http://www.discoverdesign.org/handbook)

[www.tradingstandards.uk/consumers](http://www.tradingstandards.uk/consumers)

[www.bsigroup.com](http://www.bsigroup.com)

[www.jamesdysonfoundation.co.uk](http://www.jamesdysonfoundation.co.uk)

[www.apple.com/environment](http://www.apple.com/environment)

[www.philips.com/a-w/about/sustainability/sustainable-planet/circulareconomy](http://www.philips.com/a-w/about/sustainability/sustainable-planet/circulareconomy)

[www.wrap.org.uk](http://www.wrap.org.uk)

[www.isixsigma.com/new-to-six-sigma/getting-started/what-six-sigma/](http://www.isixsigma.com/new-to-six-sigma/getting-started/what-six-sigma/)

[www.scrumalliance.org/why-scrum](http://www.scrumalliance.org/why-scrum)

[www.iso.org/home/htm](http://www.iso.org/home/htm)



**It is vital you read around the subject during your A-Level.**

**There are a number of useful films and documentaries that will develop your wider understanding of the topics covered. These are just some..**

1. Abstract: The Art of Design –Netflix's documentary series. The series profiles eight of the most innovative thinkers working in design. Watch to learn about the creative processes of the leaders in architecture, interior design, fashion, photography, graphic design, illustration, and automobile design.
2. Abstract: Season 2- Netflix's documentary series
3. Helvetica - Directed by Gary Hustwit as part of the documentary design trilogy including 'Objectified' and 'Urbanized', Helvetica is a documentary about typography and graphic design. This film explores the history of the Helvetica typeface and they way it's shaped the world around us.
4. Objectified- another film by Gary Hustwit, explores the extent that the design of everyday objects affects us. The film showcases the process of designing these objects and it profiles the graphic designers that create them.
5. Urbanized- another film by Gary Hustwit explores urban design the language of the city.
6. Design and Thinking is a documentary that examines the relationship between design and business. It shows how creative minds and business professionals can work collaboratively and strategically to create social change.
7. Lemonade- What do you do when life hands you lemons? You make lemonade, of course! This film shares the story of 16 creative professionals who lost their jobs and were forced to get creative about their own lives. It's a documentary about following your dreams and making the most out of any situation.
8. Eames: The Architect and the Painter- Focus on the Eames office
9. Hard Talk- BBC i-Player Stephen Sackur interviews Ola Kallenius, CEO of Daimler, one of Europe's biggest vehicle manufacturers.
10. How to Make series- BBC 4 Designer, Maker and materials engineer Zoe Laughlin explores The Trainer, The Tooth brush, and Headphones.
11. Product tank- YouTube channel for prototype design
12. YouTube- The three ways that good design makes you happy | Don Norman- design critic Don Norman turns his incisive eye toward beauty, fun, pleasure and emotion, as he looks at design that makes people happy. He names the three emotional cues that a well designed product must hit to succeed.
13. 50 most iconic designs of everyday objects  
<https://www.complex.com/style/a/kathryn-henderson/the-50-most-iconic-designs-of-everyday-objects>
14. There are many Product Design YouTube clips
15. There are many Ted Talks on product Design, including:  
[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/philippe\\_starck\\_design\\_and\\_destiny?language=en](https://www.ted.com/talks/philippe_starck_design_and_destiny?language=en)