

DESIGN & TECHNOLOGY

PRODUCT DESIGN

It is difficult without you having textbooks or resources available to give you too much specific work however, you can get this information from the internet. I have suggested some websites but searching is just as good as long as it is a reliable source!

I have broken this work down into 6 sections (tasks) so you can complete 1 a week or however you want over the time. The important thing is you have a genuine interest in the subject and desire to understand the range of topics involved. Along with the tasks you should be conducting your own research on design technology between now and September which should be ongoing. This research could even be watching shows, youtube videos or reading articles on all and anything design related.

TASK 1

Conduct some research into the following areas, some of which you may have looked at for GCSE;

Design styles and movements

- Arts and Craft movement William Morris – late 19th Century
- Art Deco Decorative styling 1920 & 30s
- Modernism, e.g. Bauhaus Walter Gropius School of Art & Design – 1930s
- Post modernism, e.g. Memphis Design studio - early 1980s

Designers and their work

- Phillipe Starck Industrial designer
- James Dyson Inventor/designer, founder of Dyson
- Margaret Calvert Graphic designer/typographer – UK road sign
- Dieter Rams Industrial designer - Braun
- Charles and Ray Eames Husband and Wife industrial designers and Architects
- Marianne Brandt Designer and member of the Bauhaus group

In addition, you need to look at these socio-economic influences that have helped to shape product design and manufacture over the past century;

- Bauhaus and development of furniture for mass production - Post WW1
- Rationing, the development of 'utility' products - During WW2
- Fashion and demand for mass produced furniture and decorative design - Post WW2

TASK 2

It is also important you start to look closer at a range of different products and their impact on global society. You should then begin to question why there are as they are, investigating aspects of the history, influence and technologies used.

Keep a notebook of images, sketches & drawing would be beneficial, making a note of any useful websites you find, and writing down any questions you may want it find answers too later. Looking at crowdfunding sites, where designer put forward their ideas, can be very good sources of ideas.

TASK 3

One of the occurring tasks you need to do for A Level is being able to look at and judge products; ones that perform the same or similar function, like for like. These are often given to you in questions, with photographs of the products. You should be able to compare and contrast them (sometimes using given criteria), discuss the positives and negatives, discuss their development and think about the environmental impact they have.

Domestic appliances are a good example for this, as this example demonstrates;

EXAMPLE: **Figure 1** shows a 2010s modern cordless kettle. **Figure 2** and **Figure 3** show a 1980s kettle.

Compare the two kettles shown with reference to the following:

- Product safety
- Energy efficiency
- Ergonomics



	Modern kettle	1980s kettle
Material	ABS	Stainless steel with a polymer handle
Power supply	Detachable base unit	Plug in power cord
Method of filling	Hinged lid	Removable lid
Heating element	Flat hot plate	Heating filament

[12 marks]

Ideally you need to balance your answer to equally discuss both products. Please have a go at this question first.

TASK 3 QUESTION

Compare and contrast the following, using your own examples (but include a photo for each). Use different criteria, depending on which you think suits best – Aesthetics, Ergonomics, Materials, Manufacturing, Environmental impact/Sustainability, Safety, Functionality.

1. A carbon framed Road Racing bike v a Down-hill or Mountain bike.
2. A disposable Paper or Styrofoam cup v a Reusable cup
3. An Analogue v Digital Clock
4. The original Sony Walkman v an iPod or other MP3 player

TASK 4

Design development (History) is another important aspect of the course. The reason for product design is to understand and try to meet the needs of the users or potential users, whether they are specific or general.

I would like you to produce a timeline, with images and descriptions, of the key development of one of the following products;

- The Bicycle
- The Television
- Portable Personal music devices
- Modern 'eco' cars

This can be done in any format but the key dates, introduction of materials and/or techniques, personal, need/demand should be the focus. Images to show the developments will help with this.

It would be a good idea to investigate them all before settling on one.

TASK 5

The A level written exam has a Maths/Numeracy question which require you to apply your knowledge and understanding to calculate things such as Area, Mass, Volume, Angle, and Length.

For example: Have a go at these questions

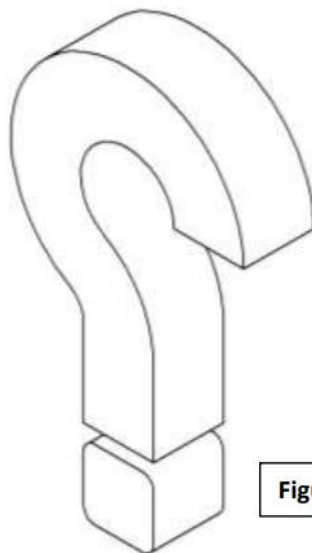


Figure 1

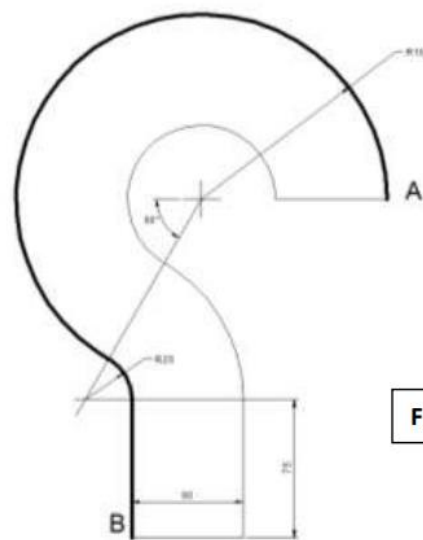


Figure 2

Figure 1 shows a Question Mark shaped light being developed as a prototype. The top part of the lamp is made by laminating plywood around the outside edge.

Figure 2 gives the dimensions of the light in millimetres.

Give all answers to 2 decimal places.

(i) Calculate the length A-B, so the plywood can be cut to the correct length.

Figure 3 show the base of the light which is to be cast in Aluminium.

(ii) Calculate the volume of the block, before the hole is drilled through the centre.

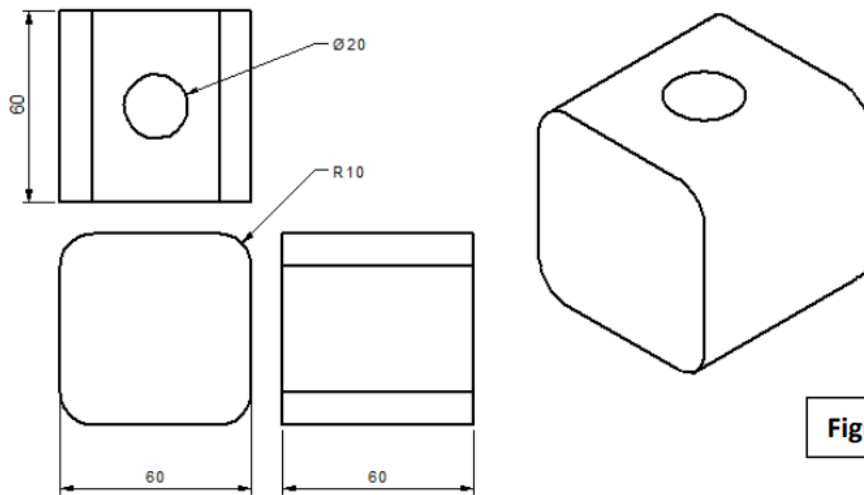


Figure 3

TASK 6

The aim of this task is to get you comfortable drawing using a CAD programme so that you can draw up your ideas in Y12. If you have had experience before you may want to skip down to a more advanced tutorial and start there.

Once you have completed a tutorial, print screen the page and crop it down to show your drawing. Bring in a printed copy for your first class in September.

To start you need to download Sketch Up onto a desktop or laptop at home, this is free. You can choose which version you prefer <https://www.sketchup.com/download/all/>

Tutorials – From beginner onwards

a) <https://i.materialise.com/blog/en/first-3d-model-in-sketchup-tutorial/>

b) <https://mastersketchup.com/sketchup-tutorial-how-to-create-a-vase/>

c) <https://mastersketchup.com/sketchup-smooth-soft-and-hidden/>

d) <https://www.youtube.com/watch?v=mBkW5e5LLz4>

e) <https://www.youtube.com/watch?v=Pa8Jun3vyno&t=54s> (Model a storage unit then create an exploded view)

EXTENSION TASK - After you have tried the tutorials above choose two more from YouTube (which include curved surfaces) and draw up objects of your choice. Save the work and screen shot your work as evidence.

AND FINALLY...

Finally, no doubt you are watching the odd bit of TV, Netflix or YouTube! There are some very good design and technology based programs, videos and clips on how products are designed and made from building to cars to oil rigs to airplanes.... some of these are very specific! Watch a few (or more) and make a note of the ones you think are good and could benefit everyone. I would like to start

collating clips that we all can use to help learning and understanding. Make note or save the link so we can share our findings in September.

Could also be interesting articles, information, designs or inspiring products from the list below:

Interesting Websites for potential A-level Design students

Design Museum – <https://www.designmuseum.org/> – this has a database of lots of different products, some iconic, across a range of different areas.

RIBA Stirling Prize – <https://www.architecture.com/> – this has the past winners of the UK building of the year.

Technology Student - <http://www.technologystudent.com/> - Although used for lower school still really useful to find information on all subject topics for A-level/ GCSE Design technology!

Learning DT -<http://www.design-technology.info/> - Another useful website to understand subject topics

How stuff works - <https://www.howstuffworks.com/> - this is a little more in-depth on how STEM works. Try the tech section and see what you can find.

Wired - <https://www.wired.com/tag/tech-biz/> - Technology section can have some very interesting articles on the subject

Yanko Design – <https://www.yankodesign.com/> - Innovative designs of all sorts – see products/ design/ buildings that are futuristic – ideas or real?

Design Boom - <https://www.designboom.com/> - A Design magazine with everything design and booming – best to the worst designs currently

Design Addict - <https://designaddict.com/> - Online shopping for the greatest designer products – here gain understanding of what's selling and on offer and get inspiration!

AQA - <https://www.aqa.org.uk/subjects/design-and-technology> - Exam board - Get a head start and look at the specification you will be working towards next year

Alessi Design - https://www.alessi.com/us_en/ - Lookup and get some real inspiration from a designer you have/ will be studying.

Bauhaus Design - <https://www.bauhaus-dessau.de/en/index.html> - Study the movement!

Memphis Design - <https://www.memphis-milano.com/> - Study the 'unusual' design movement.

AND TRY TO BUY THE BOOK!!!

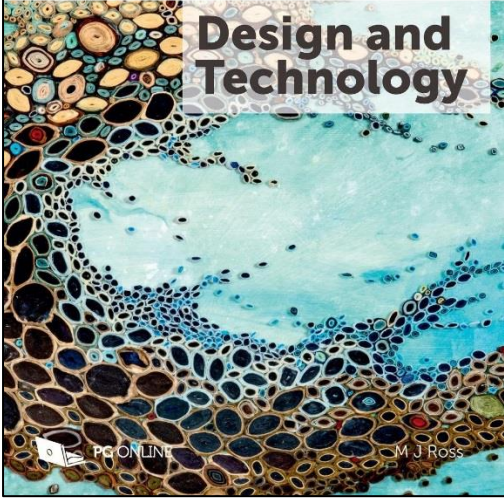
Try and purchase the A-level book before September 2020 so you are ready to go when you start year 12 – you will have to know and understand the topics which are covered in this book so why not get a head start!

Approx £20 (Amazon)



AQA GCSE (9-1)

Design and Technology



PC ONLINE

M J Ross