Y12 Induction Day 2020

AQA Product Design

Assessment

Exam Paper 1 Technical Principles	2 ½ hours Short & extended response	120 marks	30%
Exam Paper 2 Designing & Making Principles	1 ½ hours Product analysis (short answer – 30mks) Commercial manufacture (short/extended 50 mks)	80 marks	20%
NEA (Non Exam Assessment)	Design portfolio & photographic evidence of final prototype.	100 marks	50%

Course Structure

- **The Basics…**
- Exam Board - AQA
- Assessment - 50% written exam/ 50% NEA
- No. Exams 2 x (1x2hr30min and 1x1hr30min) exams, end of Y13
- NEA In year 13 -45hrs single substantial design and make task. The portfolio should have photographs illustrating the making of the final product.
- Y12 - Articulating lamp (workshop based) and Childs Chair (CADCAM based)
- Begin NEA major project in Y12 (45 x A3 pages max)

What can I do now?

Product Design Transition Tasks

Deadline: Hand this work in during your first lesson in Sept.

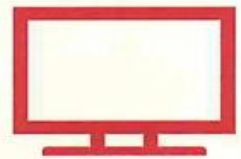
- **1. Product Study**
- Choose an iconic product from a key movement or designer. Then undertake a detailed product study. Suggested areas of study are outlined below, but not all will be appropriate for all products.
- Identification of the materials used
- Sourcing of material and the associated environmental issues
- How is the product manufactured – component parts and assembly
- What finish is applied
- Ergonomic considerations
- Critical analysis of the product in use leading to suggesting improvements.
- End of life
- produce a key knowledge summary with illustrations

- **2. Product comparison**
- Choose a common product to undertake comparison exercise.
- These could be similar products that are manufactured from different materials such as corrugated cardboard packaging and polypropylene packaging.
- They could be similar products with a different intend use such as an office chair and a portable deck chair.
- They could be a model or prototype.
- Areas of study could include:
- Materials
- Manufacturing process
- Ergonomics
- Suitability for the intended environment
- Cost and economic issues
- Function, aesthetics and performance
- develop well-structured, coherent justifications and arguments, your knowledge and understanding of materials. Include illustrations.

A Level Product Design – online resources list

Intellectual Property – You will need to be familiar of how designs are legally protected. https://www.innovate-design.co.uk/patent-advice/

James Dyson Foundation – Look at the resources section there are lots of inspirational ideas, information on designers and ideas for modelling and testing.
https://www.jamesdysonfoundation.co.uk/who-we-are.html



The Victoria and Albert Museum – Excellent resources for anyone in Design or studying it.
https://www.vam.ac.uk/collections?type=featured
https://www.vam.ac.uk/info/teachers-resources-for-secondary-schools-and-colleges

Big Life Fix – inventing the impossible – BBC Teach – individual case studies! Watch a team of designers solve real-life problems.
https://www.bbc.com/teach/class-clips-video/design-and-technology-ks34-big-life-fix/zkgy8xs

Episode 1 https://www.youtube.com/watch?v=munVsXsqqSc

Episode 2 https://www.youtube.com/watch?v=K4WIQu8zVFk

Episode 3 https://www.youtube.com/watch?v=PcEdbMuTnxY

Episode 4 https://www.youtube.com/watch?v=EfhkTe3hMYg&index=4&list=PL6O355RcZP9Ns6B7PSuE3DU1SrmY9JnU4&t=0s

BBC Teach https://www.bbc.co.uk/teach/class-clips-video/design-and-technology-science-ks3-ks4-gcse-the-imagineers/zjfvpg8

https://www.bbc.co.uk/teach/class-clips-video/design-and-technology-ks3--gcse-how-to-build/zbgg7nb

https://www.bbc.co.uk/teach/class-clips-video/design-and-technology-ks3-explain-this/zhwdjhv

https://www.bbc.co.uk/teach/class-clips-video/gcse-design-and-technology-biomimetics-designed-by-nature/zrcj92p

BBC Bitesize Technology Student.com http://www.technologystudent.com

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If you have been studying GCSE Design and Technology you have access the AQA text book on line and to SENECA.

3. Great Induction Scavenger Hunt.

The aim is to find as many as possible of the items on the list below. DO NOT collect the items - take a photo of them & creatively present your work in PowerPoint. One slide per item. Include :- a title and a photo

Material Properties

- You may only use each item ONCE.
- Be creative with your presentation!

Take a photo of.....

- A product made from polypropylene
- A product made from aluminium (or aluminium alloy)
- A product made from HIPs
- A product manufactured using blow moulding
- A product designed with ergonomics in mind
- A product with a part that has been turned on a lathe
- A product that has been injection moulded
- A product that has been galvanised
- A product that has been knurled
- A product made from mild steel
- A product made from Polycarbonate (PC)
- A product that has been welded
- A product that has been made using materials that were recycled
- A product that has been manufactured by casting metal
- A product that has been powder coated
- A product that contains a Modern material
- A product that has been vacuum formed
- A metal product that has been press formed
- A product made from copper
- A product that has been manufactured using rotational moulding
- A product that has been made from ABS
- A product that is made from melamine formaldehyde
- A Great British iconic product
- A product that contains a SMART material
- A product that describes you and explain why? Think about its properties.

HAVE A WONDERFUL SUMMER BEFORE THE HARD WORK BEGINS.....

Material Properties

- The properties of materials are their characteristics.
- All materials can be described in terms of their properties.
- Different Materials have different Properties

Mechanical properties

Strength
Hardness
Toughness – Tensile Strength
Elasticity
Ductility
Malleability
Flexibility
Plasticity

Physical properties

Electrical Conductivity (conductor/insulator)
Thermal Conductivity (conductor/insulator)
Fusibility (Boiling point, Melting point, Freezing point.)
Density
Absorbency
Magnetic