



STEP UP TO 6TH FORM

KIMBERLEY SCHOOL TRANSITION INFORMATION

Design & Technology Product Design A Level AQA

COURSE DETAILS

Overview

A creative qualification that enables students to develop technical design knowledge and practical application. The course encompasses a wide range of design and manufacturing disciplines; with a focus on developing the skills and confidence required to make high quality products that solve real life problems. This course develops a student's understanding of how designers approach design problems and how they take social, cultural and environment consideration into account.

Core Material Areas

- metals: ferrous, non-ferrous, alloys
- woods: hardwoods, softwoods, manufactured boards
- polymers: thermoplastics, thermoset polymers
- papers and boards
- composites
- smart materials
- modern materials.

Wood

- Students should be aware of the different stock forms of timber: rough sawn, PSE, natural timber manufactured boards...
- Be able to describe the performance characteristics of woods: grain pattern/direction, surface defects/warpage, shrinkage/splitting, joining, resistance to decay/moisture/toxicity.

Metals

- Students should be aware of the different stock forms of metals, including: sheet, plate, Bar: round, square, hexagonal etc
- Students should be familiar with the various types of metals: ferrous (stainless steel, HSS...), non-ferrous (aluminium, copper...) and respective alloys variants.

Polymers

- Students should be aware of the different stock forms of polymers: sheet, film, granules, rod and other extruded forms, foam and powder.
- Students should be able to describe the performance characteristics of polymers: toughness, elasticity, insulation, ability to be moulded, resistance to chemicals and liquids, suitability for food packaging and recyclability...
- Students should be familiar with polymers such as: thermoplastic, polypropylene (inc low/high density), nylon, PVC, polyester resin and more.

EXAMS

- 1 x 2hr30min 30%
- 1 x 1hr30min 20%
- + Non Exam Practical 50%



LINK TO THE SPECIFICATION

See a detailed document of what we will cover in this course:

<https://filestore.aqa.org.uk/resources/design-and-technology/specifications/AQA-7552-SP-2017.PDF>



UNIT 1

UNIT 2

UNIT 3

UNIT 4



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Work you can do to prepare for A Level study

Practical Application

Revision of key materials areas and processes is a must. Research the following materials areas and associated processes that are linked to plastics, metals and woods.

Plastics: injection moulding, blow moulding, rotational moulding and extrusion moulding

Wood: Wood turning, steam bending and lamination

Metals: sand casting, gravity die casting, MIG welding and brazing
Please research the key processes and draw and label diagrams for each.

To really get a head start on the course you can also research smart materials, modern materials and biodegradable polymers.



BOOKS



We recommend the AQA AS/A level Design and Technology Product Design (Hodder Education) Text book as an excellent starting point.

- Drawings for product designers – Kevin Henry
- The Design of Everyday Things - Don Norman
- Sketching The basics - Koos Eissen, Steur Roselien

YOUTUBE / TED



- Tony Fadell - The First Secret of Design is Noticing (ted)
- 10 principles of design (youtube)
- John Cary - How Architecture Can Create Dignity For All (ted)
- Michael Murphy Architecture That's Built to Heal (ted)

PEOPLE & DESIGN STYLES TO RESEARCH



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|------------------|-------------------------|
| Philippe Starck | Art and crafts movement |
| James Dyson | Art Deco |
| Margaret Calvert | Modernism |
| Dieter Rams | Bauhaus |
| Marianne Brandt | Streamlining |
| Charles Eames | Post modernism |

