

Year 12 into 13 bridging work

# AQA Design and Technology

Bridging information and requirements over the summer.

Present this work on A3 paper with your name clearly on each page, ready to hand in the first lesson in year 12.

Make sure your theory folder is in order and ready to hand in for checking the first lesson back in September.

## Compulsory Task 1

Download Google Sketch up at home. Go through the student tutorials to familiarise yourself of the functions of the program. You will need to be able to draw design iterations on this for your final project.

## Compulsory Task 2

Investigate and produce a write up for each of the following:

1. The legal aspects of products
2. Quality control during manufacture and accreditation e.g. BSI Kitemark
3. Quality assurance, including the different stages, systems e.g. ISO

## Compulsory Task 3

Research and produce a write up, with a step by step of processes for each of the following different forming methods, name specific products and scales of production (one off, batch, mass etc)

- vacuum forming
- thermoforming
- calendaring
- line bending
- laminating (layup)
- injection moulding
- blow moulding
- rotational moulding
- extrusion

## Compulsory Task 4

Produce A3 pages of research, notes, sketches and annotations to explain what Elastomers are and what they are used for.

Explain the suitability of elastomers making reference to relevant physical and/or mechanical properties, including:

- ability to be stretched and then return to original shape
- texture
- self finishing
- non-toxic.

Show your understanding how elastomers are used to enhance products, for example in producing grips for improved ergonomics.

Consider uses for

- natural rubber
- polybutadiene
- neoprene
- silicone
- Thermoplastic Elastomer (TPE).

### **Compulsory Task 5**

Explain each production system below, giving examples for the types of products that would be made in each manufacturing system,

- modular/cell production
- just in time (JIT)
- quick response manufacturing (QRM)
- flexible manufacturing systems.

You will also be asked to complete design work as a H/L task in the last week of this term for your NEA work