

AQA GCSE D&T PRODUCT DESIGN

Year 10 –Spring Term

Theory Content. These relates directly to the knowledge required in both the examination and to help students make informed judgement when completing their Controlled Assessment next summer.

Materials – further learning related to properties, sourcing, application and sustainability. This includes carbon Fibre Composites, metals, plastics, woods, smart materials and modern materials. Joining woods. Plastics Commercial Production Techniques.

Products in Society, Marketing and Social Issues. Social and Moral Issues in Design, Fairtrade, Cooperatives, energy creation and environmental issues.

Scales of Production, Critical Path Analysis and QC- This learning looks at the techniques used in modern day manufacturing and the principles behind it. Understanding is gained through competition style group production simulations and theory lessons. This work covers, JIT, Kanban, kaizen, mass, batch and job production, Critical Path Analysis and RFID.

Mechanisms. This element of the course develops students understanding of forces, lever, linkages, gearing, pulleys and types of movement. Where possible students explore through modelling, investigating and reviewing example of mechanisms in use and through theory lessons.

CAD/CAM Study of commercial benefits of using these systems. Introduction to 3D Cad skills through focused tasks. Introduction to 3D printing principles.

Design Projects and Practical Skills

Project 1.

Iterative modelling exercises Students will complete a series of iterative modelling and design exercises to help them develop the skills required to develop innovative and well-conceived ideas in their coursework. This year these have included new Apple Products, emergency response devices for the elderly drinks carrying concept for festivals.

Project 2.

Wood Turning Candle Sticks. Students will be given the opportunity to develop a personalised candle stick through initial modelling and testing. They will then develop the concept through turning. Extension learning will look at how the design could be sand cast in two halves or in silicon moulds.

Recommended online resources:

<https://www.technologystudent.com/> Online resource providing resources, example test papers, animations, videos and teaching. Specifically aimed at the AQA syllabus.

<https://www.bbc.co.uk/bitesize/subjects/zvg4d2p> Learning and revision website that links to all D&T exam boards.