

Product Design @ WBS Year 13 Roadmap

Subject Aim: Students will build on their knowledge of materials and processes from GCSE and apply these to a robust and challenging NEA design and make task. Students will continue to build on theory and exam practice to prepare for their A-Level exam.

	TOPIC 1 Theory	Topic 1 NEA	ASSESSMENT IN YEAR 13
AUTUMN TERM	<p>Use of media: Students will explore different methods of communicating and conveying design decisions, including pictorial drawings, nets, translations and report writing.</p>	<p>Completion of final design solution</p> <p>Review of development and final design solution.</p> <p>NEA prototype manufacturing begins.</p>	<p>Exam board: Pearson Edexcel Syllabus: 9DT0</p> <p>Exam 50% – 2h30 min written paper, to be sat at the end of year 13. NEA 50% – one piece submitted at the end of year 13.</p> <p>Students will have End of Unit exams at the end of each half term to consolidate learning and assess progress. They will be given a grade for each. During their Mock Exam week, they will sit a full paper which will be graded.</p>
SPRING TERM	<p>Methods of production: Students will learn about scales of production, covering one-off, batch, mass and continuous considering the advantages and disadvantages of each. Students will explore these through a mini-practical task, and then build on their findings.</p> <p>Within this, students will also consider quality control and monitoring, including tolerances, computer-aided testing, monitoring quality, and Total Quality Management.</p>	<p>NEA prototype manufacturing continues.</p> <p>Testing and evaluation.</p>	<p>HOMEWORK IN YEAR 13</p> <p>Homework plays a very important role in helping students to develop links between theory and practical work. Homework tasks will be set in accordance with Edexcel guidelines for the completion of areas of the students NEA tasks at home. Work will be marked using the assessment criteria set out for the NEAs by Edexcel. Homework's will also support theory lessons and will be set in relation to topics being covered. It is vital that all deadlines set for completion of work are met.</p>
SUMMER TERM	<p>Modern manufacturing methods and systems: These topics build students' knowledge of manufacturing methods used in industry. Students will learn about important scheduling and logistics planning, robotics and how these are used in assembly lines alongside automated guided vehicles and storage and retrieval systems. They will cover a wide range of manufacturing systems, such as flexible manufacturing, lean manufacturing, just-in time systems and quick response. Within this students</p>	<p>NEA prototype manufacturing.</p>	<p>REVISION FOR ASSESSMENTS IN YEAR 13</p> <p>Students are encouraged to produce revision materials after each topic is completed to assist with the revision for their final A level examination. To complete their revision materials students can use their exercise books and other websites e.g. Technology Student and Edexcel website to view the full specification. Students can also view past papers on here to aid their revision.</p>

will consider use of standard components and data management systems to help run and maintain these systems.

TOPIC 4

ENRICHMENT THEMES IN YEAR 13

Consumer rights legislation:

Students will learn about a number of Act's and their implications for consumers and manufacturers. In this topic they will also consider marketing strategies, how they are analysed and reviewed and how the data is applied, alongside costing and modelling of projects.

Students will learn about protecting intellectual property and the rights of designers, inventors and companies.

Alongside this, they will explore the implications to designers, manufacturers and consumers by looking at British, European and International standards.

SMSC and British Values: Please see The Creative Designs Department's SMSC Document. Throughout the course students will discuss various Product Design related careers and what skills are linked to real jobs in the industry. This will be driven by certain aspects of the specification content. Cultural Capital: Cultural Capital: Students will study a wide range of designers from a variety of backgrounds, and will also view and study different social, economic and cultural groups from a variety of backgrounds so that they can be encouraged to emphasise and relate to others demonstrating that they can also achieve their aspirational dreams irrespective of their own background. Extra-curricular lessons will also run every week to help support students with their theory, NEA and practical work and it is essential students use these facilities to reach their potential grades.

Topic 5

Further processes and techniques:

Strategies, techniques and approaches such as user-centred design, circular economy and systems thinking will be explored. Students will also consider project management strategies, including critical path analysis, scum and Six Sigma.

Topic 6

Maths:

A range of maths is covered over the 2 years, including trigonometry, area, volume, waste and costing, which are applied to a design and technology context

Topic 7

Revision:

Students will have covered all areas of the specification by February half term. The time between then and exams will be spent revisiting and revising key sections, as well as developing exam technique and report style writing.

All topics can be reviewed, but key topics highlighted are; materials, design movements, translation questions,

manufacturing processes, maths and sustainability		
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Where Next?

Final A level results will be released in August.