KS4 Curriculum Overview 2024-25

**Subject: Design Technology**

Rationale of KS4 Curriculum: Product Design

During KS4, Product Design students will develop a much deeper understanding of the properties of the objects they come into contact with on a daily basis. Through working with materials and creating products, students come to appreciate and respect the complex planning process behind these items.

Students will be encouraged to demonstrate their understanding that all design and technological activity takes place within contexts that influence the outcomes of design practice, and they will begin to develop realistic design proposals as a result of the exploration of design opportunities and users’ needs, wants and values.

They will use imagination and experimentation when designing and develop the skills to critique and refine their own ideas.

They will communicate their design ideas and decisions using different media and techniques, as appropriate for different audiences at key points in their designing and develop decision making skills, including the planning and organisation of time and resources when managing their own project work.

Students will develop a broad knowledge of materials, components and technologies and expand their practical skills to develop high quality, imaginative and functional prototypes. They will be encouraged to be ambitious and open to explore and take design risks in order to stretch the development of design proposals, avoiding clichéd or stereotypical responses. They will consider the costs, commercial viability, and marketing of products and demonstrate safe working practices in design and technology. Students use key design and technology terminology including those related to: designing, innovation and communication; materials and technologies; making, manufacture and production; critiquing, values and ethics.

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| Sequence of Learning: | | | |
| KS4 | Term 1 | Term 2 | Term 3 |
| Year 10 | Core technical principles • new and emerging technologies • energy generation and storage • developments in new materials • systems approach to designing • mechanical devices • materials and their working properties. | Selection of materials and components • forces and stresses • ecological and social footprint • sources and origins • using and working with materials • stock forms, types and sizes • scales of production • specialist techniques and processes • surface treatments and finishes. | Investigation, primary and secondary data • environmental, social and economic challenge • the work of others • design strategies • communication of design ideas • prototype development • selection of materials and components • tolerances • material management • specialist tools and equipment • specialist techniques and processes Plastic / card-based design and manufacture practical project. |
| Year 11 | Start of Non-Examined Assessment(NEA)  This is a design and make project worth 50% of the GCSE Grade  Contexts for NEA set by WJEC | Completion of NEA.  Preparation for GCSE Examination | Preparation for GCSE Examination |