



CURRICULUM OVERVIEW

DESIGN & TECHNOLOGY

(PRODUCT DESIGN, TEXTILES, ENGINEERING DESIGN, ENGINEERING, FOOD PREPARATION & NUTRITION AND FOOD SCIENCE & NUTRITION)

Key Stage 3 Curriculum Milestones

By the end of Year 7 students will be able to:

- Use the correct equipment to communicate ideas through the means of sketching, rendering and annotations.
- Safely and accurately use a range of specialist tools, equipment and machinery within Product Design & Textiles.
- Understand where materials originate from that they are using in their products.
- Be creative and innovative to design products for a user.
- Know the basic function of each of the five nutrients and their sources.
- Identify basic cooking equipment and how to use them safely.
- Demonstrate the 4Cs of food hygiene and how to reduce the likelihood of food poisoning.

By the end of Year 8 students will be able to:

- Build on their sketching/drawing skills, to communicate ideas through the means of sketching, rendering and annotations.
- Draw upon opinions and feedback from their peers to develop the ideas/solutions to the problems set out.
- Select from and use specialist tools, equipment and machinery precisely within Product Design & Textiles.
- Draw from knowledge of how designers use different inspiration to design new ideas.
- Solve real-life problems with creative and innovative ideas.
- State and explain the consequences of food production on the environment.
- State and explain the origins of ingredients.
- State and explain some of the changes that occur to food when it is cooked.

By the end of Year 9 students will be able to:

- Manufacture products accurately using a working drawing.
- Develop design proposals as a result of exploring users' needs, wants and values.
- Understand the importance of sustainability when designing and manufacturing products.
- Explain how ingredients are processed into foods.
- Explain why some people have special diets and how that affects their food choice.
- Understand the need for and demonstrate effective food styling.

Key Stage 4 Curriculum Milestones

By the end of Year 11 students studying Level 1/Level 2 Engineering Design will be able to:

- Develop independence and confidence in using skills (gained in KS3) that would be relevant to the Engineering Design and Development sector.
- Develop and apply CAD skills to generate a range of Computer Aided Design drawings.
- Analyse problems in design terms through practical experience of solving such problems, including designing and modelling designs to meet a design brief.
- Think creatively, innovatively, analytically, logically and critically to respond to real-life contexts.
- Draw upon knowledge from KS3 and build on this to understand and apply the fundamental principles and concepts of Engineering design, including the design process, types of drawings, and influence on design.
- Explain the different stages of the iterative design process, recognising the cyclical nature of this approach.
- Understand and apply how they can evaluate designs through product disassembly and the process of using product analysis.

By the end of Year 11 students studying Level 1/Level 2 Hospitality and Catering will be able to:

- Demonstrate confident and safe cooking skills in a kitchen, cooking a variety of food commodities whilst using different cooking techniques and equipment.
- Understand the hospitality and catering provision.
- Understand how hospitality and catering providers operate.



- Understand health and safety in hospitality and catering.
- Understand food safety in hospitality and catering.

Key Stage 5 Curriculum Milestones

By the end of Year 13 students studying Level 3 AAQ Engineering will be able to:

- Develop an understanding of static and dynamic forces in a range of engineering contexts.
- Develop an understanding about electrical/electronic principles, through direct and alternative current applications, analogue and digital systems as well as programmable systems and electrical efficiency.
- Develop an understanding of the necessary mathematical techniques used in the engineering industry.
- Develop an understanding of what is represented by different material properties, the types of material and their relative properties and how these properties can be affected by different processing techniques.
- Analyse existing products to see how successful they have been and to identify areas of improvement.
- Utilise a product analysis to understand the materials, manufacturing processes, electronics and aesthetic factors that need to be made before a product can be manufactured.
- Understand how decisions can help engineers prototype their new products and test them with potential users.
- Produce engineering CAD drawings, mechanical prototype and a prototype of an electronic circuit.
- Evaluate manufactured prototypes to see how successful they have been.

By the end of Year 13 students studying Level 3 Diploma in Food Science & Nutrition will be able to:

- Develop an understanding of the nutritional needs of specific target groups.
- Plan and cook complex dishes to meet specific groups nutritional needs.
- Understand that food hygiene is an essential requirement for anyone who handles food in an industrial or domestic situation.
- To make informed dietary choices based on the understanding of nutritional requirements for a balanced diet.
- Apply dietary health and well being knowledge to solve problems including a plan of action which fully addresses health and safety factors to ensure any food prepared is safe to eat.
- Identify hazards and minimise risks when producing food to meet the nutritional needs of specific groups.
- Work independently to develop skills of project based research, development and presentation.
- The ability to work alongside peers and other professionals, in a professional environment.