



Curriculum

Newsletter

TECHNOLOGY

Technology is an inspiring and rigorous subject allowing students to explore a range of material areas from timber and polymers to food and chemical science. Using creativity and imagination, students design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Technology education encourages students to become resourceful, innovative, enterprising and capable.

Curriculum intent

Technology aims to provide a curriculum which will allow students to become motivated and confident learners, who can work independently and as part of a team. Students are supported in developing technical and practical competencies as well as the wider soft skills valued by employers. Our priority is for students to become creative thinkers and problem solvers, who are not afraid of making mistakes and have the confidence and resilience to succeed in education and the world of work beyond. Through following the curriculum, we hope our students will become responsible citizens who make a positive contribution to society.

We firmly believe that students learn best by 'doing' and by allowing them to experiment and take risks, in a safe and positive learning environment. This is achieved through imaginative teaching that embraces new technologies and modern industrial processes, whilst retaining the best of traditional practices. At the heart of this, is the desire to deliver a curriculum in which

students' express creativity through designs and produce high quality outcomes.

The curriculum is closely linked to careers, allowing students to investigate designers and their work, especially British designers; in doing so, students raise their aspirations and motivation to learn. There is a focus on transferable skills throughout the technology disciplines that improve employability and confidence in readiness for the world of work. In Food Technology students learn about and become part of the 'kitchen brigade'; in Design Technology collaborative skills are honed as they work with a client.

Throughout the curriculum students explore the importance of sustainability in technology through responsible resource management and innovative design. Through a creative and forward-thinking curriculum, we hope to inspire students who are responsible for the social, environmental, and economic impact of their decisions, with the confidence to affect positive change in others too.

Students develop the ability to improvise, adapt and overcome problems through problem solving activities in a range of contexts. They feel supported and secure in making mistakes in order to learn from experiences and build resilience. Through all disciplines in Technology, students have the opportunity to combine their designing and making skills with knowledge and understanding in order to design, make, analyse and evaluate products of high quality.

Technology maintains strong links with the wider curriculum, incorporating Mathematics, Science, Art, Business Studies, Health and Social Care, PE, Geography and History. This allows students to develop a set of transferable skills they can enjoy

in school and use in their future working lives. Particularly in Food Technology, the curriculum is mapped against the government's RSE and Health Education guidelines to support students in learning about Healthy Eating, Physical Health and Fitness, and Health and Prevention.

Key Stage 3 Curriculum

In Year 7, students begin their Design Technology journey by learning about the iterative design process and the fundamental principles of design, make, evaluate that will support them in a range of creative activities and independent projects throughout KS3 and into KS4. Students begin year 7 by developing the graphic communication skills needed to communicate their ideas, and learning about health and safety in technology so that they can work safely in the workshop. Students have the opportunity to develop Computer Aided Design (CAD) and Computer Aided Manufacture (CAM) skills, alongside practical woodwork skills as they explore timbers and practice joining methods. Students work with papers and boards to better understand their properties and develop their modelling and designing skills.



In Year 8, students build on their knowledge and skills developed in Year 7, tackling more challenging theory content and practical skills which require the management of multiple components. Students explore the environmental consequences of food choices by looking at food provenance and sustainability and develop a wide range of techniques in preparation and cookery of commodities. They will also develop drawing skills established in Year 7 by applying industry standards and conventions. They will learn about

industrial manufacturing processes through design and make projects. Students expand their materials knowledge by learning about timbers and polymers, as well as a wider range of practical CAD/CAM techniques before exploring the 'real world' of design as they consider the needs of others, including ergonomics and anthropometrics.



In Year 9, students develop their knowledge of nutrition through learning about the structure of nutrients and how life-stages and special diets influence nutritional needs. Complementary to regular practical lessons which allow students to develop preparation and cooking skills, students will learn about the science of cooking and the impact on nutrient value of different techniques so that they can make informed choices for their own dishes. Students will also deepen their food safety and hygiene knowledge from Years 7 and 8. They will also undertake an 'engineering challenge' on the topic of bridges; allowing for the advancement of existing knowledge and skills alongside new learning regarding structural engineering. Students have further opportunities to work with CAD/CAM and take part in team work; they use resistant materials to allow them to explore and develop new ways of working and realising design ideas. Through exploring 'the work of others', students are introduced to some of the most influential designers and design movements in modern history.



Key Stage 4 Curriculum

In Year 10 students can study WJEC Level 1/2 Hospitality and Catering where they will gain a comprehensive knowledge of nutrition, cooking methods and preparation and cooking skills. They will go on to explore the hospitality and catering industry, including provision and operation. In addition to food safety, students will learn about wider health and safety issues in hospitality and

Throughout Year 10, students will practice and develop advanced preparation, cooking and presentation skills and techniques

In Year 11 students will complete their WJEC Level 1/2 Hospitality and Catering qualification, where they will gain knowledge and understanding of the importance of nutrition and how to plan nutritious menus. They will learn the skills needed to prepare, cook, and present dishes. They will also learn how to review their work effectively and evaluate their cooking skills.

Students also demonstrate knowledge and understanding of the hospitality and catering industry by applying their knowledge of:

- Hospitality and catering provision
- How hospitality and catering providers operate
- Health and safety in hospitality and catering
- Food safety in hospitality and catering



Students can also choose to study AQA GCSE Design & Technology; in Year 10 students study the 'Core technical principles', 'Specialist technical principles' and 'Designing and making principles' of design and technology in order to broaden their awareness and understanding of the subject. They undertake a variety of mini projects focusing on CAD/CAM and practical skills in order for them to develop the confidence and experience to manage their own design and making projects in Year 11.

In Year 11 students begin their GCSE coursework and build on the knowledge and skills in 'Designing and making principles' acquired in Year 10 and at KS3. Alongside this they develop their theory knowledge from Year 10 by studying the 'Core technical principles' of design in more detail and breadth, and by focusing on two material areas as they study 'Specialist technical principles' so that they can apply this to solving problems and tackling their written assessment.



Key Stage 5 Curriculum

Level 3 Food Science and Nutrition:

In Year 12, students can study WJEC Level 3 Food Science and Nutrition which enables them to demonstrate an understanding of the science of food safety, nutrition and nutritional needs in a wide range of contexts, and through on-going practical sessions, to gain practical skills to produce quality food items to meet the needs of individuals. The course offers exciting, interesting experiences that focus on applied learning, i.e. through the acquisition of knowledge and understanding in purposeful, work-related contexts, linked to the food production industry.

In Year 13 students complete develop their understanding of the science of food safety and hygiene; essential knowledge for anyone involved in food production in the home or wishing to work in the food industry. Students can also choose one of two optional units including:

Experimenting to solve food production. This unit will provide you with an understanding of the scientific properties of food and how these properties contribute to the changes that occur in food.

Current issues in food science and nutrition. This unit will develop the skills needed to plan, carry out and present a research project on current

issues linked to food science and nutrition. This could be from the perspective of a consumer, food manufacturer, caterer and/or policymaker.



A Level D&T: Product Design:

In Year 12 students can also study AQA A Level Design and Technology: Product Design which allows students the freedom to explore design problems practically and theoretically and tackle them with the aim of developing solutions that improve and enhance the lives of others. Few subjects allow for students to explore such a plethora of activities as product design, using a range of equipment, processes, and techniques.

In Year 12 students focus on developing confidence in the workshop and building an in-depth knowledge of materials and processes, designing and the development of prototype design concepts, through a selection of mini projects and assessments. This aims to prepare students for the exams and controlled assessment in Year 13.

In Year 13 students embark on their final major project which requires them to develop a substantial portfolio worth 50% of the final grade. This is an opportunity for students to showcase their designing and making skills and their

understanding of designing for specific markets and individuals.

Students are required to make a working prototype model to showcase their design solution after carrying out focussed research and design development. Exam theory continues alongside this in preparation for the final examinations at the end of the course.



Studying technology can open doors ...

Food Science and Nutrition is an Applied General qualification designed for those wanting to pursue careers or learning in related areas such as the food industry production. The range of units available would support learners' progression from study at Level 2; in particular, GCSE`s in Food and Nutrition, Hospitality and Catering, Biology, Physical Education and Humanities.

By studying for this certificate alongside other relevant qualifications e.g. GCE Biology, Physical Education, Sociology, learners will gain the required knowledge to use the qualification to support entry to higher education courses such as:

BSc Human Nutrition

BSc (Hons) Public Health Nutrition

BSc (Hons) Food Science and Technology

There are a wide range of careers in the food science and nutrition sector that can be explored here:

<https://careerscope.uk.net/>

<https://nationalcareers.service.gov.uk/search-results?searchTerm=food+science+and+nutrition>

Design and Technology at A level prepares you well for a world of opportunities in higher education and careers. Some examples include but are not limited to:

- Architecture, including interior architecture and landscape architecture.
- Product design
- Industrial design
- Interior design
- Graphic design
- Engineering
- Prosthetics technician

There are also a wide range of higher-level apprenticeships in design and technology

Our subject alumni include individuals who have found employment in the field of design and technology including graphic design, and most recently, a student studying fashion marketing in London which he was able to do because of broad design theory and critical thinking skills developed on the course.