

Welcome to the Technology Department

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Subject Overview

Technology prepares students to participate in today's and tomorrow's rapidly changing technological world. Through Technology, all students can become critical and informed users of products, and become designers and innovators. Students will learn to think and do something creative to improve the quality of life for everyone.

Technology is about students becoming self-motivated, creative, problem-solvers, and allows them to work both as individuals and as members of a team. Students will look for needs, wants and opportunities and respond to them by developing a range of design ideas and by making and evaluating products and systems. In Technology students will combine practical skills with an understanding of aesthetics, social issues, environmental issues, function, and industrial practices. Students will consider the use and effects of present and past technology.

Key Stage 3: Years 7 and 8

In Key Stage 3 the department follows a modular design process led approach through an in-house designed curriculum which covers Product Design, Graphic Design, Electronics, Food Technology, Textiles Technology and Engineering. The subject is delivered in three hours per week for Year 7 and two hours per week for Year 8.

Key Stage 4: Years 9, 10 and 11

In Key Stage 4 students can choose to take one GCSE Technology course from the two that are on offer.

In Years 9, 10 and 11 - one GCSE can be taken from Food Preparation and Nutrition (OCR) and Design and Technology (specialising in Product Design or Graphic Design) (AQA).

Year 9 and 10 students will complete investigations and assignments. Year 11 Technology students will be following a design process NEA project module to complete the 50% coursework part of the examination. A 2.5 hour block of time is allocated in Years 9, 10 and 11.

Sixth Form

At Sixth Form the department offers two courses:

- A level Product Design (AQA)
- Level 3 Food Science and Nutrition (WJEC).

Teaching Aims and Objectives

Studying Technology will help students to:

- Be informed on matters of technology, which are useful in everyday life in our society and, for some students, needed for further study in Technology.
- Be conscious of the impact on their lives of the rapid change in our technological society, eg. the use of computers as a resource across the ability range, and the increased use of computer aided design and computer aided manufacture/machining.
- Have an appreciation of, and concern for, the effect of and the need to apply scientific knowledge to technical, economic, and social development.
- Use a rational approach in order to solve practical problems.
- Experiment with combining ingredients to design and make innovative and healthy recipes.
- Learn to predict consequences: that is, to relate cause and effect.
- Gain improved communication skills (comprehension, literacy, numeracy, and graphicacy).
- Exercise self-discipline, shown by students assuming personal responsibility for their actions as well as in their co-operation with others.
- Gain improved organisational skills while working both individually, and as individuals within a group.
- Apply scientific and mathematical principles in a technological environment and vice versa.

Course Information

Key Stage 3

Years 7 and 8: In Key Stage 3 the department follows a modular approach through an in-house designed curriculum which covers Product Design, Graphic Design, Electronics, Food Technology, Textiles Technology, and Engineering. The subject is delivered in 3 hours per week for Year 7, and 2 hours per week for Year 8. The tasks that are set throughout these two years follow the design process which builds on students' experience and allows for the progression of the individual by offering tasks and outcomes that are negotiated. Students work within a design process framework that starts with an initial problem and brief, and then goes on to design, make, test and evaluate a solution to that original problem and brief. The solution will be an outcome that is realised in appropriate materials, mostly chosen by the student. Additional short focused practical tasks are set at appropriate times over the year to offer a valuable enrichment to our programme of study.

In Year 7 students will rotate between 4 modules in the year:

- Product Design and Structures
- Textiles Technology
- Electronics/Graphic Design
- Food Technology

In Year 8 students will rotate between 4 modules in the year in preparation for GCSE:

- Engineering
- Product Design
- Graphic Design
- Food Technology

Key Stage 4

Year 9	Students can choose to take a Technology course in either: GCSE Food Preparation and Nutrition or GCSE Design and Technology. Most of the specification is taught during this year through investigations, assignments, minor projects and practical work.
Year 10	More of the specification is taught during this year through investigations, assignments, minor projects and practical work. The NEA coursework project is started during term 6 in the summer term.
Year 11	Two terms are spent completing the NEA coursework project/s up to Easter. The remaining time is spent on revision and preparation for the final written papers.

Sixth Form

Year 12	<p>The Product Design course encourages students to develop their graphical and presentation skills whilst concentrating on working with a variety of woods, metals and plastics with relevant tools, equipment and machinery to design and make products as solutions to design problems and briefs.</p> <p>In Year 12 Product Design students will cover the specification by undertaking practical and theoretical assignments to develop their skills, knowledge and understanding. During the last term of Year 12 students will start their NEA coursework project which consists of a design study which is turned into a high quality end product which can be tested against the original brief and specification.</p> <p>In Year 12 Food Science and Nutrition students cover a wide range of elements related to industrial food products and practices. This involves the use of food in a range of commercial applications and covers planning to meet nutritional needs, developing food production skills, ensuring food is safe, experimenting to solve food production problems and current issues in consumer food choice.</p>
Year 13	In Year 13, Product Design students continue with their NEA coursework project which consists of a folder and product solution.

Once the project is completed they will then prepare for the written exams taken at the normal exam times.

In Year 13, Food Science and Nutrition students cover a wide range of elements related to industrial food products and practices. The course involves the use of food in a range of commercial applications.

Homework Expectations (Including ICT resources and websites)

Students in Years 7 and 8 are set homework once a week. Students will be expected to complete the design process classwork and extend their knowledge and understanding through specific homework as part of each course they are studying.

GCSE students are set homework once a week to meet the demands of the course. The homework will include completing design based tasks, past paper exam questions and tasks related to the individual specification being taught. There may be occasions when more weekly homework is necessary.

A Level/level 3 students are expected to support their study with extra research and wider reading. During the NEA coursework project phase students are expected to allocate additional time at school and at home to complete outstanding coursework.

Additional homework resources can be found at:

<http://www.howstuffworks.com/>

<http://www.technologystudent.com/>

<http://www.bbc.co.uk/schools/gcsebitesize/design/>

<http://www.design-technology.info/revisionguides/>

Extra-Curricular Opportunities

Regular after-school activities for all technology and engineering students take place. These include Technology clubs for KS3 and KS4 students to extend and complete their NEA coursework and classwork. Clubs in Food Preparation and Nutrition and Product Design/Graphic Design take place on Tuesdays and Thursdays after school and provide an opportunity for students to extend and complete their classwork and extend their coursework.

Marking and Assessment

Key Stage 3

Dialogic teacher/student marking/feedback/discussion forms the central assessment structure of our marking and assessment which also includes formative and summative assessment. This will inform the progress being made by each student and the areas where improvements are required. We will assess students in every way possible – verbally and written (end of product evaluation), formally and informally - and at every possible occasion to ensure progression over time and considering age-related expectations across the subject.

At the start of every Key Stage 3 module students will target set the areas they wish to improve on. The targets can be from any attainment target within the Technology National Curriculum, or be any target related to other aspects of their work. These targets are recorded on a purple achievement sheet and form part of the folder work for each module. This target-setting will be reviewed at the end of each module, and relevant progress recorded on department A3 record of achievement sheets. Formative dialogic assessment plays an important part in guiding students towards improving the quality of what they are producing, and folders are seen on as many occasions as possible during a module of work. Written feedback notes are provided for students to respond to and students transfer National Curriculum assessments onto their own record sheets at the end of a module to enable an “at a glance” overview of their own progress. This will also be built up over the key stage. The assessment of Technology work follows school policy on the assessment, recording and reporting of students work; we formally assess against “age-related expectations” – what we expect students at this stage to know, understand or be able to do.

Technology subject staff will mark a module of work and due to the specialist nature of what is covered and achieved not every module will fully cover the complete design process. It is therefore possible for particular attainment target statements to be covered in particular modules due to the nature of the module.

All classwork and homework in Key Stage 3 is marked and graded to reflect National Curriculum achievement. Awards can be allocated to students at all levels as a continuing reward for effort and quality, and are based on the expectations for age-related expectation and progress.

At the end of each year in Key Stage 3 students will sit a “base line” test to determine their knowledge and understanding of the course so far alongside the end of year exam. The “base line” testing is seen as preparation for taking written papers in Key Stage 4. Students will also sit an end of year exam which will test generic design knowledge and more subject specific knowledge.

Each achievement is recorded on A3 departmental record sheets, which show exactly what each student has achieved alongside his or her progression.

Key Stage 4

At Key Stage 4 a grade from 9 - 1 is used to assess each piece of work. In each case a qualifying comment is included, along with an overall understanding fed back to the student of what was required in order to show an improvement and therefore any progress that has been made. This will be responded to by the student who will ensure that further progress can be made with improvement over time.

Sixth Form

At Key Stage 5 a grade from A* - E is used. In each case a qualifying comment is included, along with an overall understanding fed back to the student of what was required in order to show an improvement. This will be responded to by the student who will ensure that progress can be made with improvement over time.

Examinations

GCSE

[AQA Design and Technology](#)

[OCR Food Preparation and Nutrition](#)

Students take one examination and produce one Controlled Assessment (NEA) over the three-year period (two are required for Food Prep and Nutrition).

Paper 1 - (2 hrs or 1 ½ hrs) applied theory and practice. Worth 50% of the GCSE

Paper 2 - Controlled Assessment/Non Examined Assessment: one controlled assessment (two for Food Preparation and Nutrition) worth, in total, 50% of the final grade.

Students should refer to each specification in detail to understand the content and examinations for each subject.

A Level

[AQA Product Design](#)

[WJEC Food Science and Nutrition](#)

Students should refer to each specification in detail to understand the content and examination structure for each subject.