

Departmental Curriculum Statement 2022-23 Design and Technology

Curriculum Intent Statement

The aim of the Design and Technology curriculum is to provide an exciting opportunity for students to develop technical knowledge and skills which support forward thinking and creativity, independence and confidence. A practical, problem-solving approach ensures that the Design and Technology curriculum is both challenging and relevant and that students are prepared for the world of work. This links to the wider STEM strategy designed to accumulate students' cultural capital and to help empower future generations through science, technology, engineering and mathematics and to grow a dynamic, innovative economy. It is imperative that we equip our students to harness the power of technology to transform our world for the better.

At KS4&5, students can select from a wide variety of specialist pathways which open-up a fantastic range of progression opportunities. With technology related employment currently one of the fastest growing current occupations and with an anticipated ten million British jobs to be taken over by computers and robots over the next 20 years, the Design and Technology curriculum ensures that a wide range of progression opportunities are made available to all Cowley students irrespective of ability or SEND status.

Curriculum Implementation Statement

The KS3 course is designed to be challenging and relevant and provide equality of opportunity to all students irrespective of gender or background. Throughout KS3 students will be increasingly challenged to use new technologies and techniques, work with an ever-wider range of materials and ingredients and improve their understanding of manufacturing processes. Through this approach, students are required to regularly revisit and build upon an ever-increasing body of knowledge, know more, remember more and improve their overall mastery of the subject. Students experience traditional manufacturing techniques as well as more modern processes such as CAD/CAM, 3D printing, laser cutting and microcontrollers. KS3 Food Studies equips pupils with the knowledge, understanding and skills required to cook and apply the principles of food science, nutrition and healthy eating. Our curriculum encourages students to cook and enables them to make informed decisions about the food they eat now and in later life.

At KS4, students are able to specialise in one or more of the following courses: 9-1 GCSE Design Technology, L2 Art and Design (Textiles and Graphics), L2 Construction, L2 Engineering and L2 Hospitality. At KS5, students are able to specialise in one or more of the following courses: L3 BTEC National Art and Design (Fashion and Graphics), L3 BTEC National Engineering and L2 Construction (including a 2 day per week work placement). All courses are delivered by dedicated, specialist staff and are tailored to prepare learners for a career in their chosen sector.

There is a strong emphasis throughout on 'Remembering More and Knowing More' with varied questioning, problem solving and formal interim testing to check students' retention and understanding of curriculum content. Dedicated, inspirational and experienced staff have high expectations, ensure that Cowleian values are embedded throughout, and instil the value of technology and how it plays an ever-increasing role in the world around us.

Curriculum Beyond the Classroom

Students regularly use the specialist rooms and resources for independent study and to develop a better understanding of Design and Technology skills and knowledge. Wherever possible, work is set and delivered through Microsoft Teams which allows students to continue to work independently from home, access resources, submit work and receive regular feedback from specialist staff. Lunchtime and afterschool revision and coursework catch up clubs are offered to all KS4 students. In Food seasonal cookery sessions include Christmas cake club and a festive favourites KS3 club that runs during the autumn half term. Also, charity bake sales and afternoon teas throughout the year, notably Macmillan. KS4 pupils are visited by an environmental health officer as part of their exam preparation and pupils visit the restaurant at St Helens College as inspiration for their coursework.

Students have opportunities to be involved in workshops with designers, visits to museums and galleries and to the Jaguar Land Rover car plant in Speke. With the development of electric and driverless vehicles, a link to car manufacturing is essential given the likely future opportunities for employment within this sector. Year 12 Construction students undertake 2 days' work experience per week across a wide range of trades including bricklaying, plumbing, painting and decorating, plastering and carpentry. Year 13 Engineering students visit industrial environments related to current topics.

Subject Expertise

The department comprises highly experienced, Design and Technology specialists in each of the bespoke areas of Construction, Engineering, Food, Graphics and Textiles. Staff have experience of a wide variety of courses including GCSE 9-1 Design Technology, L2 BTEC Tech Award and L3 BTEC Nationals. Some staff have industrial experience, and all staff hold 'Design and Technology CLEAPPS' Certification/Health and Safety DATA certificates. Delivery of KS3 microcontrollers and systems is through specialist Computing staff.

The department is widely recognised as the lead school within the Borough and regularly provides guidance and expertise to other schools, sharing good practice and resources. Staff receive regular subject specific CPD from awarding bodies and leading software and hardware manufacturers such as Autodesk and Ultimaker. This is vital to the ongoing development of the department. The Head of Department regular attends local network meetings with other Technology departments in the area to share good practice and information to do with our subject.

Destinations

Students are made aware of the progression routes available including working within Design and Technology sectors. Staff regularly receive the latest information about new courses, work experience and employment opportunities which are passed on to students as potential progression routes. Students are supported in creating an interview portfolio for creative subjects and with application processes. Having followed specialist pathways within Design and Technology courses, students have progressed onto a wide range of apprenticeships, college courses in catering, technology related professions and higher education courses at Russell Group universities linked to engineering, software development, creative design and other STEM related areas.