

# Bourne

Community College

Kindness Respect Determination



Welcome to Design Technology  
&  
Engineering



# General Overview

We offer a high-quality Design and Technology curriculum that inspires students to succeed and excel in a range of design and make activities utilising traditional disciplines and modern technology rich approaches. A design and technology student at the Bourne Community College Will:

- Develop competency and confidence in a broad range of design and make activities.
- Explore and understand material characteristics and applications.
- Develop problem solving skills.
- Encourage students to be creative and innovative.
- Develop electronics and CAD/CAM skills.
- Develop communication skills, resilience, accuracy, and teamwork skills.

All students study Design Technology on a rotation system in years 7, 8 and 9 with Food and Nutrition Technology. In year 9 students can opt to study GCSE Design Technology or NCFE Engineering both of which are popular courses at the Bourne Community College, where our students have achieved outstanding examination results every year since 2021. After key stage 4 students can go onto study Product Design, Industrial Design, Engineering, Architecture, Furniture Design, Interior Design, Theatre Set Design and any careers requiring creativity and problem solving skills and many of our students soon to study design and engineering related courses when they leave Bourne at the end of the year.

## Our Curriculum

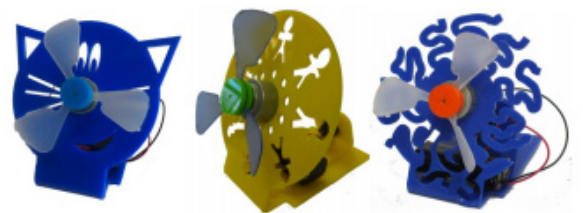
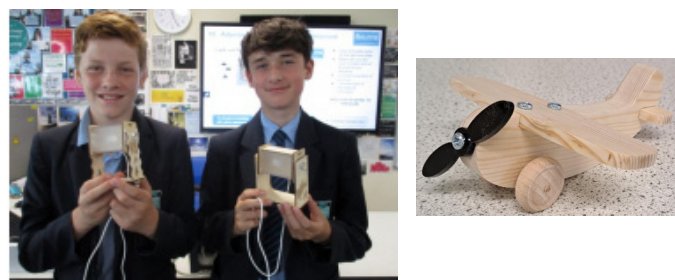
### YEAR 7

Students start by making a night light inspired by a Pacman character. This is followed by making an animal toy. Whilst doing these projects students learn to solder, learn about electronics, and learn to work with traditional skills whilst being introduced to CAD/CAM at the same time. Students also develop their Textiles skills, designing and making a soft toy, and in the summer term they learn about structures.



### YEAR 8

Students keep developing their CAD/CAM skills making an adjustable light that is drawn in CAD, laser cut, and assembled with some soldering involved too. In their second project, students learn about mechanisms making a toy from acrylic. Students also complete a couple of team projects during the year including a small land yacht powered by a fan, and make a small wooden toy plane.



### YEAR 9

Students design and make a fan influenced by the design work of Alessi. They make keyrings using the process of pewter casting. They learn about different graphical presentation skills and finish the year with a project on architecture.

#### Design Ideas

**Objectives**

- 1. To design a school building that is functional and aesthetically pleasing.
- 2. To use CAD/CAM software to create a 3D model of the building.
- 3. To create a physical model of the building using laser cut acrylic.

**Materials**

- Acrylic
- Wood
- Paint
- Glue
- Wool

**Resources**

- Internet
- Books
- YouTube
- SketchUp

**Feedback 1:** I like the design that has a parking well but could you make the building more interesting.

**Feedback 2:** I like the design that has a parking well but could you make the building more interesting.

**Feedback 3:** Could you add a parking well to the back of the first design as that would make it the best?

**Evaluation:** I like the design that has a parking well but could you make the building more interesting.

# GCSE Design Technology (AQA Exam Board)

## Year 10

Students develop their design and making skills further with a small range of projects. Students have to cover some theory every week to support the designing and making with an understanding of core technical principles including new and emerging technologies, energy, modern and smart materials, systems, mechanisms and materials. Students cover most exam theory in year 10.



## Year 11

Students must complete a non-examined assessment which counts for 50% of the GCSE. The design brief for this is changed every year by the exam board but examples of projects could be to design and make a lamp, an MP3 player, a radio or herb planter. This includes a 20 page design folio and a prototype of a final design.



LED Light

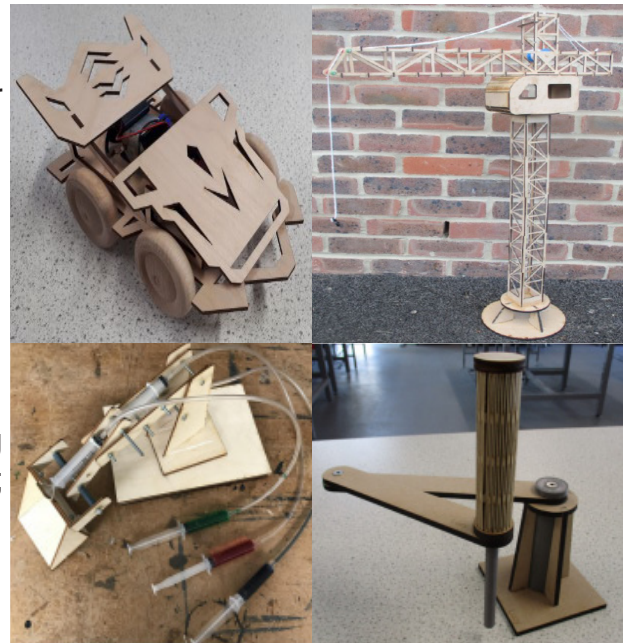


Radio

# NCFE Engineering

NCFE is a technical qualification which was launched at the Bourne Community College in 2019 which has run very successfully and with great popularity with our students.

The course is designed to provide learners with the skills, knowledge and understanding of the applied study of good engineering practices and an understanding of working in the sector. Students learn about engineering disciplines; the science and maths that is applied in engineering; how to read engineering drawings; properties and characteristics of engineering materials; engineering tools; equipment and machines; production planning techniques; and processing skills and techniques applied to materials for a Manufacturing task equipment.



Hydraulic Excavator

Robotic arm model

# Activities & Visits

Within Design Technology we offer after school activities including:

- STEM club with Mr Ellis
- GCSE Design Technology and NCFE Engineering extra with Miss Newman
- Visits to Harry Potter film studio
- Silverstone museum
- Goodwood festival of speed
- We race cars built by our students at Greenpower event across the country



# Staff

## STAFF

Miss J Newman

Leader of Design Technology

Mr D Ellis

Extended leadership and ICT STEM Co-ordinator

Mr S Kemp

Design Technology Technician



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