

We are extremely proud of the work that our students produce and the wide range of scientific skills they develop as our courses are taught in a very practical way.

Our teachers come from a wide range of industrial backgrounds and are able to offer students real-life context to learning. Graduating students have gone on to study Medicine; Veterinary Science; Pharmacy; Radiography; Electrical, Aerospace, Automotive and Mechanical Engineering; Biomedical Sciences and lots of other courses, many at Russell Group universities.

We encourage our students to take up a range of opportunities, including NHS experience through our volunteering links; becoming part of national data collection on climate change with the Peak District National Parks or gaining one of the prestigious placements or with the Nuffield Foundation working with university professionals on real projects.

### Skills and Qualities

- Problem solving
- Attention to detail
- Communication
- Accuracy
- Creative thinking

### Career Paths

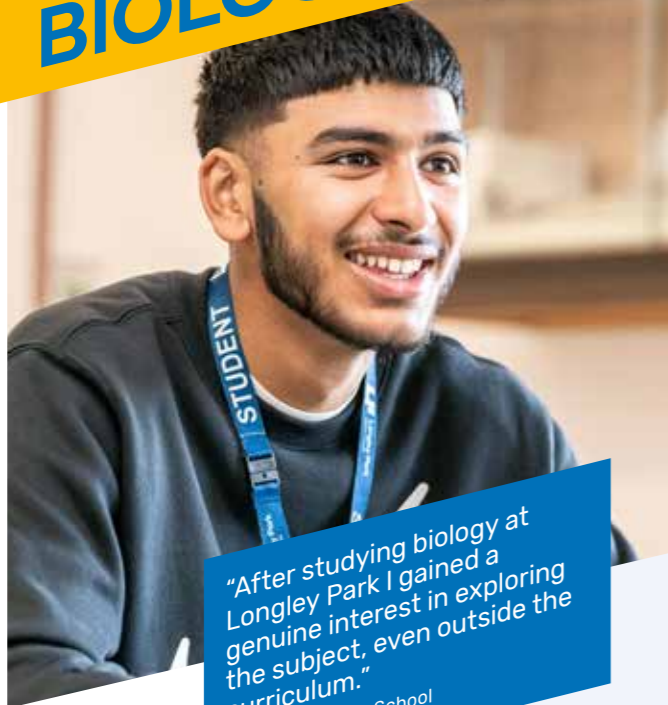
- Doctor
- Nurse
- Therapist
- Counsellor
- Engineer
- Technician
- Energy managers Landscape and Forestry managers
- Teacher

### Labour Market Info

Engineering and technician roles are in high demand in the UK - 124,000 needed each year (Engineering UK).  
Nationally the Health and Social Care sector will need up to 650,000 more workers by 2035 to meet growing demand for care and support.



# BIOLOGY



"After studying biology at Longley Park I gained a genuine interest in exploring the subject, even outside the curriculum."  
Katie - Silverdale School

## A LEVEL - 2 YEARS

Entry Requirements: 5 GCSEs at grade 4-9 including English, plus Maths and 2 Science GCSEs at 6

### What will I study?

Biology is related to many areas of our life including food safety, agriculture, medicine, sport and scientific research. You will learn about the nature of life from the molecules and chemicals that life is built upon to the way populations of the world's living organisms develop and live together. Biology is a very hands-on subject and there will be regular practical work in class. Your study will involve some dissection of animal and plant material. Data analysis also forms an integral part of the course so you need to be confident using Maths. If you are not studying A Level Chemistry, you will need to work with your Biology teachers to cover the basic biochemistry needed for this course.

### How will I be assessed?

Examination and practical endorsement.

### What can I do next?

Biologists can be found in many places, including medicine, dentistry, physiotherapy, veterinary medicine, laboratory work, forensics, pathology and nursing. Biology is also a well respected A Level for a wide range of non-science related courses and careers because it helps you to develop analytical, practical and investigative skills.

# CHEMISTRY



"Chemistry is amazing. From naming and drawing organic molecules, to maths and equations, this subject has it all."  
Abdulsalem - Fir Vale School

## A LEVEL - 2 YEARS

Entry Requirements: 5 GCSEs at grade 4-9 including English, plus Maths and 2 Science GCSEs at 6

### What will I study?

Chemistry allows you to learn more about the structure of the world around you through experiments and find out about the chemical reactions that we encounter every day, whether it be in breathing, baking or driving a car. You will study atomic structure, bonding and the periodic table. Other key topics studied include chemical kinetics, equilibrium and molar calculations. You will develop new practical skills in organic synthesis, extraction and analysis whilst being introduced to new topic areas such as Transition Metals.

### How will I be assessed?

Examination and practical endorsement.

### What can I do next?

Chemistry develops lots of skills that are relevant for employment or study at a higher level, such as problem solving, scientific method, practical work and use of number. Chemistry is essential if you want to study medicine, dentistry, pharmacy, forensic science or veterinary science at a higher level. Other popular choices for progression include chemistry, chemical engineering and biochemistry. Chemistry is often a desired choice for entrance to other science-based courses and occupations.

# PHYSICS

## A LEVEL - 2 YEARS

Entry Requirements: 5 GCSEs at grade 4-9 including English, plus Maths and 2 Science GCSEs at 6

### What will I study?

Physics gives you the opportunity to investigate and understand some of the fundamental laws of the universe, ranging from the tiniest particles of matter to vast star systems. You will cover topics such as mechanics, subatomic particle physics, electricity and theory of waves. You will also study topics which include gravitational, electrical and magnetic forces, nuclear and thermal physics and oscillations.

### How will I be assessed?

Examination and practical endorsement.

### What can I do next?

A Level Physics is a good starting point for further study of natural science and engineering related courses. It also supports progression into subjects such as medicine and radiography and is a good background for courses in many other fields, especially those that rely on numeracy and logical thought.

"I chose to study Physics because it is a subject that really interests me. I have always been intrigued by space and how things work and connect and Physics has helped broaden my understanding."

Lucy - Ecclesfield

# APPLIED SCIENCE

## BTEC LEVEL 3 EXTENDED DIPLOMA - 2 YEARS

Entry Requirements: 5 GCSEs at grade 4-9 including English, Maths and Science

### EQUIVALENT TO 3 A LEVELS

Can also be taken as a smaller qualification

### What will I study?

You will study all of the main sciences, Chemistry, Biology and Physics in detail. You will learn about how science knowledge and skills are used in a variety of scientific workplaces, analytical sciences and biomedical sciences.

### How will I be assessed?

Examinations and coursework.

### What can I do next?

Our BTEC Applied Science students have gone on to university to study gateway to medicine, chemical engineering, pharmaceutical science biomedical science, medical genetics, health and human sciences, human biology, biochemistry, podiatry, forensic science, biology, biosciences, genetics and molecular biology, microbiology and molecular biology, veterinary science, wildlife conservation, radiotherapy and radiography. Many of these students have gone to the prestigious Russell Group Universities. Students have also taken up apprenticeships including microbiology and surgical instrumentation.

"Applied science it's a very good course that allow you to learn a wide range of skills. The reason why I chose Applied science is because I have always been passionate about science."

Omar - Tipton School

# APPLIED SCIENCE



## BTEC LEVEL 3 EXTENDED CERTIFICATE - 2 YEARS

Entry Requirements: 5 GCSEs at grade 4-9 including English, Maths and Science

**EQUIVALENT TO 2 A LEVELS**

### How will I be assessed?

2 course work units and 2 examined units.

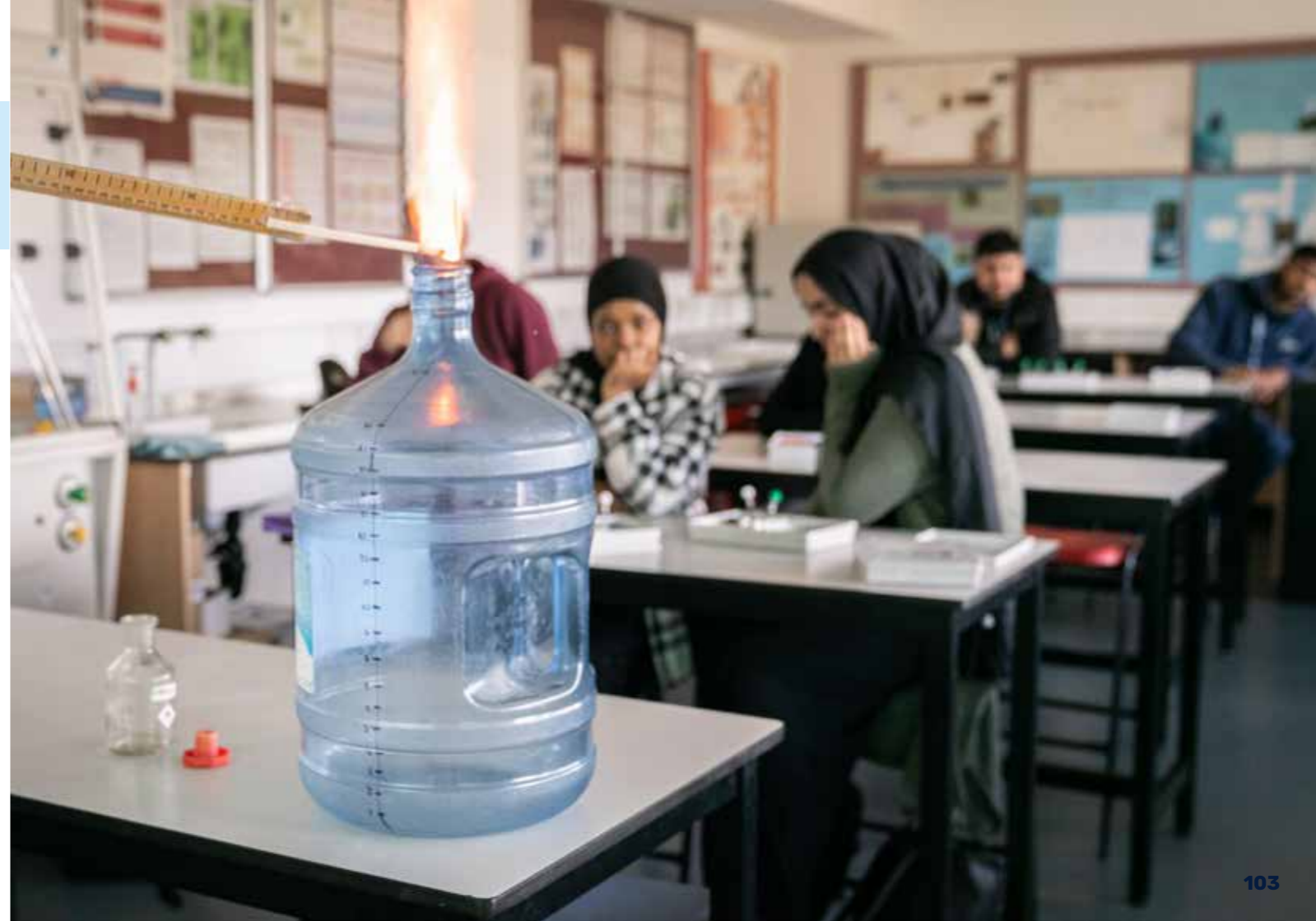
### What can I do next?

Depending on the combination of courses that you pick alongside this you would be well suited to several pathways. This course develops the transferable and analytical skills which are valued by higher education providers and employers. Typical routes from this course include; Engineering, Sports, Nutrition, Nursing and Healthcare, Biological and Physical sciences, and Environmental and Earth Sciences. Equally this course could be used to gain skills required for careers such as teaching, working in the civil service or public services.

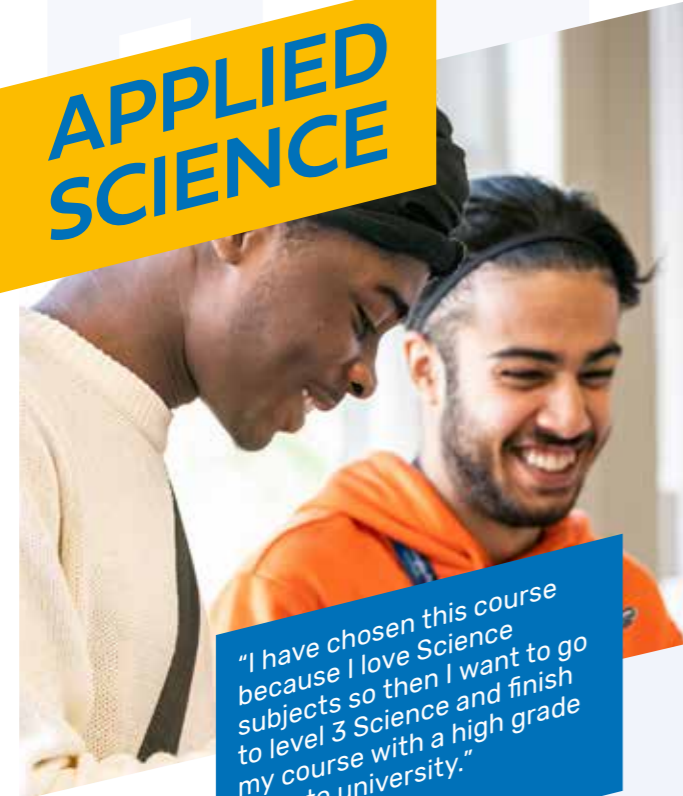


### What will I study?

You will study fundamentals of Science and how these are important in the scientific workplace. This course will build on your previous science studies covering aspects of all three Sciences (Biology, Chemistry and Physics). Including cells and tissues; genetics; atomic structure and chemical and physical properties and waves. You will also study a number of practical techniques required for any Science career. This course would be well suited to combine with other level 3 Sciences including; Engineering, Maths and Psychology, or will go alongside other BTEC's to compliment a suite of qualifications.



# APPLIED SCIENCE



"I have chosen this course because I love Science subjects so then I want to go to level 3 Science and finish my course with a high grade to go to university."  
Alisha - Fir Vale School

**BTEC LEVEL 2 EXTENDED CERTIFICATE - 1 YEAR**  
Entry Requirements: At least 2 Grade 3s at GCSE, including Science

## What will I study?

You will carry out experiments and learn how science is used in different jobs. The course covers Biology, Chemistry and Physics and the skills needed by scientists to collect, analyse and interpret data. Assignments are based on real applications of science in areas such as forensic science, food technology and environmental science.

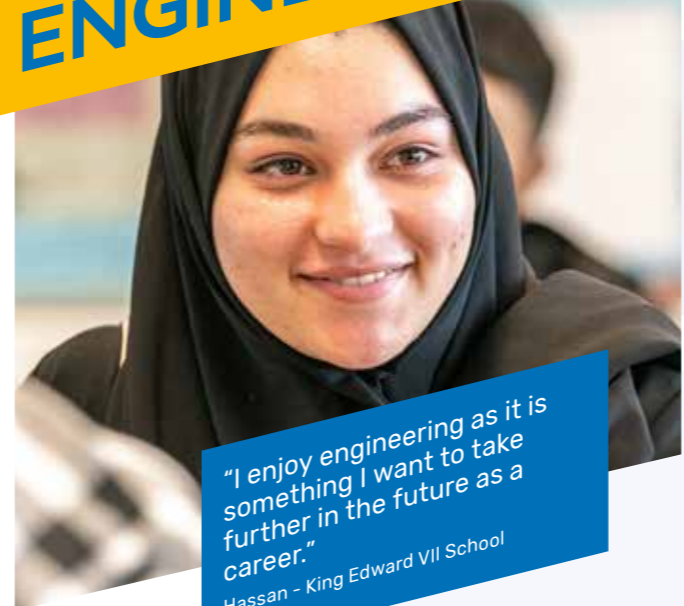
## How will I be assessed?

Examinations and coursework.

## What can I do next?

Students from this course have gone on to do the BTEC Level 3 Extended Diploma in Applied Science.

# CTEC ENGINEERING



"I enjoy engineering as it is something I want to take further in the future as a career."  
Hassan - King Edward VII School

**CAMBRIDGE TECHNICAL - LEVEL 3 EXTENDED CERTIFICATE - 2 YEARS**  
Entry Requirements: 5 GCSEs at grade 4-9 including English and Science and At least a grade 6 in Maths

## What will I study?

You will learn about mechanical and electrical engineering principles and applications and how to solve real life engineering problems. The course involves practical work on electrical circuits, forces, materials testing and servicing engineered components.

## How will I be assessed?

External assessments and internal assignments.

## What can I do next?

You can progress to study engineering at university or apply for technical apprenticeships or technician jobs in the engineering industry.