

BTEC Applied Science FAQs



What is Applied Science?

Applied Science is the study of Biology, Chemistry and Physics but with a greater focus on how skills in each are used and applied in various real-world scenarios, job sectors and industries. The Level 3 Extended Certificate BTEC in Applied Science is the equivalent of a full A level and offers students the chance to study the sciences in equivalent detail and complexity as an A level programme. There is a heavy emphasis on full written reports of practical investigations.

What topics do you study?

A range of topics are taught in BTEC Applied Science; these cover biology, chemistry and physics disciplines.

Year 1

| Unit title | Included: |
|---|--|
| 1. Principals and applications of Science | A: Chemistry: Periodic table, relative formula mass, moles, concentration, electronic structure, bonding and structure, physical and chemical properties, reactivity including reactivity of metals with acids and halogens. |
| | B: Biology: History of the microscope, preparation of slides, electron microscopy, magnification calculations, cell structure, Gram positive and negative bacteria, specialised cells, structure and function of the blood, pulmonary system, cardiovascular system and diseases, muscle contraction, ECG, nerve transmission, the brain. |
| | C: Physics: Transverse and longitudinal waves, measuring waves, superposition and diffraction of waves, industrial application of diffraction, the wave equation, progressive and stationary resonance, vibrating air columns, refractive index, total internal reflection, electromagnetic waves, wave intensity, inverse square law, communication, |
| 2. Practical Scientific Procedures and Techniques | A: Undertake titration and colorimetry to determine the concentration of solutions |
| | B: Undertake calorimetry to study cooling curves |
| | C: Undertake chromatographic techniques to identify components in mixtures |
| | D: Review personal development of scientific skills for laboratory work |

Year 2

| Topic area | Key points |
|--|---|
| Unit 3: Science investigation skills | D: Enzymes in Action |
| | E: Diffusion of molecules |
| | F: Plants and their environment |
| | G: Energy content of fuels |
| Unit 8: Physiology of human body systems | H: Electrical circuits |
| | Focus on the physiological make up of three human body systems (musculoskeletal, lymphatic and digestive), how the systems function and what occurs during dysfunction. |

What is the exam board?

The exam board is Edexcel

How much practical work is involved?

There is a practical element in all 4 units of study. However units 2 and 3 are practical based.

Unit 2 involves a series of 3 complex practical investigations with full written reports of all 3, plus a reflective assignment.

Unit 3 involves studying 5 different investigations and then examination on 2 of them. The examination has a practical component and a written component.

How many exams are there?

Unit 1 comprises three 40 minute exam papers taken in summer of year 1.

Unit 3 comprises one 3 hour practical exam followed by a 90 minute written exam paper.

What type of questions are in the exams?

There is a mixture of multiple choice, short answer questions and extended answer questions.

Is there any coursework?

Unit 2 consists of 4 extended assignments. They are written reports of the practical investigations and a reflective assignment whereby student show their personal development of scientific practical skills throughout the unit. All 4 assignments must be completed to the same standard to achieve that grade in the unit (pass, merit, distinction).

Unit 8 consists of 3 research based assignments. Again, all 3 assignments must be completed to the same standard to achieve that grade in the unit (pass, merit, distinction).

What do those who study BTEC Applied Science go on to do?

The Level 3 Extended Certificate BTEC in Applied Science is equivalent in size to one A level and would be studied alongside two other A levels. Students studying this course would be able to progress on to a range of higher education courses at University, including both undergraduate and foundation level degrees. As this is a vocational qualification, university course requirements must be checked carefully. Additionally, students may move on to take further professional qualifications in a specific career area with the possibility to move directly to employment.

Is BTEC Applied Science hard?

The content is equivalent in difficulty to sections of each science A level and is no less challenging. Due to the extensive coursework element and reduced reliance on examinations this course is suitable only to students who are prepared to put many hours of independent study outside lesson time into writing written scientific reports and research projects.

Help is at hand via a YouTube channel

https://www.youtube.com/channel/UC11v-AL_4VFrVczVBzURmlg

Do I need to be good at maths?

There is a significant maths element to units 1 – 3. Students will need to be familiar with basic maths, proficient at drawing and interpreting a variety of graph types. Students must be confident in learning new scientific calculations and detailed in showing workings. The maths within unit 2 is approximately equivalent to grade 8 at GCSE. Students will be taught how to use statistical techniques to analyse data gained through investigation. Students may find that taking Core Maths alongside this qualification is useful.

Can I get in touch if I have any other questions?

Of course, my email address is jbirchnall@plymstockschool.org.uk