



Sandwell Academy

BTEC Applied Science Extended Certificate

WHY APPLIED SCIENCE?

The opportunities for students of Science, on completion of full-time education, are enormous. There are many possible careers within the scientific world and qualifications in Science subjects are acceptable as an entry into many other careers.

Applied Science students can move on to Higher Education courses and careers in the following areas:

Veterinary Science
Teaching
Environmental Studies

Forensic Science
Lab Technician
Biochemical Science

Pharmacology
Nursing
Food Science

The Science courses offered at Sandwell Academy are designed to provide academic and vocational experiences. They will prepare students for their choice of career in both the world of work and Higher Education.

SPECIFIC ENTRY REQUIREMENTS

- Two Grade 5s in Science
- Grade 4 in Mathematics and English

COURSE OUTLINE

The qualification has four mandatory units and an additional unit covering the following topics :

- Principles and Applications of Biology – Structure and function of cells and tissues, biological molecules, enzymes and their role in organisms
- Principles and Applications of Chemistry – Structure of the Periodic Table and its implications on physical and chemical properties of substances, through analysis of different bonding methods
- Principles and Applications of Physics – Waves and their applications; force principles and their application in transportation and construction of electrical circuits
- Practical Scientific Procedures and Techniques – Practical applications across the sciences, including chromatography, colorimetry and electrical circuits.

- Scientific Investigation Skills – Investigative research, including planning, data collection, analysis and evaluation.

KNOWLEDGE AND SKILLS LEARNT

- Fundamental scientific principles and applied knowledge relating to biology, chemistry and physics
- Laboratory techniques, including health and safety assessment, and associated professional practice
- Problem solving.
- Scientific Research skills including researching and planning methodologies, primary data collection and analysis, drawing justified conclusions.
- Secondary research skills including collecting information from a range of sources, its evaluation and interpretation, and its use to draw reasoned conclusions.
- Transferable skills such as critical thinking, taking personal responsibility and written communications.

Students develop the ability to practically apply scientific concepts, which is beneficial to the analytical approach of related degrees. Critical thinking and independent learning help students to be better prepared for the self-directed learning approach used in higher education and become more open-minded to learning. Research and extended writing skills with the other skills, creates a good foundation for academic success.

COMPLIMETARY SUBJECTS

- Psychology
- Sociology
- Geography

ASSESSMENTS

50% of the course is assessed with external exams and 50% from internally assessed coursework

Unit	Type	Availability
Unit 1: Principles and Applications of Biology	• An external examination set and marked by Pearson. • 50 marks.	January and May/June First assessment May/June 2026
Unit 2: Principles and Applications of Chemistry	• An external examination set and marked by Pearson. • 50 marks.	January and May/June First assessment May/June 2026
Unit 3: Principles and Applications of Physics	• An external examination set and marked by Pearson. • 50 marks.	January and May/June First assessment May/June 2026