



BTEC Level 3 Nationals Extended Certificate and Foundation Diploma in APPLIED SCIENCE

Examination Board

- Edexcel

Extended Certificate

The Extended Certificate is the equivalent of one A Level and is made up of 4 units which include the 'mandatory' units 1, 2 and 3 plus one other 'option unit'. The four units will be studied over the two years.

Unit 1- Principles and Applications of Science

The topic areas covered in this unit include: animal and plant cells; tissues; atomic structure and bonding; chemical and physical properties of substances related to their uses; waves and their application in communications.

Assessment will be a 1.5 hour written exam that is set and marked by Pearson. You will draw on essential information to create written answers to practical questions in test conditions. You will be asked to respond to a range of different question types, including multiple-choice, calculations, short-answer, and extended open-response questions demonstrating your knowledge and understanding of key areas of science.

Unit 2 Practical Scientific Procedures and Techniques

This unit introduces you to standard laboratory equipment and techniques, including titration, colorimetry, calorimetry, chromatography, calibration procedures and laboratory safety.

Assessment will consist of completing an assignment brief where you will carry out tasks, creating evidence to support a work related scenario. This will be marked by your teacher.

Unit 3 Science Investigative Skills

This unit will develop the essential skills underpinning practical scientific investigations. As well as drawing on Units 1 and 2, these skills will be delivered through subject themes ranging from enzymes and diffusion to electrical circuits. The subject themes provide different contexts for the development of the investigative skills.

Assessment will be a task set and marked by Pearson and completed under supervised conditions in a three week period.

Part A: investigation to gather data, taken during first two weeks.

Part B: written task partly based on data from Part A, taken during third week. The supervised assessment sessions are a maximum of 3 hours for Part A and 1.5 hours for Part B.

Option-Unit 8 Physiology of Human Body Systems

This unit will focus on the physiological make up of three human body systems (musculoskeletal, lymphatic and digestive), how the systems function and what occurs during dysfunction.

Assessment will consist of completing an assignment brief where you will carry out tasks, creating evidence to support a work related scenario. This will be marked by your teacher.



Foundation Diploma

The Foundation Diploma is the equivalent of one and a half A Levels and is made up of 6 units which include the 'mandatory units' 1, 2 and 3 plus one other, unit 4, along with two 'option units', one of which will be the option unit studied for the Extended Certificate. The six units will be studied over the two years. Details of units 1, 2 and 3 along with the option unit are given above. Students will also complete the following two units.

Unit 4- Laboratory Techniques and their Application

This unit covers the importance of health and safety in work place laboratories, how data is stored and communicated and how organic liquids and solids are made and tested industrially.

Assessment will consist of completing an assignment brief where you will carry out tasks, creating evidence to support a work related scenario. This will be marked by your teacher.

Unit 9- Human Regulation and Reproduction

This unit will provide learners an understanding of how the internal body environment is regulated and controlled within set parameters to enable key bodily process to take place.

Assessment will consist of completing an assignment brief where you will carry out tasks, creating evidence to support a work related scenario. This will be marked by your teacher.

The Extended Certificate and Foundation Diploma units for each qualification will each be awarded a pass, merit, distinction or fail. A student's unit grades are then aggregated to give an overall qualification grade.

Skills required

- Ability for independent study and reading relevant science in the news
- Ability to memorise key words, follow technical instructions to carry out experiments
- Organisation
- Biology, Chemistry, Maths and Physics

Useful websites / reading materials

- BTEC Level 3 Nationals Applied Science Student Book 1- ISBN 9781292134093
- New Scientist magazine (available in the school library)
- Follow New Scientist, Guardian Science, Naked Scientists, Dr Alice Roberts etc. on twitter.
- A Short History of Nearly Everything by Bill Bryson ISBN-10: 0552997048
- <http://www.chemguide.co.uk/>
- <http://www.rsc.org/get-involved/>
- <http://www.physics-online.com/>
- <http://www.nuffieldfoundation.org/practical-physics>
- <http://www.iop.org/>

Recommended study

- 2 - 3 hours homework / study per week, during which time specific work will be set by staff.
- Reading over and writing up notes in neat
- Completing set homework tasks
- Small group revision and study sessions
- Memorising keywords
- Answering and self-assessing past paper questions
- Preparing for practical's
- Watching science programmes on TV / online
- Reading ahead for the next lesson
- Reading relevant science stories in the news eg. conservation, health issues etc.