CARDINAL NEWMAN CATHOLIC SCHOOL

BTEC Extended Certificate in Applied Science

In this subject you will:

- Be taught an extensive range of centre-assessed units with practical and wider project-based assessment opportunities, as well as examined units on Science Fundamentals, Laboratory Techniques and Scientific Analysis and Reporting,
- Gain the right combination of knowledge, understanding and skills required for the laboratory or further study to progress to the next stage, whether that's higher education, an apprenticeship or employment .

Assessment Overview

Unit 1 - Principles and Applications of Science I

This unit covers some of the key science concepts in biology, chemistry and physics.

This unit is assessed through externally set written examination papers, worth a maximum of 90 marks and 2 hours in duration.

Unit 2 - Practical Scientific Procedures and Techniques

In this unit, learners will be introduced to quantitative laboratory techniques, calibration, chromatography, calorimetry and laboratory safety, which are relevant to the chemical and life science industries. This unit is internally assessed and externally moderated by OCR.

Unit 3– Science Investigation skills

Learners will cover the stages involved and the skills needed in planning a scientific investigation: how to record, interpret, draw scientific conclusions and evaluate.

To assess this unit, a task set and marked by Pearson and completed under supervised conditions. In total, the duration od this is 75 minutes in duration and is worth 60 marks.

Unit 8- Physiology of Human Body Systems

Learners 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.

This unit is internally assessed and externally moderated by OCR.

Head of Department

Mrs Raza

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ENTRY REQUIREMENTS

You need to have achieved at least a 5-5 in GCSE Science or a 5 in GCSE Biology., Chemistry or Physics. You also require a 5 in GCSE Mathematics, a 4 in GCSE English and overall 4 GCSEs of 4 or above.

You need to be able to listen and follow instructions in a methodical way to achieve valid outcomes during practical work.

You also have to be able to write in a logical, coherent and concise manner when planning a scientific investigation.

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What will I study?

Unit 1 - Principles and Applications of Science I

A Periodicity and properties of elements
B Structure and functions of cells and tissues
C Waves in communication

Unit 2 - Practical Scientific Procedures and Techniques

Learning aim A: Undertake titration and colorimetry to determine the concentration of solutions

Learning aim B: Undertake calorimetry to study cooling curves

Learning aim C: Undertake chromatographic techniques to identify components in mixtures

Learning aim D: Review personal development of scientific skills for laboratory work

Unit 3– Science Investigation skills

A Planning a scientific investigation
B Data collection, processing and analysis/interpretation
C Drawing conclusions and evaluation
D Enzymes in action
E Diffusion of molecules
F Plants and their environment
G Energy content of fuels
H Electrical circuits

Unit 8- Physiology of Human Body Systems

Learning aim A: Understand the impact of disorders of the musculoskeletal system and their associated corrective treatments

Learning aim B: Understand the impact of disorders on the physiology of the lymphatic system and the associated corrective treatments

Learning aim C: Explore the physiology of the digestive system and the use of corrective treatments for dietary-related diseases

POSSIBLE CAREER OPTIONS

Students can progress directly into work, apprenticeships or a wide range of science-based degree level courses including:

- Biomedical Science
- Sports Therapy
- Pharmaceutical Science
- Paramedic Science
- Radiography
- Biological Life Sciences
- Nursing
- Veterinary Nursing
- Applied Chemistry
- Ecologist
- Conservation scientist