



## BTEC Applied Science

Level 3 National Extended Certificate • KS5 Leader: Mr B Clark • Exam Board: Edexcel

### Course Entry Requirements:

School entry requirements

### Course Outline:

This course is for students who are interested in learning about the sector alongside other fields of study, with a view to progressing to a wide range of higher education courses, not necessarily in applied science.

### Course Content:

#### Mandatory Modules:

#### (Y12 Units 1 and 2)

##### 1.Principles and Application of Science 1

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

##### 2.Practical Scientific Procedures and Techniques

Students will be introduced to quantitative laboratory techniques, calibration, chromatography, calorimetry and laboratory safety which are relevant to the chemical and life science industries. In this unit students will:

- Undertake titration and colorimetry to determine the concentration of solutions
- Undertake calorimetry to study cooling curves
- Undertake chromatographic techniques to identify components in mixtures
- Review personal development of scientific skills for laboratory work

#### (Y13 Unit 3 and 4)

##### 3.Science Investigation Skills

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

##### 4.Optional Modules

One other module is taught from a range from Biology, Chemistry or Physics based modules dependent on group numbers and staffing available. *Currently a module on Human Physiology is being studied.*



## Assessment:

Unit title	Guided learning hours	Assessment type	Assessment length
<b>1.Principles and Application of Science</b>	90	Externally set and marked written exam	90 minutes
<b>2.Practical Scientific Procedures and Techniques</b>	90	Internally assessed summative assignments	
<b>3.Science Investigation Skills</b>	120	Externally set and marked written/practical task	90 minutes
<b>4.Optional Modules</b>	60	Internally assessed summative assignments	

## Learning strategies:

- Extended research and writing
- Laboratory work and fieldwork
- Designing, carrying out and evaluating practical investigations
- Homework
- Self-study using school resources
- Using ICT to present reports and analyse data
- Group discussions
- Out of school visits and lectures (where available)
- Exam revision and preparation
- Active engagement in enquiry into problems, issues and questions

**It is recommended that students taking this course have a GCSE Grade 5 in Combined Science or higher**