

**WEST COVENTRY
ACADEMY
SIXTH FORM**

**SUBJECT TRANSITION BOOK
Summer 2021**



**BTEC Level 3
Applied Science**

STUDENT NAME:

This booklet has been prepared by Science staff for you to read and the work contained in it will ensure that you get off to the best possible start in this subject area. It is very important that you read this booklet carefully over the summer and have a thorough attempt to complete the work and submit it at the start of the year to your subject teacher in the very first lesson. This will be the first impression you create and is a real indicator of how seriously you are prepared to be in your studies.

BTEC Level 3 National Extended Certificate in Applied Science

This subject is taught at:

West Coventry Academy

The key staff are:

Mrs J Coupe, West Coventry academy staffjxc@westcoventryacademy.org

Miss K Ferron, West Coventry academy staffksf@westcoventryacademy.org

Course Details

Course Title: BTEC Level National Extended Certificate in Applied Science

Exam board: Edexcel

Exam Board web site: <http://www.edexcel.com>

About the course

BTEC Level 3 National Extended Certificate in Applied Science:

The Pearson BTEC Level 3 National Extended Certificate in Applied Science is intended as an Applied General qualification for post-16 learners who want to continue their education through applied learning and who aim to progress to higher education and ultimately to employment, possibly in the applied science sector. The qualification is equivalent in size to one A Level and aims to give a coherent introduction to study of the applied science sector.

The content of this qualification has been developed in consultation with academics to ensure that it supports progression to higher education. Employers and professional bodies have also been involved and consulted to confirm that the content is appropriate and consistent with current practice for learners planning to enter employment directly in the applied science sector. To achieve a Extended certificate learners will study three mandatory units and one other unit chosen by the teacher. The course summary is shown in the table on the next page.

Summary of the course:

Y12	Y13
Certificate (180 GLH)	Extended Certificate (360 GLH)
Equivalent in size to 0.5 A - levels	Equivalent in size to 1 A - level
Total: 2 UNITS	Total: 4 UNITS
2 MANDATORY UNITS	3 MANDATORY UNITS
Unit 1: Principles and Applications of Science I (90 GLH) [*][S]	→
Unit 2: Practical Scientific procedures and Techniques (90 GLH) [*]	→
	Unit 3: Science investigation Skills (120 GLH) [*] [S]
	One optional unit selected from the following list: 8. Physiology of Human Body Systems 9. Human Regulation and Reproduction 10. Biological Molecules and Metabolic Pathways 11. Genetics and Genetic Engineering 12. Diseases and Infections 13. Applications of Inorganic Chemistry 14. Applications of Organic Chemistry 15. Electrical Circuits and their Application 16. Astronomy and Space Science

Key: [*] Mandatory unit that must be passed

[S] Mandatory Synoptic Unit

Assessment method:

Unit 1: Principles and Applications of Science I, students are required to sit a 90 minute written exam which is worth 90 marks. The exam is split into three equal sections (Biology, Chemistry and Physics).

- The exam will include a range of question types including multiple choice, calculation, short answer and open response.

Unit 2: Practical Scientific procedures and Techniques. Students complete a series of tasks set in a work- related scenario which a tailored to local industry needs.

Unit 3: Science Investigation Skills, students are set a two-part task, where they have to complete an experiment under timed conditions, and then complete a written task based on their findings.

- The task aims to test the student's ability to plan, record, process, analyse and evaluate scientific findings.

Optional Units: Set and marked by Centre

Students complete a series of tasks set in a work- related scenario which a tailored to local industry needs.

Minimum requirement: Standard entry requirements of five level 5 grades including English language, mathematics and two 5s in science.

What equipment will be needed for the subject?

An A4 ring binder.

Dividers

Lined paper

Pens, pencils rulers

A scientific calculator.

Please complete the following assignments over summer ready to hand in on the very first lesson in this subject:

Activity 1 – Fundamentals of science.

Periodic Table of Elements

Independent research is a key part of your course.

Research the following topics using your GCSE work, books and websites to produce a detailed poster or a PowerPoint presentation.

This presentation will form the first part of your course:

- a) The work of Mendeleev on the development of the structure of the modern Periodic table,
- b) The separate work of Thomson, Rutherford and Bohr on the developing structure of an atom,

Please include in your presentation the lay out of the periodic table, using terms like group, period, metals and state.

Explain why elements are grouped in a certain way and give some examples of reactions.

Also include the current theory for the structure of an atom, including sub atomic particles and electrons shell configuration.

Activity 2 – Working in the Science Industry

Understanding how to complete practical work safely and professionally is a key part of the course.

Research the following roles in the science industry.

- a) Scene of Crime Officer/forensic laboratory technician
- b) laboratory technician in haematology department of a hospital

From your notes write a job description for one of the roles which could be included in a job advert.

Include the following:

- what qualifications the role would need
- what day to day tasks are involved
- any equipment the technician would use
- what safety precautions they would need to use

Activity 3 – Working scientifically

Also, as this is an applied course it is important that you understand how to gather, record, interpret and evaluate data. To refresh your knowledge in these areas, complete the set of 5 lessons on working scientifically. If you can not access these email Miss Ferron on staffksf@westcoventryacademy.org and I'll email them to you.

Play them as a powerpoint presentation. Complete all tasks on paper and then green pen your answers. Have all these notes available in your folder for the first lesson in September please.

Really looking forward to seeing you, Miss Ferron.

Reading List

Books, newspapers and magazines

Any A-level, Biology, chemistry and physics book

BTEC Level 3 applied science textbook Heinemann, ISBN 978-1-846906-80-0

Other good sources to read: New scientist