



**BEECHEN CLIFF**

**Level 3 Medical Science**

**(Extended Certificate)**

**2025 - 2026**

**Head of Faculty: Ms R Bala**

**Head of Subject: Mr L Hollis**

## Subject Curriculum Intent

Medical Science is the area of science that deals with maintaining health and preventing and treating diseases. The Level 3 Alternative Academic Qualification in Medical Science is for any students who enjoy Science, and especially for those who are interested in careers related to healthcare and medical research. Medical scientists are at the forefront of healthcare services, as they are instrumental in the diagnosis of disease, evaluating the effectiveness of treatments and researching new cures.

This course will develop students' knowledge, understanding and skills in key scientific principles, and can be a good foundation for studying healthcare-related fields at university. It can also help prepare for employment in areas of Medical science, such as roles in physiological sciences or clinical laboratory services.

Our intention is that having studied with us our students will:

- develop their knowledge of human anatomy and physiology, the science of medicines and clinical laboratory techniques;
- develop their understanding of planning, conducting and reporting of research in medical sciences;
- develop mathematical and analytical skills;
- be able to apply their knowledge and skills to a wide range of problems;
- develop an awareness of the many interesting and varied career opportunities within the field;
- be fully equipped to continue to study or to work in the medical science field.

We begin by teaching the "Human health and disease" unit which develops students' knowledge and understanding of human anatomy and physiology. Alongside this, we also start our coursework units. In the "Physiological measurement techniques" unit, students will perform tests which will accurately measure a range of physiological functions. Our other coursework unit in the Lower Sixth is "Medical science research methods". Students will conduct their own research, process the data they collect and make evidence-based conclusions.

In Year 13, we will study "Medicines and treatment of disease". This develops knowledge and understanding of medicines and how they work as well as cancer, its relationship to genetics, and the range of therapeutic treatments available. Students will learn how to provide information to a range of audiences on how medicines work, to bring about effective treatment of diseases and disorders. The final coursework unit "Clinical laboratory techniques" relates knowledge of human physiology and biochemistry to clinical measurement test results. The unit will enable students to perform tests which will accurately measure a range of biochemical and microbiological parameters. The final unit "Medical case study" is the overall synoptic unit for the Diploma qualification. It provides the opportunity for students to demonstrate understanding of the connections between the other five units of this Medical Science qualification.

## Subject Curriculum Implementation:

We follow the WJEC Level 3 Alternative Academic Qualification in Medical Science specification, which builds on the knowledge and skills gained at GCSE.

There are two exams, one in each summer of the course, with an opportunity to retake if needed. There are also three pieces of Non-Exam Assessment (NEA), based on practical skills and analysis, and there is one assessment carried out in class and sent away for external marking.

All classes are taught by two specialist teachers. There are 6 modules of learning as follows:

Unit	Form of assessment	Year
Human health and disease	Exam	12
Physiological measurement techniques	Coursework	12
Medical Science research methods	Coursework	12
Medicines and treatment of disease	Coursework	13
Clinical laboratory techniques	Coursework	13
Medical case study	Exam	12 and 13

Topics across the course are carefully sequenced, to ensure knowledge is built over time and concepts revisited. To ensure that all pupils reach their potential, support materials and challenge tasks are provided in lessons as well as revision materials, and in year 13 extra revision sessions are held. Lesson notes are regularly reviewed and knowledge organisers are used to help students develop schema and remember more.

We use regular knowledge quizzes as well as less frequent formal assessments to check what pupils know and provide verbal and written feedback to ensure that any gaps in knowledge are filled and that they know how to improve. Our google classroom is used to provide useful resources as we work through the course.

## Allocated Curriculum Time:

	Lower Sixth	Upper Sixth
Fortnightly lesson allocation	8	8

## Course Information

**Title:** WJEC Level 3 Alternative Academic Qualification (Applied Qualification) in Medical Science (Extended Certificate)

**Exam Board:** WJEC

**WJEC Qualification Code:** 4403QX

**Ofqual QN** 610/3048/X

## Lower Sixth

	Curriculum Foci Areas		
	Teacher 1	Teacher 2	Assessment
<b>Term 1</b>	Unit 1 - -How lifestyle may affect major body systems and health -How pathogens can affect body systems -How non-infectious conditions affect body systems	Unit 1 - -The structure of human cells -Transport systems in cells Unit 2 - -Cardiovascular system -Respiratory system	<b>Term 1 Assessments</b>  Unit 1, part 1 - Cell structure, Cardiovascular system, respiratory system  Unit 1, part 2 - Communicable diseases, lifestyle factors and human health
<b>Term 2</b>	Unit 3 - Research hypotheses -Sampling methods -Research methods -Ethical issues affecting research -Collecting data -Understanding terms used in data analysis -Statistical methods used to analyse data	Unit 2 -Neurophysiology -Audiology -GI physiology -Ophthalmic physiology -Urodynamics -vascular function -Confidentiality -Conduct	<b>Term 2 assessments</b>  Unit 1 assessment  Unit 3 - data analysis, sampling methods mock coursework
<b>Term 3</b>	Unit 3 -Making conclusions from data	Unit 2	<b>Term 3 assessments</b>  Unit 2 coursework

Aspiration

Compassion

Independence

Respect

	<ul style="list-style-type: none"> <li>-Evaluating procedures</li> <li>-Presenting data visually</li> <li>-Communicating outcomes of research</li> <li>-unit 3 mock</li> </ul>	<ul style="list-style-type: none"> <li>-Planning to perform physiological measurement tests</li> <li>-Using physiological testing equipment</li> <li>-Recording results from physiological measurement tests</li> <li>-Making evidence based conclusions</li> <li>-Evaluating the reliability of data</li> </ul>	Unit 3 mock coursework
<b>Term 4</b>	Unit 1 <ul style="list-style-type: none"> <li>-Carbohydrates</li> <li>-proteins</li> <li>-lipids</li> </ul>	Unit 1 <ul style="list-style-type: none"> <li>-Endocrine system</li> <li>-Nervous system</li> </ul>	<b>Unit 1 mock exam</b>
<b>Term 5</b>	Unit 1 enzymes <ul style="list-style-type: none"> <li>-DNA replication</li> <li>-Protein synthesis</li> <li>-Revision</li> </ul>	Unit 1 <ul style="list-style-type: none"> <li>-Musculoskeletal system:</li> <li>-Digestive system</li> <li>-Revision</li> </ul>	<b>Unit 1 external exam</b>
<b>Term 6</b>	Unit 3 <ul style="list-style-type: none"> <li>-Complete course work</li> </ul> Unit 4 <ul style="list-style-type: none"> <li>-cancer</li> </ul>	Unit 5 <ul style="list-style-type: none"> <li>-Principles of clinical tests</li> </ul>	<b>Unit 6 style assessment</b>  <b>Unit 3 coursework</b>

## Upper Sixth

	Curriculum Foci Areas		
Term	Teacher 1	Teacher 2	Assessment
1	Unit 4 - -cancer treatment -task 3 coursework	Unit 5 - Understand clinical testing	Term 1 assessments - <b>Medicines and clinical testing part 1</b> <b>Unit 4 Task 3 mock coursework</b>
2	Unit 4 - Understand how medicines work -task 2 coursework	Unit 5 - Be able to carry out clinical laboratory techniques	Mock exam - <b>Unit 6 paper</b>
3	Unit 4 - Be able to provide information about medicines -task 3 coursework	Unit 5 - Be able to process data from clinical tests	<b>Unit 4 Coursework</b>  <b>Unit 5 mock coursework</b>
4	Units 1-3 content revision coursework catch up	<b>Unit 5 Coursework completed</b>	<b>Unit 5 coursework</b>
5	Unit 6 - preparation		<b>Unit 6 mock paper</b>
6			<b>Unit 6 Exam</b>

## Reading List

### Optional reading

#### Magazines, Newspapers and journals

New Scientist, Scientific American, Nature, any scientific articles in newspapers

#### Websites

- <http://nature.com>
- [http://www.bbc.co.uk/news/science\\_and\\_environment](http://www.bbc.co.uk/news/science_and_environment)

#### Medicine TED talks

- [https://www.ted.com/playlists/432/what\\_you\\_need\\_to\\_know\\_about\\_me](https://www.ted.com/playlists/432/what_you_need_to_know_about_me)
- [https://www.ted.com/playlists/449/let\\_s\\_redesign\\_the\\_medical\\_exp](https://www.ted.com/playlists/449/let_s_redesign_the_medical_exp)

**Youtube** – there is a large selection in the playlist below, but try to focus on the physiology & clinical tests: <https://www.youtube.com/user/Campbellteaching/playlists>

#### Books



Aspiration

Compassion

Independence

Respect

## Studying / Revision Information

### Ongoing Studying

After each lesson you should use resources provided on the google classroom to consolidate your learning

Regular homeworks will be set to either consolidate learning or to allow “flipped learning” so consolidation can take place in class.

It is expected that for every hour of lessons, students will spend another hour outside of lessons, either completing homework or consolidating knowledge.

### Revision

In order to prepare for assessments, students should use checklists to ensure all relevant content has been learned. In addition the use of questions to consolidate learning is vitally important, these should be both retrieval of knowledge questions and past paper questions. Resources will be provided on the google classroom

### Final Assessment Structure:

Component	Weighting (%)	Content	Proposed Examination Date
Unit 1	25	Human health and disease	May in Year 12
Unit 2	12.5	Physiological measurement techniques	Coursework - submitted in Year 12
Unit 3	12.5	Medical Science research methods	Coursework - submitted in Year 12
Unit 4	20	Medicines and treatment of disease	Coursework - submitted in Year 13
Unit 5	15	Clinical laboratory techniques	Coursework - submitted in Year 13
Unit 6	15	Medical case study	June in Year 13

Please see the Exam Board website for up to date information:

[https://www.wjec.co.uk/qualifications/level-3-alternative-academic-qualification-applied-qualification-in-medical-science-extended-certificate/#tab\\_keydocuments](https://www.wjec.co.uk/qualifications/level-3-alternative-academic-qualification-applied-qualification-in-medical-science-extended-certificate/#tab_keydocuments)