Exam Board:	*Edexcel*
Qualification:	***610/3958/5***
Assessment Information:	*Unit 3 (external exam – 2 hours) and Unit 5 (coursework)*
Link to official specification:	*https://qualifications.pearson.com/en/qualifications/btec-nationals/medical-science-aaq.html*

Department Information:

Physics, Biology and Chemistry are popular and successful subjects at Furze Platt. The Department aims to provide a supportive, stimulating, dynamic and academically challenging experience for all students. Over recent years, the Department has gone from strength to strength, and standards and students' results are high.
In Year 13, those students studying the Medical Science (AAQ) course will receive 9 hours of Biology teaching per fortnight.

ACHIEVE in the curriculum:

*The curriculum has been designed with the ACHIEVE values at its core. Lessons have been written to encourage **ambition** and have also been written with the intent of being enjoyable and giving opportunities for students to celebrate their own successes. **Collaboration** is a key aspect of the scientific method and students will develop this and their **versatility** through required practical activities, as well as through paired and group classwork. Students will develop **integrity** through their completion of independent learning, coursework and through self-marking and peer-marking their work. Students will develop **endurance** through the completion of consolidatory activities such as past exam papers.*

The **Pearson Level 3 Alternative Academic Qualification BTEC National in Medical Science (Extended Certificate)** is designed to provide students with a strong foundation in human biology and applied scientific skills. It is equivalent to one A-level and is intended for learners who are interested in pursuing careers or further study in areas like healthcare, biomedical sciences or nursing. Alternatively, it supports entry into apprenticeships or employment in healthcare, laboratory work, or related sectors.

Curriculum Aims and Intent:

Development of Scientific Knowledge: The course aims to build a thorough understanding of core human biology topics, such as cells and tissues, body systems (e.g., cardiovascular, respiratory, digestive), genetics, and the immune response.

Focus on Health and Disease: A major focus is on the interaction between biology and health, allowing students to explore topics like infections, immunology, and non-communicable diseases. The course emphasises real-world health issues and how human biology informs treatments and public health interventions.

Applied Context and Real-World Relevance: The curriculum is designed with an applied focus, encouraging students to relate biological concepts to practical applications in healthcare, diagnostics, and clinical settings. The content is tied to real-world situations that learners may encounter in their future careers or studies.

Practical Skills and Scientific Techniques: Students are expected to develop hands-on skills in biological research methods, such as microscopy and microbiology, ensuring they are competent in laboratory procedures commonly used in healthcare environments.

Analytical and Research Skills: The course emphasises the development of skills in analysing experimental data, evaluating scientific research, and forming evidence-based conclusions. This prepares students for the rigor of higher education or professional practice.

Interdisciplinary Learning: The course integrates knowledge across scientific disciplines, such as biochemistry and physiology, encouraging students to understand how different systems within the human body interact and contribute to overall health.

Key Units in the Curriculum:

Unit 1: Principles of Human Physiology, Anatomy and Pathology (Y12) covering foundational human biology, including cell structure, biochemistry, human anatomy, and systems such as the cardiovascular and respiratory systems.

Unit 3: Practical Microbiology and Infectious Diseases (Y12) focusing on microbiological techniques, including culturing bacteria and understanding the role of pathogens in infectious diseases.

Unit 2: Health Issues and Scientific Reporting (Y13) focusing on the understanding of health issues and associated initiatives and the influence of organisations/individuals on health issues. Students will be required to interpret, analyse and evaluate scientific information and understand how health issues and initiatives are reported in different media and for different audiences.

Unit 4: Diseases, Disorders, Treatments and Therapies (Y13) exploring biological molecules and pathways, and their relevance to diseases (physiological and psychological), disorders, treatments and therapies.

Resources:

Textbook available from Amazon:

L3 AAQ BTEC National 2025 Medical Science Ext Cert Student Book, Pearson Education Ltd. (ISBN 9781292487090)

https://www.amazon.co.uk/National-Medical-Science-Student-Print/dp/1292487097

PMT (for past paper questions) https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/
Ms Estruch Biology: https://www.youtube.com/@MissEstruchBiology

How we keep parents informed:
Year 13 - Progress reports are published 4 times per year, in October, November and February, with a face-to-face parents' evening in December.

How parents can help their child:

Assist with filing and folder organisation
Ensue that students are consolidating their learning after every lesson. Students should be spending at least 9 hours per fortnight consolidating their learning.
Encourage the completion and marking of past paper questions
Ensuring that coursework is completed, and deadlines adhered to
Encourage students to explore beyond the specification (documentaries, podcasts, reading of scientific journals, keeping abreast of scientific developments in the news)
Liaise with teachers and attend Parents' evening

What we study and when:

Term	Unit 2	Knowledge, Understanding & Skills Developed	ACHIEVE / Personal Development Focus	How The Work Is Assessed	Careers Links
1	**Diagnostic Techniques**	Learners will understand the purposes and the basis of the techniques used to determine normal and abnormal function in humans (e.g. heart rate, respiratory rate, blood pressure, temperature, oxygen saturation). Diagnostic tests for genetic and chromosomal conditions during pregnancy. Learners are expected to describe the methods of diagnostic tests limited to the readings/samples taken by the healthcare provider and the results as would be reported to the patient.	As above	End-of-topic test	Healthcare Scientist Biomedical Scientist Nurse Paramedic Public Health Officer Dietitian/Nutritionist Physiotherapist Occupational Therapist Pharmacist Health Care Assistant Health Visitor Laboratory Technician Infectious Disease Specialist Medical Sales Representative Health and Safety Officer
1	**Immune response and dysfunction**	Learners will understand the theoretical causes, symptoms and treatment of diseases of the immune system to include: Autoimmune diseases (diabetes, MS, Crohn's and rheumatoid arthritis).	As above	End-of-topic test	

		Primary and secondary immunodeficiency diseases, to include: SCID, HIV and immune deficiency due to chemotherapy or organ transplants. Allergies and allergens.			
2	**Genetics and health**	Learners will understand the major stages involved in gene expression, including transcription, translation and the effect of mutations. Learners will understand the causes, progression and diagnosis of genetic and chromosomal disorders. Inheritance and interpretation of genetic diagrams. DNA sequencing.	As above	End-of-topic test	
2	**Cancer**	Development of cancer. Cancer screening and diagnosis. Cancer treatments.	As above	End-of-topic test	
2 + 3	**Interpretation, analysis and evaluation of scientific information**	Quantitative and qualitative evidence. Factors affecting validity and reliability of quantitative and qualitative data sources and conclusions. Learners will understand the influence that different organisations/individuals have on health issues and any associated initiatives and research. Bias and misuse of data. Conducting scientific analysis of data.	As above	End-of-topic test and interim feedback for tasks.	

		Learners will interpret, analyse and evaluate scientific information that informs health issues to make judgements on the validity of conclusions drawn, selecting and applying knowledge of scientific methods. Learners will understand how scientific information is presented in relation to the target audience and reporting medium and be able to synthesise relevant information for different audiences.			

What we study and when:					
Term	**Unit 4**	**Knowledge, Understanding & Skills Developed**	**ACHIEVE / Personal Development Focus**	**How The Work Is Assessed**	**Careers Links**
3	**Structure and function of biological molecules** **Roles of proteins and lipids in maintaining physiological and psychological health**	Learners will build on their core knowledge of proteins, nucleic acids and lipids to develop an understanding of the structures, formation, functions and importance of proteins, nucleic acids and lipids in maintaining physiological and psychological health.	As above	Interim coursework deadlines	Medical Doctor Oncologist Pharmacist Nurse Physiotherapist Occupational Therapist Psychiatrist Cardiologist Endocrinologist Dermatologist Clinical Research Scientist Radiographer Laboratory Technician Rehabilitation Specialist Palliative Care Specialist Clinical Psychologist Dietitian Medical Sales Representative Neurologist Clinical Trials Coordinator
	Disruption of biological processes in living organisms	Learners will explore the causes and effects of disruption to biochemical processes including: • Cancer • CHD • Diabetes • Mental health issues such as Alzheimer's disease, anxiety, psychotic disorders, personality disorders and addiction	As above	Interim coursework deadlines	
4 + 5	**Physiological diseases and disorders** **Treatments for physiological diseases and disorders** **Effects on the body**	Learners will understand the types of treatment, therapies and the associated benefits of each when used in relation to specific physiological diseases and disorders (e.g. Radiotherapy, Chemotherapy, Hormone therapy , Surgery, Gene therapy and Stem cell therapy). They will research the effects of each treatment option on the body.	As above	Interim coursework deadlines	

5 + 6	**Drug and medicine discovery and development for physiological diseases and disorders** **Innovative treatments** **Ethical, legal and moral issues**	Learners will explore drug discovery and development. They will also research the development of innovative treatments for physiological diseases and disorders. Learners will explore the ethical, legal and moral issues relating to treatments and drug development and testing.	As above	Interim coursework deadlines	