

HIGHFIELDS SCHOOL

CURRICULUM OVERVIEW 2023-2024



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SUBJECT: BTEC LEVEL 3 APPLIED SCIENCE

EXAMINATION BOARD: PEARSON

AUTUMN TERM - YEAR 12	SPRING TERM - YEAR 12	SUMMER TERM - YEAR 12
<p>Unit 2 – Practical Scientific Procedures and Techniques</p> <p>This unit consists of four assignments that will introduce quantitative laboratory techniques which are relevant to chemical and life science industries</p> <ul style="list-style-type: none"> • Preparing a standard solution and using it to calibrate acids and alkalis by titration • Analysis of plant pigments and amino acids by chromatography • Determining the concentration of a solution using colorimetry • Calibrating a thermometer and using it to investigate cooling curves of different substances <p>Practical Work</p> <p>During the first half term students will learn about the different techniques and the theory and calculations behind them through the completion of practical work</p> <p>Students will begin their assignments in the second half term to be completed in January</p>	<p>Unit 1 – Principles and Applications of Science 1</p> <p>This unit consists of three different subjects:</p> <ul style="list-style-type: none"> • Chemistry – Periodicity and properties of elements • Biology – Structure and function of cells and tissues • Physics – Waves in communication <p>The unit builds on prior knowledge and develops key scientific ideas through the study of contemporary themes</p> <p>Practical Work</p> <p>Practical work will be undertaken to support the scientific theory, but it is not assessed as in Unit 2</p>	<p>Unit 3 – Science Investigation Skills</p> <p>This unit covers the key ideas behind planning, analysing, and evaluating scientific investigations</p> <p>The areas studied are:</p> <ul style="list-style-type: none"> • Enzymes in action. • Diffusion of molecules. • Plants and their environment. • Energy content of fuels. • Electrical circuits. <p>Investigative skills cover planning, implementation, concluding and evaluating. Students will also learn how to carry out statistical analysis of data</p> <p>Practical Work</p> <p>Students will carry out a large amount of practical work during this unit. The practical work is not assessed but is used to develop a high level of investigation skills</p>
<p>ASSESSMENT</p> <p>The assignments are internally assessed and graded Distinction, Merit and Pass. Students will have the opportunity to complete practice assignments beforehand.</p>	<p>ASSESSMENT</p> <p>This unit is externally assessed through three 40-minute exams in May. There will be opportunities to complete practice exams beforehand. This module can be re-taken in Year 13 if necessary.</p>	<p>ASSESSMENT</p> <p>Students complete a 2 hour and 15-minute written exam. The first 45 minutes of the exam involves reading an investigation scenario. The questions are based on this investigation and will involve analysing, concluding, and evaluating. The exam takes place in January when the students are in Year 13.</p>

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AUTUMN TERM - YEAR 13

Unit 3 – Science Investigation Skills

Students continue studying Unit 3 which they began in May during Year 12. They will continue to carry out scientific investigations to develop their knowledge and skills. There will be opportunities to complete practice assessments before the exam at the end of January.

ASSESSMENT

A 2 hour and 15-minute external exam will take place in January. This assessment can be re-taken in May if necessary.

OVERALL GRADE

On completion of all the assessment criteria, students are awarded the qualification of Level 3 National Extended Certificate in Applied Science. The overall grade is a weighted average of the four units taken over two years. The grades available are Distinction*, Distinction, Merit and Pass. Through taking the course students will have developed a wide range of practical techniques along with a high level of analytical and evaluation skills

SPRING TERM - YEAR 13

Unit 8 – Physiology of Human Body Systems

The final unit is based on research and practical skills. Students will study human physiology through the following organ systems:

- The musculoskeletal system
- The lymphatic system
- The digestive system

Students will develop high level research skills including referencing and evaluating sources. They will also examine medical case studies in relation to diseases of the digestive and lymphatic systems

Students will also plan and carry out practical work relevant to the areas of study

ASSESSMENT

Students will produce three extensive reports which are internally assessed. The grades available are Distinction, Merit and Pass.