

**CNCS**  
**BTEC Level 3 Applied Science: Curriculum Overview**

**Rationale:** In Year 12 students will build on prior knowledge from KS4 and develop their skills in key foundation concepts in Biology, Chemistry and Physics ready for sitting the external examinations in Unit 1 in term 3.1 in yr12. Students will learn how to work safely in a lab and investigate scientific questions. These skills will be assessed in term 2.1 of yr13 as the Unit 3 exam Students will then work through Units 2 and 8 throughout yr13 to allow them to develop their practical skills further (unit 2) and study the physiology of human organ systems in depth (unit 8)

**A learner in BTEC Level 3 Applied Science will know/ have studied:**

Key areas in all three sciences, along with key practical competencies. They will have worked in a lab and know the key safety rules to follow. They will have carried out key investigations. They will have produced portfolios to support their practical and theory work

**A learner in BTEC Level 3 Applied Science will be able to:**

Work safely in lab and carry out investigations. They will be able to question and understand the world around them from the units studied. They will answer exam questions with confidence and skill.

Year	Term	Outline	Assessment	Home Learning	Key Skills/ End Point
12	1	<p><b>Biology</b> Describe the ultrastructure and function of organelles in prokaryotes &amp; eukaryotes Describe the structure and function of specialised cells In</p> <p><b>Chemistry</b> Describe the arrangement of atoms including spd notation for electrons Describe the three types of bonding including IMF</p> <p><b>Physics</b> Recall and use key terms to describe waves Calculations involving wave equations</p>	<p><b>Pit stops</b> Biology B1.1 B1.2 B1.3</p> <p>Chemistry C1.1 C1.2 C1.3 C1.4</p> <p>Physics P1.1 P1.2</p> <p><b>End of term assessment</b> Unit 1 Paper</p>	Research, practice questions and revision	This first term will focus on the basic skills needed to be successful – independence and organisation etc. and will introduce key concepts in Chemistry, Biology and Physics
	2	<p><b>Biology</b> Describe the structure and function on endothelial tissue, muscle fibres and nervous tissue</p> <p><b>Chemistry</b> Calculations involving moles Describe the arrangement and trends in the Periodic Table</p>	<p><b>Pit stops</b> Biology B2.1 B3.1 B3.2</p>	Research, practice questions and revision	The second term will build upon the key knowledge from term one and extend the GCSE knowledge to a level 3 standard.

		<p><b>Physics</b> Describe the use of waves in communication Calculations involving critical angles and intensity</p>	<p>Chemistry C2.1 C2.2</p> <p>Physics P2.1 P3.1 P3.2</p> <p><b>End of term assessment</b> Unit 1 Paper</p>		
	<b>3</b>	<p><b>Unit 3</b> Safely collect accurate and reliable data Process data including statistical tests and graph plotting Draw conclusion and interpret data Evaluate the effectiveness and validity of their practical. They will also learn key facts and carry out investigations in these areas: Enzymes structure and activity Diffusion Plant growth and distribution Energy content of fuels Electrical circuits</p>	<p><b>Pit stops</b> Unit 3.1 Unit 3.2</p> <p><b>End of term assessment</b> Unit 3 Paper</p>		The final term on year 12 will provide opportunities to revise the material covered for the Unit 1 exam in May plus after the exams more time on the practical aspects.
<b>13</b>	<b>1</b>	<p><b>Unit 3</b> Safely collect accurate and reliable data Process data including statistical tests and graph plotting Draw conclusion and interpret data Evaluate the effectiveness and validity of their practical. They will also learn key facts and carry out investigations in these areas: Enzymes structure and activity Diffusion Plant growth and distribution Energy content of fuels Electrical circuits</p>	<p><b>Pit stops</b> Unit 3.3 Unit 3.4 Unit 3.5 Unit 3.6</p> <p><b>End of term assessment</b> Unit 3 Paper</p>		The first term of Year 13 will focus on the skills and knowledge required for the Unit 3 assessment in January. There will be many opportunities for practical work and several practice papers to build confidence prior to practical assessment and written exam

	<b>2</b>	<p><b><u>Unit 2</u></b> Describe the use and accuracy of key lab equipment Explain how to calibrate equipment Carry out, analyse and evaluate a calorimetry practical</p> <p><b><u>Unit 8</u></b> Students will learn the key features and functions, and disorders and treatments for the following human body systems: Digestive System Musculoskeletal System Lymphatic System</p>	<p><b><u>Unit 2</u></b> Learning aim A Learning aim B</p> <p><b><u>Unit 8</u></b> Learning aim A Learning aim B</p>	Completion of the portfolio based on personalised feedback	The outcomes in this term will be driven by the students' needs and whether they need or want to take resits for the externally assessed units.
	<b>3</b>	<p><b><u>Unit 2</u></b> Accurately make a standard solution and use it in titrations to calculate the concentration of an unknown solution. Use colorimetry to determine concentration Carry out chromatography experiments on plant material and amino acids. Evaluate the skills gained throughout the year and targets to address any weaknesses.</p> <p><b><u>Unit 8</u></b> Students will learn the key features and functions, and disorders and treatments for the following human body systems: Digestive System Musculoskeletal System Lymphatic System</p>	<p><b><u>Unit 2</u></b> Learning aim C Learning aim D</p> <p><b><u>Unit 8</u></b> Learning aim C</p>	Completion of the portfolio based on personalised feedback	The outcomes in this term will be driven by the students' needs and whether they need or want to take resits for the externally assessed units.