

Year 12 Curriculum Overview: Level 3 National Extended Certificate in Applied Science



	Topics/ content outline:	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	Unit 1 Principles of Science 1.Animal and plant cells 2. Tissues 3.Atomic structure and bonding 4.Chemical and physical properties of substances related to their uses 5.Waves and their application in communications.	 Periodicity and properties of elements Production and uses of substances in relation to properties Structure and functions of cells and tissues Cell specialisation Tissue structure and function Working with waves Waves in communication Use of electromagnetic waves in communication 	This unit is assessed through an examination worth 90 marks with a total time of 2 hours, undertaken in three timed sessions of 40 minutes for each of Biology, Chemistry and Physics. Learners must take all three parts of the single examination in the same series to be awarded a result. The paper will include a range of question types, including multiple choice, calculations, short answer and open response. These question types will assess discrete knowledge and understanding of the content in this unit.	Encourage the use of Showbie to access lesson resources. Ensure they are spending time studying the content during the week. Encourage the attendance of afterschool interventions. Remind to check Classcharts on a regular basis and to complete all homework on time. Flashcards will be provided to aid in their revision.
Spring Term	Unit 2 Practical Scientific Procedures and Techniques A. Undertake titration and colorimetry to determine the concentration of solutions. B. Undertake calorimetry to study cooling curves. C. Undertake chromatographic techniques to identify components in mixtures. D. Review personal development of scientific skills for laboratory work.	 Laboratory equipment and its calibration Preparation and standardisation of solutions using titration Colorimetry Thermometers Cooling curves Chromatographic techniques Application of chromatography Interpretation of a chromatogram Personal responsibility Interpresonal skills Professional practice 	Learners will be introduced to quantitative laboratory techniques, calibration, chromatography, calorimetry and laboratory safety, which are relevant to the chemical and life science industries. You will submit reports for each assignment. There is a maximum number of four summative assignments for this unit. The relationship of the learning aims and criteria is: Learning aim: A (A.P1, A.P2, A.M1, A.D1) Learning aim: B (B.P3, B.P4, B.M2, B.D2) Learning aim: C (C.P5, C.P6, C.M3, C.D3) Learning aim: D (D.P7, D.M4, D.D4)	Encourage the use of Showbie to access lesson resources and attendance to all lessons to ensure you complete all the practical's required for each assignment. Ensure they are spending time studying the content during the week. Encourage the attendance of afterschool interventions. Remind to check Classcharts on a regular basis and to submit your coursework on time.
Summer Term	Unit 3 Science Investigation Skills 1.Planning a scientific investigation 2. Data collection, processing, analysis and interpretation. 3.Drawing conclusions and evaluations. 4. Enzymes in action 5.Diffusion of molecules 6.Plants and their environments 7.Energy content of fuels 8.Electrical circuits	 Planning a scientific investigation Data collection, processing, analysis and interpretation. Drawing conclusions and evaluations. Enzymes in action Diffusion of molecules Plants and their environments Energy content of fuels Electrical circuits 	To complete the written task in Part B, learners will be provided with Part A. Part A will outline the method/materials used to generate results/observations from a practical investigation. This unit will be assessed through a written task (Part B) worth 60 marks. The task is set and marked by Pearson and will be completed in one sitting, within a supervised assessment session timetabled by Pearson. The assessment task will assess learners' ability to plan, record, process, analyse and evaluate scientific findings, using secondary information/data from scientific investigations related to the unit content.	Encourage the use of Showbie to access lesson resources. Ensure they are spending time studying the content during the week. Encourage the attendance of afterschool interventions. Remind to check Classcharts on a regular basis and to complete all homework on time.



Year 13 Curriculum Overview: Level 3 National Extended Certificate in Applied Science



	Topics/ content outline:	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	Unit 3 Science Investigation Skills 1.Planning a scientific investigation 2. Data collection, processing, analysis and interpretation. 3.Drawing conclusions and evaluations. 4. Enzymes in action 5.Diffusion of molecules 6.Plants and their environments 7.Energy content of fuels 8.Electrical circuits	 Planning a scientific investigation Data collection, processing, analysis and interpretation. Drawing conclusions and evaluations. Enzymes in action Diffusion of molecules Plants and their environments Energy content of fuels Electrical circuits 	To complete the written task in Part B, learners will be provided with Part A. Part A will outline the method/materials used to generate results/observations from a practical investigation. This unit will be assessed through a written task (Part B) worth 60 marks. The task is set and marked by Pearson and will be completed in one sitting, within a supervised assessment session timetabled by Pearson. The assessment task will assess learners' ability to plan, record, process, analyse and evaluate scientific findings, using secondary information/data from scientific investigations related to the unit content.	Encourage the use of Showbie to access lesson resources. Ensure they are spending time studying the content during the week. Encourage the attendance of afterschool interventions. Remind to check Classcharts on a regular basis and to complete all homework on time.
Spring Term	Unit 8 Physiology of Human Body Systems Learners will focus on the physiological make up of three human body systems (musculoskeletal, lymphatic and digestive), how the systems function and what occurs during dysfunction.	 Structure of the musculoskeletal system Function of the musculoskeletal system Health matters and treatments related to the musculoskeletal system Structure of the lymphatic system Function of the lymphatic system Function of the lymphatic system Function of the lymphatic system Health matters and treatments related to the lymphatic system Structure of the digestive system Function of the digestive system Function of the digestive system Health matters and treatments related to the digestive system 	In this unit, you will focus on three body systems: musculoskeletal, lymphatic and digestive. You will submit reports for each assignment. There is a maximum number of three summative assignments for this unit. The relationship of the learning aims and criteria is: Learning aim: A (A.P1, A.P2, A.M1, A.D1) Learning aim: B (B.P3, B.P4, B.M2, B.D2) Learning aim: C (C.P5, C.P6, C.P7, C.M3, C.M4, C.D3)	Encourage the use of Showbie to access lesson resources and attendance to all lessons to ensure you complete all the practical's required for each assignment. Ensure they are spending time studying the content during the week. Encourage the attendance of afterschool interventions. Remind to check Classcharts on a regular basis and to submit your coursework on time.