



Curriculum Map cover sheet

Subject: Applied Science	Year Group: 12 & 13	Key Stage: 5
Links to prior learning This course builds on the science learnt at GCSE in the following areas: - Cell structure - Ecosystems - Structure and Bonding - Rates of Reaction - Electricity - Motion - Scientific investigation skills: identifying variables, plotting and interpreting graphs, method writing	Retrieval Practice Retrieval questions with their answers are shared with students for the examination topics. These are then practised at the start of lessons. Links are made between topics and these are highlighted to students by their teachers.	Adaptive teaching strategies Challenging tasks are set with stepping stones available if needed to enable all students to make good progress. Teachers will re-explain concepts as necessary and provide one to one support in lessons where needed.
Literacy There are many key terms in the course which are taught explicitly as they are encountered. The meaning of those terms are tested in regular retrieval practice. In the coursework elements of the course there is extensive writing and scientific reporting. The structure of this is explained to students. They have opportunities to practise this with sample assessment material.	Oracy Students are encouraged to give full answers out loud in lessons. Sentence starters and prompts are provided to help with this. Students have to present their investigation to the rest of their peers and evaluate each other's presentation skills.	Numeracy A minimum of 10% of the assessment is based on mathematical skills. Students will need to be able to convert between units, use expressions in decimal and standard form, use ratios, fractions and percentages, estimate results, use cos functions on their calculator, find the mean, mode and median of data, understand the principles of representative sampling, calculate and use standard deviation, substitute values into equations and solve them, plot graphs, calculate the gradient of a graph, sketch graphs, calculate

		the area, surface area and volume of 2D and 3D shapes.
Careers across the Curriculum	Wider Curriculum opportunities (List extracurricular and enrichment activities related to this subject)	Super Curriculum (Outline opportunities for students to extend their learning beyond the standard curriculum)
Assessment and feedback (Detail how often feedback is given, how it is given, when etc)		

Applied Science AAQ	F180 Fundamentals of Science	F181 Science in Society	F182 Investigating Science	F184 Environmental Studies	F185 Forensic Biology
Content covered	In this unit you will learn about the structure and composition of substances and how they can combine to form new useful substances. Exploring living systems is equally rewarding, enabling you to find out more about yourself and how you are placed in your environment. You will also explore electrical circuits which will support understanding of applications of Physics, the fundamental theory which supports medical physics, and how we can interpret data about the physical world.	In this unit you will learn about the skills scientists use and the roles they perform in an international scientific community. You will examine different types of scientific data and learn how scientists use them to draw conclusions that can contribute to scientific advancement. You will investigate what makes a scientific theory different to a scientific law by reviewing past scientific discoveries. You will explore current scientific developments and future challenges facing society that science will need to solve. You will consider ways that science is communicated in the scientific and wider communities, the implications of miscommunication and the importance of communication in driving future scientific advances.	In this unit you will learn about the role of a research scientist in industry by learning how to conduct your own scientific investigation. You will develop the skills to research, plan and risk assess your investigation before safely undertaking the practical tasks. You will learn how to collect and analyse data and communicate your findings in a scientific report and a presentation. Finally, you will develop the skills to evaluate your investigation, including assessing the effectiveness of the methods used and suggesting improvements that could be made. You will be able to assess the relevance of your investigation to environmental, commercial and industrial processes.	In this unit you will learn to use primary and secondary data to study ecosystems. You will develop the skills to carry out in situ fieldwork investigations to survey an area using different sampling techniques. You will learn about the different surveys available for studying the environment and how in situ and ex situ conservation strategies are used to protect species and their environments. You will also learn how to use online information to learn about biodiversity and compare different ecosystems. Finally, you will be able to research some of the strategies used to monitor and treat waste products in places such as landfill sites and water courses.	In this unit you will learn how to perform investigations of the macro- and ultrastructure of cells and tissues from fresh and prepared material, using optical microscope techniques and electron micrographs. You will develop the skills to complete the safe culturing of bacteria and to perform practical investigations to collect, log and analyse biological evidence using standard procedures. You will learn how to carry out risk assessments, following current guidance, before completing any practical work. You will develop confidence in using laboratory equipment and microscopes.
How is this assessed?	This unit is assessed by an exam. The exam is 1 hour and 30 minutes and has 70 marks in total.	This unit is assessed by an exam which contains pre-release material. The exam is 1 hours and 15 minutes and has 50 marks in total.	This unit is assessed by coursework. You will choose an investigation and then plan it, carry it out and analyse and evaluate it.	This unit is assessed by coursework. You will plan a survey and then analyse the data you collect.	This unit is assessed by coursework. You will analyse a crime scene by carrying out forensic tests.
Percentage of the course	25%	17%	25%	17%	17%
When is it taught?	Year 12	Year 13	Year 12	Year 13	Year 13