	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7 curriculum overview	Investigative Skills	Biology -B2- Organisation	Biology -B3- Reproduction	Biology -B4- Ecosystems	Biology -B5- Photosynthesis,	Intervention with RPA(required Practical Assessment) focus:
	Biology - B1- Cells Chemistry - C1- States of Matter	Chemistry - C2- Atoms, Elements and Compounds Physics -P2-	Chemistry - C3- Periodic Table Physics - P3-	Chemistry -C4- Separating Techniques Physics - P4-	Biology -B6 - No Limits Project - Fitness	B1-6 C1-5
	Physics - P1- Energy	Forces	Electricity	Waves Physics P5- Light (Project)	Chemistry-C5- Acids and Alkalis	P1-5
Skills	Observing Communicating Classifying Predicting Practical procedures	Communicating Classifying Inferring Measuring	Observing Communicating Classifying Measuring Predicting	Communicating Classifying Inferring Measuring Predicting	Observing Classifying Inferring Predicting	Observing Communicating Classifying Measuring
Personal Development links	Living in the wider world, Rights, Responsibilities & British Values, Health and Wellbeing	Health and Wellbeing (sustainable production and ethics in medicine, Healthy Choices)	Relationships and sex education (preventing pregnancy)	Ethical development (conservation) Critical thinking (is seeing believing?)	Critical thinking (is seeing believing?) Healthy Diet and Healthy Choices	Making different salts and understanding risk when using Chemicals. Resilience through revision techniques for End year test.
Career links	Electrician, Chemical engineer	Medicine, Veterinary options,	Midwifery, Medicine, Embryologist, Engineering	Farmer, Conservationist, Vet, Botanist Geologist,	Botanist, Seed quality assurer, Chemist and	Lab technician, Teacher, Chemist, Physicists.

and Medicine	Farming, Botanist	and Architect	Audiologist and Chemist.	Personal Trainer.	
	and Quantity				
	surveyor				

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 8 curriculum overview	Biology -B7- Respiration Chemistry - C6- Metals and Non- metals Physics - P6- Forces II	Biology -B8- Microorganisms Chemistry - C7- Energetics Physics -P7- Force multipliers	Biology - B9- DNA and Genes Chemistry -C8- Global Challenges Physics - P8- Electromagnets	Biology -B10- Adaptation Chemistry -C9- Earth's Resources Physics -P9- Energy II	Maths Skills in Science KS3M1 Chemistry-C10- Separating Techniques Physics-P10- Physics in medicine.	Intervention: RPA(required Practical Assessment) focus: Analysis and Exam Practice B7-10 C6-10 P6-10
Skills	Observing Communicating Classifying Predicting	Communicating Classifying Inferring Measuring Analysing	Observing Communicating Classifying Measuring Predicting Analysing	Communicating Classifying Inferring Measuring Predicting	Observing Classifying Inferring Predicting	Observing Communicating Classifying Calculating Recall
Personal Development links	Living in the wider word (skills needed for science careers) Healthy diets and Exercise	Living in the wider word (skills needed for science careers) Disease management and control - e.g. COVID precautions.	Awareness of how life has evolved and extinction of animals and plants. Religious Education Conservation Rights, Responsibilities	Ethical development (conservation) Awareness of how life has evolved and extinction of animals and plants. Conservation -Personal responsibility of own	Caring for the environment and its' importance Medicine and treatments - Healthy Choices	Resilience revision techniques for End year test. Practical Ethics and research development. Formulating Hypothesis

		Effects of disease on human life e.g. cancer		carbon footprint		and proving it.
Career links	Nutritionist, Personal trainer, Blacksmith Jeweler, Fabricator, Animal Nutritionist, Food technologist, Medical sales representative and Community Education Officer	Engineer, Physics Professor, Programmer, Data Analyst, Bio- technologist, Clinical laboratory scientist, Doctor, Nurse, Midwife, Parasitologist, Food Scientist and Pharmacist	Animal Conservation, Chemical Analyst, Geographer, Academic researcher, Clinical scientist - genomes Pharmacologist, Plant breeder, Plant geneticist and Research scientist	Animal Conservation Academic researcher, Clinical scientist - genomes Pharmacologist, Plant breeder, Plant geneticist, Research scientist, Electromagnetic engineer and Robotic Engineer	Technician Nuclear Engineer, Nuclear Physicist, Research fellow in experimental Nuclear physics, Nuclear Environmentalist Production assistant, Laboratory technician and Production supervisor - chemical plant and NHS Researcher	Lab technician, Teacher, Chemist, Physicists and Biologist.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 9 curriculum overview	Biology -B1 - Cells and Organisation	Biology <u>-</u> B2 - Cell Division Biology -B7 - Non- communicable diseases	Biology -B3 - Organisation and the digestive system	Biology-B4 - Organisation in Animals and Plants	Biology -B5- Communicable diseases,	Intervention; RPA focus(required Practical Assessment) Analysis and Exam Practice
	Chemistry -C10- Chemical analysis Chemistry -C11 Earth's atmosphere	Chemistry -C12 - Earth's resources	Chemistry -C7 - Energy Changes	Chemistry-C5 - Chemical changes	Biology -B6- Preventing and Treating Diseases	B1-4, B7 C10,C12,C7,C5 P1-4
	Physics -P3 - Energy resources	Physics -P1 - Energy	Physics-P2 - Energy and heating	Physics-P4 - Electrical Circuits	Physics-P5- Electricity at Home	
Skills	Communicating Classifying Inferring Measuring Analysing	Communicating Classifying Inferring Measuring	Observing Communicating Classifying Measuring Predicting	Communicating Classifying Inferring Measuring Predicting	Observing Classifying Inferring Predicting	Observing Communicating Classifying Measuring
Personal Development links	Students explore the change in Scientific understanding in society through time eg. History of	Topics over all 3 Specialisms linked and investigating justified views about moral and ethical issues eg.	Part of moral education is to 'offer reasoned views'; in Physics we seek to do this in every problem we solve, assuming as little as possible and	Students learn the value of Science in improving a Society's culture eg. Treatment of diseases, management of Global resources and	Multicultural Britain, Rights & responsibilities, ethical issues, Breaking down stereotypes. Students learn the value of Science in improving a	Resilience revision techniques for GCSE . Science offers students the opportunity to reflect on their mistakes

	the Atom, Lamarck's theory and Darwin's Theory.	Renewable energy, Global warming, Using the Earth's resources and Sustainability. Understanding the consequences of their behavior and impact in future. Students are given the opportunity to discuss this in class. Scientific method is taught to help students distinguish between information and misinformation.	progressing procedurally. When doing energy changes In Chemistry and energy in Physics, students' logical thinking is vital to broader conceptual thought, and we have the highest expectations of our students' working and thought-processes to ensure they develop more broadly as reasoned individuals.	Communications.	Society's culture eg. Treatment of diseases, management of Global resources and Communications.	in both practical and theory work. Through our practical elements, students form hypotheses which they then test and defend through carrying out experiments and research. Students reflect on their own work by use of green pen and tracking of their own progress through the subject.
Career links	Biochemist, Microbiologist, Vet. Archaeologist, Volcanologist, Chemical Engineer, Radiologist, Mine worker, Construction worker.	Midwifery, Medicine, Microbiologist, Volcanologist Engineering, Geologist and Architect	Medicine, Veterinary options, Farming, Botanist and Quantity surveyor, H&S inspector.	Medicine, Veterinary options, Farming, Botanist, Electrician and Quantity surveyor	Electrician, Chemical engineer, Dietician, Sport Scientist and Medicine	Lab technician, Teacher, Chemist, Physicists and Biologist.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 10 curriculum overview	Biology-B8 - Photosynthesis	Biology - B10 - Human Nervous System	Biology - B11 - Hormonal Coordination	Biology -B12 - Reproduction	Biology -B13- Variation and Evolution	Intervention and RPA focus for:
	Biology -B9- Respiration					B6-9: Preventing and Treating Diseases, Non- communicable diseases, Photosynthesis,
	Chemistry -C8 - Rates and Equilibrium	Chemistry -C9 - Crude oils	Chemistry - C1- Atoms and Elements	Chemistry -C2 - The periodic table	Chemistry -C3- Structure and Bonding.	Respiration Chemistry-C8- Rates and Equilibrium
	Physics -P6 - Density	Physics -P7 - Radioactivity	Physics -P8 - Forces in Balance	Physics -P9 - Speed and Velocity	Physics -P10- Forces and Motion.	Chemistry -C9- Crude Oils
	Intervention: B1 Cells and Transport, C10 Chemical Analysis, C11 Earth's atmosphere, P1 Changes in Energy	Intervention: B2 Stem Cells, C12 Earth's resources, P2 Energy Transfers by Heat	Intervention: B3 Organisation and the Digestive System, C7 Energy changes, P3 Energy Resources	Intervention: B4 Organisation in Animals and Plants, C5 Chemical Changes, P4 Electricity at Home	Intervention: B5 Communicable Diseases; C5 Chemical Changes	Physics P6-9 Molecules and Matter; Radioactivity, Forces in Balance, Motion Revision for End of Year Test
Skills	Observing Communicating	Communicating Classifying	Observing Communicating	Communicating Classifying	Observing Classifying	Observing Communicating

	Classifying Predicting	Inferring Measuring Analysing	Classifying Measuring Predicting Analysing	Inferring Measuring Predicting	Inferring Predicting	Classifying Calculating Recall
Personal Development links	Students are introduced early on to the different diet and cultural needs of individuals. This builds to include responsible farming, 'Farm to Fork' food (Photosynthesis) Processing, including organic and mass-produced food issues. Practical lessons are a team effort and everyone is expected to work together to complete tasks, and ensure Rates and reaction practical's are carried out safely. Health and Safety is core to pupils understanding the rules and Methods when carrying out	We also look at recent events like Chernobyl and Fukushima showing their effect on society and how Science can contribute to good and bad "good and Evil"	Reflection and creativity are key characteristics of a successful Scientist, and we endeavor to ensure our students have opportunities to develop these. Each topic includes feedback and reflection by the teacher and student on how best to proceed, with the chance to demonstrate further understanding in the Go Green task. Creativity is needed in many problem- solving tasks when doing Forces and using periodic tables when balancing Equations in Chemistry.	The study of reproduction allows students to reflect on their own beliefs and that of others, and the impacts our modern global world population has on us and the environment around us. Throughout Biology topics students are able to reflect and share their own experiences. Students are challenged on their impact on the environment and how to change this. As well as the impact on that of other organisms and their impact on decay.	Enquiry challenge question link for every topic. To engage students as well as link to different British values different faiths beliefs eg. sensitivity to Creationism and Evolution, Vaccinations or no vaccinations. Acceptance of other pupils' beliefs and values. Homework in every lesson which is peer assessed developing collaborative skills. Practical group work instilling a sense of group responsibility.	Resilience revision techniques for GCSE. Science offers students the opportunity to reflect on their mistakes in both practical and theory work. Through our practical elements, students form hypotheses which they then test and defend through carrying out experiments and research. Students reflect on their own work by use of green pen and tracking of their own progress through the subject.

	practical topics like Rates and Density.					
Career links	Dentist, Metal worker, Chemist, Biochemist Sport Scientist.	Neurosurgeon, Doctor, Radiologist, Oncologist, Chemical engineer, H&S inspector, Quantity surveyor, Chemist.	Oncologist, Mid -wife, Family planer, Researcher, Engineer, Nautical engineer, Pilot Dietitian	Oncologist, Mid -wife, Family planer, Researcher, Engineer, Nautical engineer, Pilot Dietitian	Activist, Politician, Sociologist, Marine Biologist, Park ranger, Zoologist	Writer, Researcher, Lab technician, Teacher, Chemist, Physicists and Biologist

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 11 curriculum overview	Biology -B14- (Combined) Genetics and Evolution;	Biology -B15- (Combined) - Adaptations, Interdependence Biology-B16- Competition, Organising and Ecosystem (Combined), Biology -B17-Biodiversity and Ecosystem	Biology- Revision Yr.9/10 topics B3 Organisation and digestive system, B10 Nervous system, B11 Hormonal System Re	Biology -Revision Yr.9/10/11 B4 Organisation in animals and plants B12 Reproduction B13 Evolution B14 Genetics B15 Adaptation B16 Competition B17 Ecosystems	Paper 1 Exam Practice Required Practical Assessment Applied Questions B1-B9 C1-7 P1-7 Half Term Intervention	Revision of content and exams Paper 2 P8-13 B10-17 C8-12
	Chemistry-C12- (Combined) Earth Resources; Physics-P11- P12 - Waves, Physics-P12- Electromagnetic Spectrum (Combined)	Chemistry -C6- Electrolysis Physics-P13- Electro- magnets	Chemistry- Revision Yr.9/10 C8 Rates Equilibrium C9 Crude oils C10 Chemical analysis Physics- Revision Yr.9/10 P3 Energy resources P8 Forces in Balance	Chemistry Revision C11 Earth's Atmosphere C12 Earth's Resources Physics Revision P4 Electricity P11 Waves P12 Electromagnetic spectrum P13 Electro Magnets		

	Intervention; B1-4 Cells and Transport, Cell Division, Organisation and Digestive System, Transport in Animals and Plants. (Combined) C1-4 Atoms, Bonding and Moles, Periodic Table, Structure and Bonding, Chemical Calculations (Combined) P1-3 Changes in Energy Stores, Energy Transfers by Heat, Energy Resources (Combined)	Intervention: B5-9 Communicable diseases, Preventing and treating diseases, Non- communicable diseases, Photosynthesis, Respiration; C5-7 Chemical Changes, Electrolysis, Energy Changes, P4-7 Electrical Circuits, Electricity in the Home, Molecules and Matter, Radioactivity	P9 Speed and velocity P10 Forces and motion Intervention: B10-11 The nervous system, Hormonal Coordination, C8-9 Rates and Equilibrium, Crude Oil, P8-10 Forces in Balance, Motion, Forces in Motion	Exam Practice for all 3 subjects Intervention: B12-17 Reproduction, Variation and Evolution, Genetic Evolution, Adaptations, Inheritance and Competition, Organising an Ecosystem, Biodiversity in the Ecosystem; C10-12 Chemical Analysis, The Earth's Atmosphere, The Earth's Resources; P11- 13 Wave Properties; Electromagnetic Waves, Electromagnetism - Exam practice		
Skills	Communicating	Observing	Communicating	Observing	Observing	Observing
	Classifying	Classifying	Classifying	Communicating	Communicating	Communicating
	Inferring	Inferring	Inferring	Classifying	Classifying	Classifying
	Measuring	Predicting	Measuring	Measuring	Measuring	Measuring

	Predicting		Analysing	Predicting Analysing	Predicting Analysing	Predicting Analysing
Personal Development links	Students consider moral behavior. They investigate and offer reasons views about moral and ethical issues in order to consider different Genetic and evolution I viewpoints and theories.	Students will learn about the Commonwealth, the EU, Fairtrade, NATO and the UN. As part of their learning students will, to some extent, learn about and consider different cultures and different living and working conditions around the world. Conservation programs farming. Waste disposal decay. Earth resources recycling and laws related.	Science helps students think about culture in our society, their own culture but also how that culture has been shaped and morphed by other factors such as Renewable energy sources, Crude oil uses. Different laws when driving and taking drugs age restrictions in different countries.	The study of reproduction allows students to reflect on their own beliefs and that of others, and the impacts our modern global world population has on us and the environment around us. Throughout Biology topics students are able to reflect and share their own experiences. Students are challenged on their own impact on the environment. As well as that of other organisms and their impact on decay. Revision techniques "remembering more- knowing more"	Science offers students the opportunity to reflect on their mistakes in both practical and theory work. Through our practical elements, students form hypotheses which they then test and defend through carrying out experiments and research. Students reflect on their own work by use of green pen and tracking of their own progress through the subject. This is reflected in these final terms so students develop their own resilience and development.	Science offers students the opportunity to reflect on their mistakes in both practical and theory work. Through our practical elements, students form hypotheses which they then test and defend through carrying out experiments and research. Students reflect on their own work by use of green pen and tracking of their own progress through the subject. Resilience revision techniques for GCSE .
Career links	Activist, Politician, Sociologist, Marine Biologist, Park ranger, Zoologist	Activist, Politician, Sociologist, Marine Biologist, Park ranger, Zoologist Engineer, Electrician, Physicist, Fitter and turner, Jeweler and Lab -	Dentist, Metal worker, Chemist, Biochemist Sport Scientist.	Medicine, Veterinary options, Farming, Botanist, Electrician and Quantity surveyor	Activist, Politician, Sociologist, Marine Biologist, Park ranger, Zoologist. Oncologist, Mid -wife, Family planer, Researcher, Engineer,	Technician Nuclear Engineer, Nuclear Physicist, Research fellow in experimental Nuclear physics, Nuclear Environmentalist

Technician.			Nautical engineer, Pilot	Production assistant, Laboratory technician and Production supervisor - chemical plant and NHS Researcher
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Biology	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 12 curriculum overview	Chapters 2 & 3a from Module 2. This will cover: microscopy, cell ultrastructure, and an introduction to biological molecules. Chapter 10 from Module 4. This will cover both classification and evolution by means of natural selection. PAG 1.1 Microscopy PAG 9.1 Qualitative An	Chapter 3b and 4 from Module 2. This will cover: and introduction to DNA and ATP as biological molecules. It will also cover enzymes. Chapter 11 from Module 4. This will cover biodiversity. PAG 4.1 Enzymes PAG 3.1 Sampling	Chapters 5 and 6 from Module 2. This will cover: plasma membranes as well as cell division and stem cells. Chapter 12 from Module 4. This will cover disease and immunity. PAG 8.1 Osmosis	Chapters 7,8 and 9 from Module 3. This will cover gas exchange and transport systems in: plants, fish and mammals.	<b>Finishing of Module 3.</b> Preparing for AS Examinations. This will cover more on exam techniques. Some specifically tailored to each student.	Chapters 13, 19 and 17 from A2 This will cover: neurones, action potential, mutations, genetic regulation and photosynthesis. (though this is potentially subject to change based on cohort)
Skills	Students will develop skills using microscopy and standard qualitative analysis of substances in the lab. They will begin to develop exam skills	Students will develop laboratory skills using serial dilutions (a laboratory staple) and also sampling (a staple of biodiversity work). Besides this, students	Students will develop debate skills as well as presentational skills during Chapter 5. Students will have their working memory tested extensively during the	Students will have the opportunity to practice examination skills further in these more straightforward topics. In almost all lessons, students will be	Students will refine their examination skills as well as take on metacognitive strategies to assist in their learning. In almost all lessons,	Students will interpret representations of neuron function Students will also develop their ability to synthesise new knowledge in chapter

	and conceptual learning. In almost all lessons, students will be required to interpret, analyse and apply their learning.	will need to continue developing their mental models. In almost all lessons, students will be required to interpret, analyse and apply their learning.	immunity topic. In almost all lessons, students will be required to interpret, analyse and apply their learning.	required to interpret, analyse and apply their learning.	students will be required to interpret, analyse and apply their learning.	19. Photosynthesis will develop their working memory as another simultaneous reaction. In almost all lessons, students will be required to interpret, analyse and apply their learning.
Personal Development links	Students will also have to have their memories developed in Chapter 2 and 10 which are full of much deeper content than that seen in GCSE. Students will have to learn concepts instead of facts. Students will need to understand natural selection as a real concept and how it does or does not interact with religion.	Students will need to develop their independence to follow through with these terms PAGS which are more complex. They will need to practice self- sufficiency, problem solving and interdependence/ teamwork.	Students will develop their ability to form and articulate their own arguments respectfully and discuss ethics. They will also weigh up and appreciate the complexities of research funding. Additionally, students will need to understand systems that interact and act concurrently and synchronistical. This is a potentially world- altering view from the more standard Aristotelian logic of a>b>c.	Students will learn about their heart and use cardiovascular terms - which have wide-reaching implications for knowledge of fitness.	Students will learn to manage their time, workload and stress. Students will also experience (for some of them their first) a major stressor with a national deadline - valuable experience in academia.	Students will gain valuable experience of the jump from AS to A2.
Career links	Biochemist, Pharmacologist, Chemist, Microbiologist,	Biochemist, Pharmacologist, Geneticist, Food Scientist, Biological	Drug Developer, Pharmacist, Beauty Scientist, Immunologist, Virologist,	Sport Scientist, Medicine, Personal Trainer, Cardiologist, Botanist, Zoologist,	As they are preparing for exams, there are no specific career foci. However all those	Botanist, Agriculture, Horticulture, Geneticist, Biological Engineer,

Virolo Epide Scien Etholo	llogist, lemiologist. Food ntist, Technician, plogist, Zoologist.	Engineer, Sports Scientist, Environmentalist, Environmental Scientist.	Epidemiologist, Medicine, Conservationist, Developmental Biologist, Obstetrician.	Agriculture, Horticulture.	mentioned (and many others) could be explored.	Developmental Biologist, Sports Scientist.
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Chemistry	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 12 curriculum overview	Module 1 : Development of Practical Skills in Chemistry & Intro to Foundations in Chemistry	Module 2: Foundations in Chemistry	Module 3 : Periodic Table and Energy	Module 4 : Core Organic Chemistry & Analysis	Revision of Content and Exam Practice	Exams & Intro to Module 5 Physical Chemistry
Skills	Independent thinking Use and application of scientific methods and practices Research and referencing Use of Instruments and equipment 2 Use of apparatus and techniques	To develop important quantitative techniques involved in measuring masses, gas and solution volumes, including use of volumetric apparatus. To develop mathematical skills during their study of the amount of	to develop important qualitative practical skills, especially observational skills required for analysis, and accurate quantitative techniques involved in determination of energy changes and reaction rates. To develop mathematical skills when studying enthalpy changes and reaction rates and	To develop important organic practical skills, including use of Quick fit apparatus for distillation, heating under reflux and purification of organic liquids. To consider responsible use of organic chemicals in the environment. To develop skills to reduce demand for hydrocarbon fuels, processing plastic waste productively, and preventing use of ozone- depleting chemicals.	This module provides a context for synoptic assessment and the subject content links strongly with the content encountered in Module 2: Foundations in chemistry and Module 3 : The periodic table and Module 4: Core organic chemistry.	Develop essential knowledge and understanding of different areas of the Chemistry Module 1-4 and how they relate to each other

		substance and when carrying out quantitative practical work.	when carrying out quantitative practical work			
Personal Development links	Applying knowledge of health and safety practices in practical's and experimentation ensures personal safety, minimizes the risk of accidents or exposure to harmful substances, and promotes responsible laboratory conduct.	Develop competence and confidence in a variety of practical, mathematical and problem solving skills.	Develop their interest in and enthusiasm for the subject, including developing an interest in further study and careers associated with the subject.	The information about organic compounds such as Fuels and Polymers and their effect on the environment as well as in medicines, including the short-term and long-term health risks associated with their use.	Students implement strategies to understand and build resilience, as well as how to respond to whole syllabus content to succeed in exam style questions.	Integrating effective exam techniques develops valuable personal skills: time management, organization, critical thinking, self-discipline, stress management, and reflective practice, to enhance overall capacity for growth and success.
Career links	Bioleaching lab technicians Scientific Consultant Chief technology officer Secondary school science teacher Senior science manager Soil scientist Solar technology engineer Marine biogeochemist Medicinal chemist, drug discovery Pollution control officer Professor of biorefineries University lab technician Professor of environmental	Radioactive waste consultant Analyst –higher apprentice, organic chemistry Professor of environmental chemistry Medicinal chemist, drug discovery Secondary school science teacher	Museum scientist Secondary school science teacher Analytical chemists Thames Water Laboratory analyst Process chemist – higher apprentice,	Museum scientist Pollution control officer University laboratory technician apprentice > Professor of environmental chemistry Forensic scientist Analytical technician, plastics Assistant analyst, drug control Nano toxicologist Astrochemistry Research assistant, healthcare Atmospheric chemist		

chemistry	Pollution control officer	Bioanalytical scientist Scientific associate, NMR spectroscopy	
	Analytical chemists, Thames Water		

Physics	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 12 curriculum overview	Matter and radiation, quarks and leptons and forces and equilibrium	Quantum Phenomena, waves, motion and Newton's laws	Optics and force and momentum	Electric current, circuits, work energy and power and materials	Revision for AS exam	Circular motion, simple harmonic motion, thermal physics and gasses.
Skills	Mathematical skills - rearranging equations. Particle diagrams.	Mathematical skills - rearranging equations. Graph interpretation. Practical skills - constructing circuits, taking measurements, following written instructions, research, data analysis and interpretation.	Mathematical skills - rearranging equations. Practical skills - constructing circuits, taking measurements, following written instructions, research, data analysis and interpretation.	Mathematical skills - rearranging equations. Practical skills - constructing circuits, taking measurements, following written instructions, research, data analysis and interpretation.	Time management, memory, and cognitive workload. Students implement strategies to understand and build resilience, as well as how to respond to whole syllabus content to succeed in exam style questions.	Mathematical skills - rearranging equations. Practical skills - constructing circuits, taking measurements, following written instructions, research, data analysis and interpretation.
Personal Development links	History of science and its role in society - particle wave duality.	Development of their understanding of fundamental mechanics of our world	Practice implementing skills around health and safety that replicate a workplace	Material science and how this shapes any form of device or construction. The	Students implement strategies to understand and build resilience, as well as	Students can evaluate their studies and make informed choices about the best choices for

		and the universe.	environment.	limitations of our world's resources and how we can use them.	how to respond to whole syllabus content to succeed in exam style questions.	their future careers.
Career links	Academic researcher,	Academic researcher,	Academic researcher,	Academic researcher,	Academic researcher,	Academic researcher,
	geophysics. radiation	geophysics. radiation	geophysics. radiation	geophysics. radiation	geophysics. radiation	geophysics. radiation
	specialist, material	specialist, material	specialist, material	specialist, material	specialist, material	specialist, material
	science, accounting,	science, accounting,	science, accounting,	science, accounting,	science, accounting,	science, accounting,
	data analysis, software	data analysis, software	data analysis, software	data analysis, software	data analysis, software	data analysis, software
	engineer, aerospace	engineer, aerospace	engineer, aerospace	engineer, aerospace	engineer, aerospace	engineer, aerospace
	and defense,	and defense,	and defense,	and defense,	and defense,	and defense,
	meteorology, oil and	meteorology, oil and	meteorology, oil and	meteorology, oil and	meteorology, oil and	meteorology, oil and
	gas	gas	gas, civil engineer	gas, electrician	gas	gas

Biology	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 13 curriculum overview	Finishing chapter 13, also chapter 14 from Module 5. This will include: synapses, the sliding filament model, and human hormones (including insulin). This will cover Chapter 16 and 18 from Module 6. This will include: plant hormones and respiration. PAG 11.2 Daphnia	Chapter 15 from Module 5. This will include homeostasis and thermoregulation. Chapters 20-21 from Module 6. This will include: variation, selection, phenotypic ratios, genetic profiling, genetic sequencing and gene technology ethics. PAG 6.3 Chromatog.	Continuation of Chapter 15 from Module 5. This will include kidney function. Chapters 22 and 23 from Module 6. This will include: cloning, biotechnology, sustainability and succession. PAG 10.3 Yogurt PAG 7.1 Microbiology	Chapter 24 from Module 6. This will include case studies on how various ecosystems are maintained. Preparing for public examinations.	Preparation for public examinations. This will begin with Module 2, 3 and 4 from AS and then gradually move onto Modules 5 and 6 (A2). This is subject to change based upon student/test feedback.	Preparation for public examinations will continue. Where lessons are able to take place during the exam season, we will primarily move to Modules 5 and 6. However, as with last term, this is subject to student feedback. We will also complete mock papers for the most imminent exam.

	PAG 5.2 Colourimetry PAG 12.1 Research					
Skills	Students will heavily have to apply their new knowledge in these chapters. The PAGS will develop safe and competent laboratory practices as well as research and referencing skills as well as working with colorimeters (very important for titrations). In almost all lessons, students will be required to interpret, analyse and apply their learning.	Students will statistically analyse phenotypic ratios in populations with Hardy-Weinberg. Students will debate ethics. Students will develop practical separation procedures. In almost all lessons, students will be required to interpret, analyse and apply their learning.	Students will develop working knowledge of different technologies and careers in biology. Students will learn aseptic techniques used in microbiology. In almost all lessons, students will be required to interpret, analyse and apply their learning.	Students will practice research and presenting skills while talking about different case studies. In almost all lessons, students will be required to interpret, analyse and apply their learning.	Students will refine their examination skills as well as take on metacognitive strategies to assist in their learning. In almost all lessons, students will be required to interpret, analyse and apply their learning.	If students are in: (and if they aren't) Students will refine their examination skills as well as take on metacognitive strategies to assist in their learning. In almost all lessons, students will be required to interpret, analyse and apply their learning.
Personal Development links	Students will develop an understanding of how their body coordinates itself. Students will also learn to experiment with living organisms. Students will also practice research and referencing skills.	Students will develop an understanding of how genes and the environment work. Selection is a concept that can be applied to nearly all aspects of life if understood.	Students will both practice and learn about many procedures involved in biotechnology. This emerging field will or does likely form part of many modern working environments.	Students will present their ideas to their peers and also give feedback to others. This pro-social skill will be invaluable in any setting work or other, where ideas are shared. It's also a topic about sustainability which is another thing that all	Students will learn to manage their time, workload and stress. Students will also experience (for some of them their first) a major stressor with a national deadline - valuable experience in academia.	Students will learn to manage their time, workload and stress. Students will also experience (for some of them their first) a major stressor with a national deadline - valuable experience in academia. After exams many will stew in regret - which

				young people need to be aware of and know about.		sounds like a joke but is a very important aspect in both the cycle of improvement and also understanding their limitations.
Career links	Medicine, Physiologist, Coroner, Agriculture, Horticulture, Sports Scientists.	Ecologist, Sport Scientist, Geneticist, Biological Engineer.	Biotechnology, Biological Engineer, Food Scientist, Environmentalist, Bioremediatory.	Ecologist, Botanist, Zoologist, Environmentalist, Agriculture, Horticulture.	As they are preparing for exams, there are no specific career foci. However, all those mentioned (and many others) could be explored.	As they are preparing for exams, there are no specific career foci. However, all those mentioned (and many others) could be explored.

Chemistry	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 13 curriculum overview	Module 5 : Physical Chemistry and Transition metals	Module 5 : Physical Chemistry and Transition metals	Module 6 : Organic Chemistry and Analysis	Module 6 : Organic Chemistry and Analysis	Revision of Content and Exam Practice	Revision of Content and Exam Practice
Skills	To develop practical quantitative techniques involved in the determination of reaction rates and pH.	To develop mathematical skills, such as use of logarithms and exponents, in content and when carrying out quantitative practical work.	To further develop knowledge and understanding of the chemical concepts developed in Core organic chemistry. To develop knowledge of new functional groups and the importance of organic synthesis	To analyse organic compounds using NMR spectroscopy to the instrumentation techniques used in organic and forensic analysis.	To develop Synoptic subject skills to link assessment strongly with the content encountered in Module 1-6	To use exam techniques to apply Knowledge gained through the content of the 2-year course

Personal Development links	Applying knowledge of health and safety practices in organic synthesis ensures personal safety, minimizes the risk of accidents or exposure to harmful substances, and promotes responsible laboratory conduct.	Physical chemistry fosters critical thinking, problem- solving abilities, scientific skills, precision, communication, that contribute to enhancing one's cognitive abilities, analytical thinking, and adaptability, improving personal relationships, career development, and decision-making processes.	Organic Chemistry and its compounds help understand how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society (as exemplified in 'How Science Works' .	The use of Instrumental and Analytical techniques is linked with the positive and negative uses of organic compounds in society including the safe use of prescribed medicines; and link these organic compounds to the impact on our environment.	Develop and demonstrate a deep appreciation of the skills, knowledge and understanding of scientific methods.	Integrating effective exam techniques develops valuable personal skills: time management, organization, critical thinking, self-discipline, stress management, and reflective practice, to enhance overall capacity for growth and success.
Career links	Medicine, Physiologist, Coroner, Agriculture, Horticulture, Sports Scientists.	Ecologist, Sport Scientist, Geneticist, Biological Engineer.	Biotechnology, Biological Engineer, Food Scientist, Environmentalist, bioremediatory.	Ecologist, Botanist, Zoologist, Environmentalist, Agriculture, Horticulture.	As they are preparing for exams, there are no specific career foci. However, all those mentioned (and many others) could be explored.	As they are preparing for exams, there are no specific career foci. However, all those mentioned (and many others) could be explored.

Physics	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 13 curriculum overview	Radioactivity, nuclear energy, electric fields and capacitors	Telescopes, stars, magnetic fields and electromagnetic induction	Cosmology and gravitational fields	Revision and internal mock exams.	Revision and public exams.	Revision and public exams.
Skills	Radioactivity safety, Mathematical skills - rearranging equations. Circuits building and use.	Standard form and scale, high detail drawings. Mathematical skills - rearranging equations. Logarithmic scales.	Constructing and understanding arguments on competing scientific ideas. Evaluation of evidence of scientific theories.	Time management, memory, and cognitive workload. Students implement strategies to understand and build resilience, as well as how to respond to whole syllabus content to succeed in exam style questions.	Time management, memory, and cognitive workload. Students implement strategies to understand and build resilience, as well as how to respond to whole syllabus content to succeed in exam style questions.	Time management, memory, and cognitive workload. Students implement strategies to understand and build resilience, as well as how to respond to whole syllabus content to succeed in exam style questions.
Personal Development links	Nuclear issues, energy and the planet, climate change. Health and safety skills around how to handle dangerous substances.	Students will learn to think about long cycles of time, cause and effect and how small changes in initial conditions can have large ramifications. Students will also study fundamental concepts in how most modern devices function.	Students will develop a sense of the universal scale and our place in it. They will also study fundamental scientific theory and the history of its development.	Integrating effective exam techniques develops valuable personal skills: time management, organization, critical thinking, self-discipline, stress management, and reflective practice, to enhance overall capacity for growth and success.	Integrating effective exam techniques develops valuable personal skills: time management, organization, critical thinking, self-discipline, stress management, and reflective practice, to enhance overall capacity for growth and success.	Integrating effective exam techniques develops valuable personal skills: time management, organization, critical thinking, self-discipline, stress management, and reflective practice, to enhance overall capacity for growth and success.
Career links	Academic researcher, geophysics. radiation specialist, material	Academic researcher, geophysics. radiation specialist, material	Academic researcher, geophysics. radiation specialist, material	Academic researcher, geophysics. radiation specialist, material	Academic researcher, geophysics. radiation specialist, material	Academic researcher, geophysics. radiation specialist, material

science, accounting, data analysis, software engineer, aerospace and defense, meteorology, oil and gas, puclear technician	science, accounting, data analysis, software engineer, aerospace and defense, meteorology, oil and gas_astronomer	science, accounting, data analysis, software engineer, aerospace and defense, meteorology, oil and gas, astronomer	science, accounting, data analysis, software engineer, aerospace and defense, meteorology, oil and	science, accounting, data analysis, software engineer, aerospace and defense, meteorology, oil and	science, accounting, data analysis, software engineer, aerospace and defense, meteorology, oil and
gas, nuclear technician, telecoms.	gas, astronomer, telecoms.	gas, astronomer.	gas.	gas.	gas.