Year 10 Combined Science Biology

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Topic 3- Genetics	Topic 3- Genetics and Topic 4- Evolution	Topic 4- Evolution	Topic 9- Ecology (cycles)	Topic 9- Ecology	Topic 9- Ecology
Threshold concepts explored	Genetics Cells	Genetics Evolution	Genetics Evolution	Interdependence	Interdependence Energy	Interdependence Energy
Building on	KS3 Topic 7B Reproduction KS3 Topic 7A Cells Topic 1- Fundamentals Topic 2- Cell division	KS3 Topic 7B Reproduction KS3 Topic 7A Cells KS3 Topic 7D Ecology and Evolution Topic 3- Genetics	KS3 Topic 7D Ecology and Evolution Topic 3- Genetics	KS3 Topic 7D Ecology and Evolution Cross-curricular links to Geography Cross-curricular links to Chemistry	KS3 Topic 7D Ecology and Evolution Cross-curricular links to Geography	KS3 Topic 7D Ecology and Evolution Cross-curricular links to Geography
Leading to	Topic 4- Evolution and Genetic modification	Topic 4- Evolution and Genetic modification Topic 9- Interdependence and adaptation	Topic 9- Interdependence and adaptation	Topic 6- Photosynthesis Topic 8- Respiration	Topic 6- Photosynthesis Topic 8- Respiration	Topic 6- Photosynthesis Topic 8- Respiration
How will you know how you are doing and how to improve?	Topic 3 mid-topic (yellow) progress check	Topic 3 End of topic (green) assessment Topic 4 mid-topic (yellow) progress check	Topic 4 End of topic (green) assessment Practice GCSE paper 1	Topic 9 mid-topic (yellow) progress check	Year 10 mock exams (paper 1)	Topic 9 End of topic (green) assessment
Experiences to look out for	Extracting DNA from fruit					Outdoor field work measuring abundance and biodiversity
Links to useful resources	Biology Resources OneNote	Biology Resources OneNote	Biology Resources OneNote	Biology Resources OneNote	Biology Resources OneNote	Biology Resources OneNote

Year 10 Combined Chemistry

	Term 1		Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Bonding and types of substance (part 2)	Calculations involving masses (part 2)	Acids	Electrolytic processes, Reversible reactions and equilibria	Metals	Revision, mocks and feedback	Groups of the periodic table
Threshold concepts explored	Particles & bonding	Chemical analysis Reactions	Reactions Chemical analysis	Reactions Energy	Materials Reactions		Reactions Particles & bonding
Building on	7GH – Particles & Atoms (KS3) Atomic structure and Periodic Table (Y9)	7GH – Particles & Atoms (KS3) Atomic structure and Periodic Table (Y9)	7F - Acids and Alkalis (KS3) Bonding and types of substance (Y10)	8F - Applications of Chemistry (KS3) Metals (Y9)	8G - Metals & The Periodic Table		8G - Metals & The Periodic Table (KS3) Atomic structure and Periodic Table (Y9)
Leading to	Explaining and predicting the properties of substances based on their bonding including investigating different intermolecular forces (Y12).	Analysis of substances to determine quantitative information, including molecular formula, concentration and purity (Y12 & 13).	The reactions of acids to produce new materials including buffers. Calculations related to pH and the use of acids in chemical analysis (Y12).	Predicting the products of electrolysis (Y12) and reactions in electrochemical cells / batteries (Y13). To optimise the conditions used for industrial reactions at equilibrium (Y12).			Explaining / predicting the physical and chemical properties of elements from groups 2, 7 (Y12) and transition elements (Y13).
How am I doing How to improve	1cd (part 2) Mid-unit test 1cd (part 2) End-of-Unit Test		3a Mid-unit test	3b Mid-unit test 3 & 4b End-of-Unit Test	4a Mid-unit test 4a End-of-Unit Test	Mock exams and feedback	Paper 1 mock exam 6 Mid-unit test 6 End of Unit Test
Experiences	Using everyday objects to model atoms, ions and molecules	Determining the empirical formula of magnesium oxide Proving that atoms are not created or destroyed in reactions	Investigating neutralisation (CP) Preparing a soluble salt (CP)	Electrolysis of copper sulfate (CP)	Thermit reaction demonstration Deciding where aluminium fits in the reactivity series		Demonstration of alkali metals
Useful resources	BBC - Ionic compounds BBC - Simple molecules BBC - Giant covalent BBC - Metals and non metals Science OneNote	BBC - Calculations **BBC - Calculations (H)** Science OneNote	BBC - Acids and alkalis BBC - Salts Science OneNote	BBC - Electrolysis Science OneNote BBC - Reversible reactions and equilibria Science OneNote	BBC - Obtaining and using metals Science OneNote		BBC - Group 1 BBC - Group 7 BBC - Group 0 Science OneNote

Year 10 Combined Physics

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Topic 4 Waves	Topic 5 Light and the EM Spectrum	Topic 6 Radioactivity	Topic 10 Electricity	Topic 10 Electricity	Topic 14 Particle Model
Threshold concepts explored	Energy	Energy	Energy/Particles	Energy/ Electromagnetism	Energy/ Electromagnetism	Energy/Forces
Building on	KS3 7L 8J Sound & light	KS3 7L 8J Sound & light	KS3 7GH Particles and Atoms 7I Energy 8K Thermal	KS3 7J Electricity&Magnetism	KS3 7J Electricity&Magnetism	KS3 7GH Particles and Atoms 7I Energy 8K Thermal 7K Forces
Leading to	GCSE Topic 5 Light and EM spectrum GCSE Topic 6 Radioactivity	Topic 6 Radioactivity	A-Level Radioactivity	GCSE Topic 11 Static Electricity GCSE Topic 12 Magnetism and the motor effect GCSE Topic 13 Electromagnetic Induction	GCSE Topic 11 Static Electricity GCSE Topic 12 Magnetism and the motor effect GCSE Topic 13 Electromagnetic Induction	GCSE Topic 9 Forces their effects
How will you know how you are doing and how to improve?	Topic 4 yellow and green test	Topic 5 green test	Topic 6 Yellow and Green assessment	Topic 10 Yellow and Green test	Topic 10 Yellow and Green test	Topic 14 Green Test
Experiences to look out for	Core Practical- Measuring the speed of water waves and sounds waves	Core Practical	Demo: Radioactive sources	Core Practical: Resistance	Core Practical: Resistance	Core Practical: Density Specific Heat Capacoty
Links to useful resources	Waves - GCSE Combined Science Revision - Edexcel - BBC Bitesize	Light and the EM spectrum - GCSE Combined Science Revision - Edexcel - BBC Bitesize	Radioactivity - GCSE Combined Science Revision - Edexcel - BBC Bitesize	Electricity and circuits - GCSE Combined Science Revision - Edexcel - BBC Bitesize	Electricity and circuits - GCSE Combined Science Revision - Edexcel - BBC Bitesize	The particle model - GCSE Combined Science Revision - Edexcel - BBC Bitesize

Year 11 Combined Biology

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Topic 6- Plants and Photosynthesis	Topic 7 -Hormones	Topic 7- Hormones and Topic 8- Respiration	Topic 8- Respiration	Revision and Exams	Study Leave
Threshold concepts explored	Physiology Cells Energy	Physiology	Physiology Cells	Physiology Energy Cells		
Building on	KS3 Topic 7A- Cells KS3 Topic 8C- Respiration and Photosynthesis Topic 1- Key concepts (cell structure and function)	KS3 Topic 7B- Reproduction	KS3 Topic 7B- Reproduction KS3 Topic 8C- Respiration and Photosynthesis	KS3 Topic 8C- Respiration and Photosynthesis		
Leading to	KS5 Biology (topics 4/5)	KS4 Topic 8 (metabolism and respiration) KS5 Biology (topics 3/7/8)	KS4 Topic 8 (metabolism and respiration) KS5 Biology (topics 3/7/8)	KS5 Biology (topic 7)		
How will you know how you are doing and how to improve?	'Walking Talking mock' (paper 1) Topic 6 mid-topic (yellow) progress check Topic 6 End of topic (green) assessment	Year 11 Mock week (paper 1)	Topic 7 mid-topic (yellow) progress check Topic 7 End of topic (green) assessment Topic 8 mid-topic (yellow) progress check	Topic 8 End of topic (green) assessment Paper 2 mock (in class)		
Experiences to look out for	Testing leaves for starch Observing stomata Investigating rates of photosynthesis Investigating rate of transpiration (potometers)	Investigating sugar content of urine	Heart dissection	Investigating respiration rate (respirometers)		

Links to useful resources	Biology Resources OneNote	Biology Resources OneNote	Biology Resources OneNote	Biology Resources OneNote	Biology Resources OneNote	

Y11 Combined Chem

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Rate of reaction	Heat energy changes in chemical reactions	Fuels	Earth and atmospheric chemistry	Revision	
Threshold concepts explored	Energy Reactions	Energy Reactions	Reactions Energy	Energy		
Building on	8F - Applications of Chemistry (KS3)	7I8E - Energy & Combustion (KS3) Rate of reaction (Y11)	7I8E - Energy & Combustion (KS3) Bonding and types of substance (Y10)	8H - Rocks & Weathering		
Leading to	Explaining factors that affect rate of reaction (Y12). Homogeneous and heterogeneous catalysts (Y12). Determining order of reaction and the activation energy of a reaction (Y13).	Comparing the energy released by a reaction with data provided (Y12). Explaining why some solids are soluble in water and others are not (Y13)	Studying and synthesizing some of the variety of useful chemicals that can be synthesized that have a carbon-chain (Y12 & 13).	Understanding the chemistry of the atmosphere and the impact that man has had on the ozone layer (Y12). Explaining the chemistry of the various stages of the carbon cycle (Y13)		
How am I doing, how to improve	7a Mid-unit test Paper 1 Walking, talking mock	Paper 1 mock exam 7b Mid-unit test 7 End of Unit Test	8a Mid-unit test	8b Mid-unit test 8 End of Unit Test Paper 2 mock exam	Paper 2 mock exam	
Experiences	Investigating rate of reaction (CP)		Woosh bottle demonstration Exploding pringles can demonstration Comparing the energy released by burning fuels			
Useful resources	BBC - Rate of reaction Science OneNote	BBC - Heat energy changes in chemical reactions Science OneNote	BBC - Fuels Science OneNote	BBC - Earth and atmospheric science Science OneNote	Science OneNote	

Y11 Combined Physics	**Term 1**	**Term 2**	**Term 3**	**Term 4**	**Term 5**
Topic	Topic 15 Forces and Matter	Topic 8 Forces Doing Work	Topic 9 Forces and their effects	Topic 12 Magnetism and the Motor Effect	Topic 13 Electromagnetic Induction
Threshold concepts explored	Energy/Forces	Energy/Forces	Energy/Forces	Electromagnetism	Electromagnetism
Building on	KS3 KS3 7GH Particles and Atoms 7I Energy 8K Thermal 7K Forces GCSE Topic 2 Forces and Motion	KS3 7GH Particles and Atoms 7I Energy 8K Thermal GCSE Topic 3 Conservation of Energy GCSE Topic 10 Electricity	KS3 7K Forces 8L Space GCSE Topic 2 Forces and Motion	KS3 7J Electricity Magnetism KS4 Topic 3 Conservation of Energy GCSE Topic 10 Electricity GCSE Topic 11 Static Electricity	KS3 7J Electricity & Magnetism KS4 Topic 3 Conservation of Energy GCSE Topic 10 Electricity GCSE Topic 12 Magnetism and the motor effect
Leading to	GCSE Topic 8 Forces doing work GCSE Topic 9 Forces and their effects	A Level Topic 1 Mechanics Topic 2 Electricity Topic 6 Further Mechanics	A Level Topic 1 Mechanics Topic 4 Materials	A Level Topic 2 Electricity Topic 7 Particle Physics Topics 8 Electric & Magnetic Fields	A Level Topic 2 Electricity Topic 7 Particle Physics Topics 8 Electric & Magnetic Fields
How will you know how you are doing and how to improve?	Topic 15 Green test Year 11 Mock Paper 1	Topic 8 Green test	Topic 9 Green test	Topic 12 Green Test	Topic 13 Green Test
Experiences to look out for	Core Practical: Hooke's Law			Making Motors	
Links to useful resources	Forces and matter - GCSE Combined Science Revision - Edexcel - BBC Bitesize	Forces doing work - GCSE Combined Science Revision - Edexcel - BBC Bitesize	Forces and their effects - GCSE Combined Science Revision - Edexcel - BBC Bitesize	Magnetism and the motor effect - GCSE Combined Science Revision - Edexcel - BBC Bitesize	Electromagnetic induction - GCSE Combined Science Revision - Edexcel - BBC Bitesize