



Combined Science: Year 10

Term	Assessments	Topics	Skills	Personal Development
Autumn I	Tests: One 45 mark test at the end of each topic listed below: B3 Organisation and the Digestive System: https://www.bbc .co.uk/bitesize/t opics/zwj22nb B8 Photosynthesis B9 Respiration: https://www.bbc .co.uk/bitesize/g uides/zp4mk2p/ revision/1 C3 Structure and Bonding: https://www.bbc.c o.uk/bitesize/topic s/z33rrwx	B3 Organisation and the Digestive System Tissues and Organs, The Human Digestive System, Chemistry of Food, Catalysts and Enzymes, Factors Affecting Enzyme Action, How the Digestive System Works, Making Digestion Efficient	Investigative skills: Food tests Drawing diagrams to show levels of organisation Analysing graphs of rates	The characteristics and evidence of what constitutes a healthy lifestyle and maintaining a healthy weight (including the links between an inactive lifestyle and ill health, such as cancer and cardio-vascular ill health) How to maintain healthy eating and the links between a poor diet and health risks, including tooth decay and cancer
		B8 Photosynthesis Photosynthesis, The rate of Photosynthesis, How Plants use Glucose, Making the Most of Photosynthesis	Balancing equations Practical skills: rate of photosynthesis	Students to examine the implications of farmers using carbon dioxide made in the burning of fossil fuels to increase yields of crops and what effect this may have on the environment.
		B9 Respiration Aerobic Respiration, The Response the Exercise, Anaerobic Exercise, Metabolism and the Liver	Balancing equations	The importance of respiration to life and how our bodies respond to exercise.
		C3 Structure and Bonding States of Matter, Atoms into lons, lonic Bonding & Giant lonic Structures, Covalent Bonding, Simple Molecular and Giant Covalent Structures, Fullerenes and Graphene, Metallic Bonding and Giant Metallic Structures	Using and rearranging formula, safely carrying out practical work	
Autumn 2	Tests: One 45 mark test at the end of each topic listed below: B5 Communicable Diseases: https://www.b bc.co.uk/bitesi ze/guides/zcqs 2nb/revision/1 B6 Preventing and Treating Disease: https://www.bbc.c o.uk/bitesize/guid	PIConservation and Dissipation of Energy Changes in Energy Stores, Conservation of Energy, Energy and Work, Gravitational and Potential Energy Stores, Kinetic and Elastic Energy Stores, Energy Dissipation, Energy and Efficiency, Electrical Appliances, Energy and Power	Using and rearranging formulae	An appreciation that there is the same amount of energy in the Universe now compared to when it began and into the future.
		B5 Communicable Diseases Health and Disease, Pathogens and Disease, Preventing Infections, Viral and Bacterial Diseases, Diseases caused by Fungi and Protists, Human Defence Responses	Interpreting data from tables and graphs	An understanding of how diseases are caused, spread and how to prevent them.

	es/zxcmk2p/revisi on/1 B8 Photosynthesis: https://www.bbc. co.uk/bitesize/gui des/zs4mk2p/revi sion/1 P1Conservation and Dissipation of Energy: https://www.bbc.c	B6 Preventing and Treating Disease Vaccination, Antibiotics and Painkillers, Discovering Drugs, Developing Drugs	Interpreting data from tables and graphs. Practical skills.	Students to understand the implications of a double-blind trial where a sick person is not receiving potentially life- saving drugs despite being ill as scientists need to ascertain if any positive effect of the drug is down to the active ingredient or not. Students understand the implications of not being vaccinated to not just to themselves but to other members of the community they are in. Appreciate the ethical implications of medical research on animals and why this is both a good thing and a bad one.
	o.uk/bitesize/topic s/z89ddxs C4 Chemical Calculations: https://www.bbc.c o.uk/bitesize/topic s/zsnyy4j	C4 Chemical Calculations Relative Masses and Moles, Equations and Calculations, From Masses to Balanced Equations. Concentrations	Using and rearranging formula, safely carrying out practical work	
Term	Assessments Tests:	Topics	Skills Practical skills:	Personal Development
	One 45 mark test at the end of each topic listed below: C5 Chemical Changes: https://www.bbc.co. uk/bitesize/topics/zt 6ppbk	C5 Chemical Changes The Reactivity Series, Displacement Reactions, Extracting Metals, Salts from metals and from Insoluble bases, Other ways Salt can be made, Neutralisation and the pH Scale, Strong and Weak Acids	e.g. making copper salt Collecting and interpreting data Ionic equations and half-equations	Appreciating where metals come from and how humans extract them for use.
Spring I	P2 Energy Transfer By Heating: <u>https://www.bbc.co.</u> <u>uk/bitesize/guides/zy</u>	P2 Energy Transfer By Heating Energy Transfer by Conduction, Specific Heat Capacity, Heating & Insulating Buildings	Using and rearranging formula, safely carrying out practical work	How to increase the efficiency of homes and businesses so that less energy is wasted by heating.
	8g3k7/revision/1 P4 Electrical Circuits: https://www.bbc.c o.uk/bitesize/guid es/zgvq4qt/revisio n/1	P4 Electrical Circuits Current and Charge, PD and Resistance, Component Characteristics, Series Circuits, Parallel Circuits	Drawing and interpreting circuit diagrams. Investigative skills. Using and rearranging formulae.	The importance of electrical circuits in everyday life.
	One 45 mark test at the end of each topic listed below: C6 Electrolysis: https://www.bbc.c o.uk/bitesize/guid es/z9h9v9q/revisi	C6 Electrolysis Basic Electrolysis, Reactions at the Electrodes, Extraction of Aluminium, Electrolysis of Aqueous Solutions	Practical skills: e.g. electrolysis if a solution Half-equations	The uses and importance of aluminium to society.
Spring 2	on/L C7 Energy Changes: https://www.bbc.c o.uk/bitesize/topic s/z27xxfr	C7 Energy Changes Endothermic and Exothermic Reactions, Using Energy Transfers from Reactions, Reaction Profiles, Bond Energy Calculation	Practical skills: e.g. investigating temperature changes Analysing reaction profiles Calculating bond energies	Why exothermic reactions are important to life. The uses of exothermic and endothermic reactions in devices. Evaluating the use of hydrogen fuel cells
	P5 Electricity in the Home:	P5 Electricity in the Home Alternating Current, Cables and Plugs, Electrical Power and PD, Electrical	Analysing data from oscilloscopes Practical skills: wiring plugs	Electrical safety in the home.

	https://www.bbc.c	Current and Energy Transfer,	Maths skills:	
	o.uk/bitesize/guid	Appliances and Efficiency	percentages	
	es/zw8n2nb/revisi			
	<u>on/l</u>			
Term	Assessments	Topics	Skills Practical	Personal Development
Summer I	One 45 mark test at the end of each topic listed below: B15 Adaptations, Interdependence and Competition: https://www.bbc.co.uk /bitesize/guides/z86gpb k/revision/1 C8 Rates and Equilibrium: https://www.bbc.co.uk /bitesize/topics/zwdqq hv	B15 Adaptations, Interdependence and Competition The importance of Communities, Organisms in their Environment, Distribution and Abundance, Competition in Animals, Competition in Plants, Adaptations and Survival, Adaptations in Animals and Plant C8 Rates and Equilibrium Rate of Reaction, Collision Theory and Surface Area, The Effect of Temperature, The Effect of Concentration and Pressure, The Effect of Catalysts, Reversible Reactions, Energy and Reversible Reactions, Dynamic Equilibrium, Changing conditions and Reaction Rates	skills: Field work Calculating mean, median and mode, estimating population size Calculating rates of reaction using tangents to a curve Practical skills	The factors which affect biological communities and how humans contribute to this.
Summer 2	Biology Paper 1 mock exam – 70 marks Past papers: https://www.aqa.org.u k/subjects/science/gcse /combined-science- trilogy- 8464/assessmentresou rces?f.Component%7C 7=Paper+1+Biology Chemistry Paper 1 mock exam – 70 marks Past papers: https://www.aqa.org.u k/subjects/science/gcse /combined-science- trilogy- 8464/assessmentresou rces?f.Component%7C 7=Paper+1+Chemistr y Physics Paper 1 mock exam – 70 marls Past papers: https://www.aqa.org.u k/subjects/science/gcse /combined-science- trilogy- 8464/assessmentresou rces?f.Component%7C 7=Papers: https://www.aqa.org.u k/subjects/science/gcse /combined-science- trilogy- 8464/assessmentresou rces?f.Component%7C 7=Paper+1+Physics	Biology Paper I Revision Chemistry Paper I Revision Physics Paper I Revision	Revision Skills	

Combined Science: Year II

Term	Assessments	Topics	Skills	Personal Development
			Analysing	
Autumn I	Tests: One 45 mark test	B16 Organising an Ecosystem Feeding relationships, Materials Recycling, The Carbon Cycle	food chains and food webs Interpreting data from graphs	The importance of the water, carbon and decomposition cycles to life and food production.
	at the end of each topic listed below: the list below: BI6 Organising an Ecosystem: <u>https://www.bbc.c</u> <u>o.uk/bitesize/topic</u> <u>s/zxxhh39</u> BI7 Biodiversity and Ecosystems:	B17 Biodiversity and Ecosystems The Human Population Explosion, Land and Water Pollution, Air Pollution, Deforestation and Peat Destruction, Global Warming, Maintaining Biodiversity	Analysing and Evaluating data	Students to explain how waste, deforestation and global warming have an impact on biodiversity. Students to explain and evaluate the conflicting societal pressures on maintaining biodiversity Students to understand the conflict between the need for cheap available compost to increase food production and the need to conserve peat bogs and peatlands as habitats for biodiversity and to reduce carbon dioxide emissions.
	https://www.bbc.c o.uk/bitesize/topic s/zxxhh39 C9 Crude Oil and Fuels: https://www.bbc.co. uk/bitesize/topics/z9 488mn	C9 Crude Oil and Fuels Hydrocarbons, Fractional Distillation of Oil, Burning Hydrocarbon Fuels, Cracking Hydrocarbons	Practical skills Using comparative language	How the cost of good is affected by oil prices. An appreciation of how everyday fuels are produced.
	C10 Chemical Analysis: https://www.bbc.c o.uk/bitesize/topic s/zgbccj6 C11 The Earth's Atmosphere: https://www.bbc.c o.uk/bitesize/topic s/zysvv9q	C10 Chemical Analysis Pure Substances and Mixtures, Analysing Chromatograms, Testing for Gases	Practical skills: e.g. finding R _f values Calculations	Effects of compound combinations in e.g. drugs.
		CII The Earth's Atmosphere The History of our Atmosphere, Our Evolving Atmosphere, Greenhouse Gases, Global Climate Change, Atmospheric Pollutants	Analysing oscilloscope diagrams	How ultrasound can be used to check the progress of a growing foetus using a pre-natal scan and the importance of waves in detecting earthquakes early to allow communities to be evacuated,
Autumn 2	Tests: One 45 mark test at the end of each topic listed below: B10 The Human	BIO The Human Nervous System Principals of Homeostasis, The Structure and Function of the Nervous System, Reflex Actions	Practical skills: Measuring reaction times	Ideas around eyesight and the structure of the eye.
	Nervous System: https://www.bbc.c o.uk/bitesize/guid es/z2374qt/revisio n/1 B11 Hormonal Coordination: https://www.bbc.c o.uk/bitesize/topic	BII Hormonal Coordination Principals of Hormonal Control, The Control of Blood Glucose Levels and Treating Diabetes, The role of Negative Feedback, Human Reproduction, Hormones and the Menstrual Cycle, The Artificial Control of Fertility and Infertility Treatments	Analysing data	Students to evaluate information around the relationship between obesity and diabetes, and make recommendations taking into account social and ethical issues.
	s/zyybb82 CI2 The Earth's Resources: https://www.bbc.c	C12 The Earth's Resources Finite and Infinite Resources, Water that is Safe to Drink, Treating Waste Water, Extracting Metals from Ores, Life Cycle Assessments, Reduce - Reuse - Recycle	Practical skills	The Earth has limited resources and we are responsible for using these wisely, 'reduce, reuse, recycle', how waste water is treated etc.

	o.uk/bitesize/topic s/zptnng8 P8 Forces and Balance: https://www.bbc.c o.uk/bitesize/topic s/ztmttv4 P9 Motion: https://www.bbc.c o.uk/bitesize/topic	 P8 Forces and Balance Vectors and Scalars, Forces Between Objects, Resultant Force and the Centre of Mass, Parallelogram of Forces, Resolution of Forces P9 Motion Speed and Distance Time Graphs, Velocity and Acceleration, Velocity Time Graphs, Analysing Motion Graphs	Drawing and analysing vector diagrams Using and rearranging formulae Interpreting data from graphs, including calculating area and	
	<u>s/ztmttv4</u>		gradient Practical skills	
Term	Assessments	Topics	Skills	Personal Development
	Tests:	P10 Forces and Motion Forces and Acceleration, Weight and Terminal Velocity, Forces and Braking, Momentum	Evaluating and drawing force diagrams Using and rearranging formulae Practical skills	Using physics to evaluate car safety features and why it is important to, e.g. wear a seatbelt and not use a mobile phone whilst driving
Spring I	One 45 mark test at the end of each topic listed below:	PII Wave Properties: The Nature and Properties of Waves, Reflection, Refraction, Waves in Context	Analysing trends in data	Greenhouse gases and climate change. What is causing these changes and discussions of how this can be combatted.
	P10 Forces and Motion: https://www.bbc.co. uk/bitesize/topics/zt mttv4P11 Wave Properties: https://www.bbc.co. uk/bitesize/topics/z2 j22nbB12 Reproduction: https://www.bbc.cc o.uk/bitesize/topic s/zpb7cj6B13 Variation and Evolution: https://www.bbc.cc		Using punnett squares for genetic crosses Calculating ratios and proportional ity	Screening for inherited disorders The facts about reproductive health, including fertility and the potential impact of lifestyle on fertility for men and women. That they have a choice to delay sex or to enjoy intimacy without sex as a method of not becoming pregnant. The facts about the full range of contraceptive choices, efficacy and options available The benefits of regular self-examination and screening Key facts about puberty, the changing adolescent body and menstrual wellbeing The main changes which take place in males and females, and the implications for emotional and physical health
	o.uk/bitesize/topic s/zpb7cj6	B13 Variation and Evolution Variation, Evolution by Natural Selection, Selective Breeding, Genetic Engineering, Ethics of Genetic Technologies	Evaluating data in tables and graphs	Exploring differences between individuals, variation and evolution Genetic Engineering and selective breeding. Ethical debates on screening for inherited disorders, terminations, selective breeding, cloning and genetic engineering.

Spring 2	Tests: One 45 mark test at the end of each topic listed below: B14 Genetics and Evolution: https://www.bbc.c o.uk/bitesize/topic s/zpb7cj6	B14 Genetics and Evolution History of Genetics, Theories of Evolution and Accepting Darwin's Ideas, Evolution and Speciation, Evidence for Evolution, Fossils and Extinction – Including Why Extinction can Occur, Antibiotic Resistant Bacteria, Classification, New Systems of Classification		
	PI2 Electromagnetic Waves: <u>https://www.bbc.c</u> <u>o.uk/bitesize/guid</u> <u>es/z9bw6yc/revisi</u>	P12 Electromagnetic Waves The EM Spectrum, Radio waves to Light Waves, Communications using Waves, UV to Gamma Rays	Orders of magnitude and prefixes	The hazards and uses of electromagnetic waves, including their use in medicine and the risks and benefits of using e.g. X-rays or gamma rays in radiotherapy.
	on/3 PI3 Electromagnetism : https://www.bbc.c o.uk/bitesize/topic s/z39ry4	P13 Electromagnetism Magnetic Fields, Magnetic Fields of Electric Currents, The Motor Effect	Interpreting diagrams using physical laws	The importance of electromagnetic devices in our daily lives,

Term	Assessments	Topics	Skills	Personal Development
		Biology Paper I and Paper 2 Revision		
		Chemistry Paper I and Paper 2 Revision		
		Physics Paper I and Paper 2 Revision		
	Summer Examinations:			
	• Biology Paper 1 – 70 marks	Revision materials:		
	Chemistry	Biology:		
	Paper I – 70	https://www.aqa.org.uk/subjects/scienc		
	marks	e/gcse/combined-science-trilogy-		
Summer	 Physics Paper I 	8464/assessmentresources?f.Compone	Revision	
	– 70 marks	nt%7C7=Paper+1+Biology&f.Compone	skills	
	• Biology Paper 2 – 70 marks	nt%7C7=Paper+2+Biology		
	Chemistry	Chemistry:		
	Paper 2 – 70	https://www.aqa.org.uk/subjects/scienc		
	marks	e/gcse/combined-science-trilogy-		
	Physics Paper 2	8464/assessmentresources?f.Compone		
	– 70 marks	nt%7C7=Paper+1+Chemistry&f.Comp		
		onent%7C7=Paper+2+Chemistry		
		Physics:		
		https://www.aqa.org.uk/subjects/scienc		
		e/gcse/combined-science-trilogy-		
		8464/assessmentresources?f.Compone		
		nt%7C7=Paper+1+Physics&f.Compone		
		nt%7C7=Paper+2+Physics		