

Science Curriculum Map – Year 11

Year	Term	Unit/s of work	Core knowledge	Core skills	Literacy Skills	Key Assessments and dates
11 edexcel additional	Autumn 1	C2 topics 2 to 6.	Covalent bonds, Properties of covalent substances, Classifying substances (Practical), Miscible or immiscible, Chromatography. Temperature change (Practical), Temperature changes, Rates of reaction (Practical), Collision theory, Catalysts. Relative masses, determine the empirical formula for magnesium, Yields, Waste and profit.	Using the periodic table to determine atomic structure. Calculating rates of reaction through experiment and using graph gradients to calculate rate. Using element symbols and calculations to determine yield.	Interpreting graphs and describing what they represent in detailed conclusions. Then explaining these findings with scientific knowledge.	Long answer questions on specific C2 topics leading to a full past paper on C2.
	Autumn 2	B2 topics 1 and 2. P2 topics 1-3 Controlled assessment C2 or B2	B2 topic 1 Plant and animal cells, Inside bacteria, DNA, DNA discovery, Genetic engineering, Mitosis and meiosis, Clones, protein synthesis, mutations. B2 topic 2 Aerobic respiration, effects of exercise, Anaerobic respiration, Photosynthesis, rate of photosynthesis, Water transport, Investigating osmosis, Organisms and their environments, distribution of organisms in an ecosystem. P2 Topic 1 Static electricity, Uses and dangers of static electricity, Electric currents. P2 topic 2 Current and voltage, Investigating voltage, current and resistance, Changing resistances, Transferring energy. P2 topic 3 Vectors and velocity, Acceleration, Velocity–time graphs, Forces, Investigating force, mass and acceleration, Terminal velocity,	Sequencing long events in biology with sufficient detail in terminology. Describing accurately the movement of electrons to and from objects to create static charge. Being able to build a range of circuits and be able to use meters to find key values of current/voltage and resistance. Rearranging 4 variable formula and carrying out calculations involving vector quantities.	Long answer questions where stages and key organs or processes will often have to be sequenced correctly.	Long answer questions on specific C2 and P2 topics leading to a full test made of past paper questions on P2 and B2.
	Spring 1	B2 topics 2 and 3. P2 topics 4-6	B2 topic 2 Aerobic respiration, effects of exercise, Anaerobic respiration, Photosynthesis, rate of photosynthesis, Water transport, Investigating osmosis, Organisms and their environments, distribution of organisms in an ecosystem B2 topic 3 Fossils and evolution, Growth, Blood, The heart, circulation, blood vessels, digestive system, enzymes in digestion, absorption of nutrients, prebiotics and probiotics. P2 topic 4 Stopping distances, Friction with different surfaces (Practical), Momentum, Crumple zones, Momentum and safety, Work and power, Potential and kinetic energy. P2 topic 5 Isotopes, Ionising radiation, Nuclear reactions, Nuclear power, Fusion. P2 topic 6 Changing ideas on radiation, Nuclear waste, Half-life, Investigating radioactive decay models, Background radiation, Uses of radiation.	Sequencing long events in biology with sufficient detail in terminology. Describing key organs and their function in sequence around a system. Carrying out calculations with 4 variable equations. Describing in detail the flow of energy between potential and kinetic energy. Using chemical symbols and notation to describe various radioactive decays.	Long answer questions where stages and key organs or processes will often have to be sequenced correctly. Persuasive writing to justify the use of radioactive materials in various applications against the risk of contamination/illness.	
	Spring 2	Finishing off topics, controlled assessments and begin core revision	See previous topics. Controlled assessment task will be completed on a specific topic from the exam board.	Key practical skills including discussion of hypothesis, variables and risk. Collecting and interpreting data. Finally concluding and evaluating.	Looking critically at results to form a balanced conclusion about what they show. Presenting scientific data correctly in tables and graphs.	Full set of past papers on B2, C2 and B2.
	Summer 1	Core and additional science revision.	See previous topics.	See previous topics.	Exam technique and revision tactics.	Full set of past papers on B1, C1 and B1. Full set of past papers on B2, C2 and B2.
	Summer 2	Exams			Exam technique and revision tactics.	

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11 Additional applied	Autumn 1	A193 Work related report and standard procedures.	A193 - Work related report coursework completion and standard procedures	Students will need to work closely to the mark schemes. They will also utilise research skills.	To transfer comments they have research into their own words.	Work related report coursework grade.
	Autumn 2	A193 Suitability study and standard procedures.	A193 suitability Study coursework completion and standard procedures.	Carryout practical activities to test the suitability of a range of products to their use. Analyse and evaluate results. Careful application of mark schemes will be required.	Looking critically at results to form a balanced conclusion about what they show. Presenting scientific data correctly in tables and graphs.	Full coursework grade.
	Spring 1	A191 - Science in Society	A191 - Sports & Fitness (A1.2 has been covered), Health Care, Monitoring & Protecting the Environment, Monitoring & Protecting the Environment, Scientists Protecting the Public	Describing key biological processes in the correct sequence using correct and detailed terminology. Linking key biological concepts to the job role examples discussed. Learning the sequence of key processes in A and E, midwifery and other medical professions.	Long answer questions where stages and key organs or processes will often have to be sequenced correctly. Persuasive writing to justify the use of a set of procedures in various medical applications.	Selected long and shot answer questions leading to a A191 full past paper.
	Spring 2	A192 - Science of Materials and production	A192 - Sports Equipment, Stage & Screen, Agriculture, Biotechnology & food, Agriculture, Biotechnology & food, Making Chemical Products, Making Chemical Products.	Linking properties of materials to their specific role for sports equipment. This includes being able to interpret data from graphs. Considering the properties of light and sound and how materials can be used to get the desired effect in a theatre setting. This includes being able to design simple circuits. Linking biological and chemical concepts such a writing equations to explain production and manufacture of products in agriculture and the chemical industry.	Explaining sequences of events. Linking material properties to uses in many applications.	Selected long and shot answer questions leading to a A192 full past paper.
	Summer 1	Core revision and additional applied revision	See previous topics.	See previous topics.	Exam technique and revision tactics.	
	Summer 2	Exams			Exam technique and revision tactics.	