

Curriculum Map

Year 12 AAQ

Year 12 Biology				Year 12 Chemistry		Yr 12 Physics
Date	Week	Lesson 1	Lesson 2	Lesson 1	Lesson 2	Lesson 1
01-Sep	1	Introduction and standards setting	A1: Structure and function of cells and tissues: Lesson 1: Structure and function of PROKARYOTIC cells (A1.1.1)	Introduction and standards setting	A-Atomic and Electronic Structure A1.1 Features of the Periodic Table	Introduction and standards setting
08-Sep	2	Lesson 2: Structure and function of organelles in EUKARYOTIC cells (A1.1.2 and A1.2 - Recognising organelles from micrographs and photo micrographs)	Lesson 3: Structure and function of plant cells (A1.1.3 and A1.3 - Similarities and differences between the structure and function of plant cells and animal cells)	A1.2 Electronic Structure	A1.3 Ionisation Energy	A1.1.1 understand terminology: periodic time; wave speed; wavelength; frequency; amplitude; oscillation A1.1.2 graphical and diagrammatic representation of wave feature A1.2 Similarities and differences between transverse and longitudinal wave Exam questions review and challenge A1.4 Using the wave equation: speed = frequency x wavelength
15-Sep	3	Lesson 4 A1.4 Responses of Gram-positive and Gram-negative bacteria when exposed to antibiotics	Lesson 5: Magnification calculations (A1.5 Calculate magnification and size of cells and organelles from images)	Summary of A1	A1 Assessment	A1.3 Concepts of; displacement, coherence, path difference, phase difference and superposition of waves as applied to diffraction gratings.
22-Sep	4	Lesson 6: A1 Summary	Lesson 7: A1 assessment	B-Bonding and Structure B1.1 Metallic Bonding, Structure and Properties	B1.2 Ionic bonding, Structure and Properties	A1.3.1 emission of different light frequencies due to electron energy level changes within the atom. A1.3.2 using diffraction gratings to



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						form line emission spectra A1.3.3 using the lines of emission spectra to identify elements in gases.
29-Sep	5	A2 Structure and function of specialised cells in multicellular organisms A2.1 The structure and function of specialised eukaryotic cells	A3 Structure and function of biological tissues A3.1 The structure and function of epithelial tissue	B1.3 Covalent compounds, Structure and Properties	B1.4 Molecular Shapes Part 1	1.5 Concepts and applications of stationary waves and resonance in strings and pipes.
06-Oct	6	A3.2 The structure and function of endothelial tissue, as illustrated by blood vessels in the cardiovascular system	A3.3 The structure and function of nervous tissue	B1.5 Molecular Shapes Part 2	B1.6 Electronegativity and Polarity	1.5.1 concepts and applications of stationary waves and resonance to musical instruments. Exam practise: challenge and long answer questions
13-Oct	7	A2 and A3 Summary	A2 and A3 assessment	B1.7 Intermolecular forces	B1.8 Hydrogen bonding and Properties of Water	1.5.2 using the equation: speed of a transverse wave on a string, $v = \sqrt{T/\mu}$ where T is the tension in the string and μ is the mass per unit length of the string
20-Oct	8	B: Structure and function of biological molecules B1 Structure and function of water	Buffer	Summary of B1	B1 Assessment	A2.1 Concept of refraction and total internal reflection (TIR) A2.1.2 know that total internal reflection only occurs when the angle of incidence in the more optically dense medium is greater than the critical angle A2.1.4 know how cladding of optical



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						fibres effects the critical angle in the fibre
03-Nov	9	B2.2 Function of carbohydrates	B2.3 Using iodine and Benedict's solution as tests for presence of carbohydrates	C-Periodicity C1.1 Properties of Period 3 elements	C1.2a Oxidation Numbers and Redox	A2.1.1 use equations for refractive index $n = c/v = \sin i / \sin r$ A2.1.3 calculate the critical angle at a glass–air interface given the refractive index of glass using: $\sin c = 1 / n$
10-Nov	10	B3 Structure and function of proteins B3.1 Structure of proteins	B3.2 Function of proteins	C1.2b Redox Reactions and half-equations	C1.3 Reactions of Period 3 Elements	A2.2 Applications of optical fibres in engineering, communication, and medicine. Exam practise: Challenge and long answer questions
17-Nov	11	B3.3 Using Biuret solution as a test for presence of protein and explaining result	B4 Structure and function of nucleic acids B4.1 Structure of nucleic acids	C1.5- Acid-Base behaviour of Period 3 oxides and hydroxides	C1.6 Reactions of water and Period 3 chlorides	A2.3 Differences between analogue and digital signals
24-Nov	12	B4.2 Function of nucleic acids	B5 Structure and function of lipids B5.1 Structure of lipids	C1.7+8 Predicting physical and chemical properties and Uses of Period 3 compounds	Summary of C1	A3.3.1 using electromagnetic waves and frequencies in communication applications, to include: satellite communication and GPS positioning mobile phones Bluetooth® infrared Wi-Fi



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01-Dec	13	B5.2 Function of lipids	B5.3 Use of emulsion tests to identify presence of lipids	D-Physical Chemistry D1.1a Moles part 1	D1.1b Moles part 2	Exam practise: Long answer questions
08-Dec	14	Revision	Revision and WTM	D1.2a Chemical Kinetics part 1	D1.2b Chemical Kinetics part 2	A3.2 Use the inverse square law in relation to the intensity of a wave: $I = k / r^2$
15-Dec	15	Revision	Revision	D1.3a Chemical energetics part 1	D1.3b Chemical energetics part 2	Unit A Revision Assessment
Date	Week	Lesson 1	Lesson 2	Lesson 1	Lesson 2	Lesson 1
5-Jan	16					
12-Jan	17					
19-Jan	18	C1.2b Methods used to transport molecules	C1.3 Significance of surface area to volume ratio in living organisms	D1.4a Chemical equilibrium	D1.4b Chemical equilibrium	2.2 Definitions of inertia, mass and weight. B2.2.1 inertia as a resistance to change in motion B2.2.2 gravitational field strength (g) and weight B2.2.3 calculations for weight, equation $W = m g$
26-Jan	19			D1.4c Chemical equilibrium	D1.5 Haber Process	B2.1 Newton's First Law of Motion – the application of a resultant force to make an object move or stop
		C1 Summary	C1 Assessment			
02-Feb	20	C2 Enzymes as biological catalysts C2.1 Structure of enzymes	C2.2 Function of enzymes	D1.6 Applications of Green Chemistry	Summary of D1	Unit A Assessment review



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09-Feb	21	C2.3 Factors affecting enzyme activity	C2 Summary	E-Organic Chemistry E1.1 Introduction to Key Terms	E1.2 Structural Representations	B2.3 Calculation of the coefficient of friction (μ) using the equation: force $F = \mu N$ where N is the normal reaction force, the weight of object on a horizontal surface
23-Feb	22	C2 Assessment	C3 Homeostasis C3.1a The purposes of homeostasis	E1.3 Naming organic molecules	E1.4 Isomerism	B2.3.1 measuring coefficient of static friction, where F is the force applied just as the object is about to move B2.3.2 measuring coefficient of dynamic (kinetic) friction, where F is the force applied to keep the object moving at a constant velocity.
02-Mar	23	C3.1b The purposes of homeostasis	C3.2 Negative feedback loops affecting the body	E1.5 Sigma and pi orbitals	E1.6 Changes in boiling points	B2.5 Using Newton's Second Law of Motion, force is proportional to rate of change of momentum, to include: $F = (mv - mu) / t$ and $F = ma$; force is proportional to acceleration for a constant mass
09-Mar	24	C3.3 Positive feedback loops affecting the body	C3.4a Interrelationship between nervous and endocrine system responses	E1.7a Reactions of organic compounds (Addn/Elim)	E1.7b Reactions of organic compounds (Subs/Ox/Cond'n)	B2.5.1 calculations using Newtons Second Law Exam practise: calculations
16-Mar	25	C3.4b Interrelationship between nervous and endocrine system responses	C3.5 Disturbance and homeostasis	E1.8 Reactions of commercial importance	E1.9 Combustion, CFC's, polymers and alcohols	B2.6 Newton's third law of motion action and reaction are equal and opposite



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23-Mar	26	C3 Summary	C3 Assessment	E1.10 Solutions to environmental problems	Summary of E1	2.5.2 implications for transportation when travelling at high speed with low mass and low speed with high mass B2.5.3 use of impact force controls: air bags seat belts helmets for motor bike users passenger 'cells' crumple zones.
13-Apr	27	Revision	Revision	Revision	Revision	B2.7 Know that if F is the resultant force on an object, the object accelerates, if the forces are balanced F is zero and the object is moving at a constant velocity or stationary (may cover with Newton 1)
20-Apr	28	Revision	Revision	Revision	Revision	B2.7.1 effect of air resistance, drag and terminal velocity in different applications, to include: vehicles on roads falling parachutes objects falling in liquids
27-Apr	29	Revision	Revision	Revision	Revision	Unit B revision
04-May	30	Revision	Revision	Revision	Unit 2 exam 05/05	Unit 3 exam 06/05



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11-May	31	Revision	Revision			
18-May	32	Unit 1 Exam 19/05/2026				
01-Jun	33	Unit 4- Task 2 Biology Techniques Plant Distribution & Microscope work Introduction to sampling methods	Risk assessments and planning field work	Introduction to colorimetry and Beer-Lamberts Law	Risk assessment for colorimetry	
08-Jun	34	Methods for field work	Light vs plant growth	Colorimetry of starch solutions (calibration of colorimeter)	Colorimetry of starch solutions (unknown solutions)	
15-Jun	37					
22-Jun	35	Observing and identifying chloroplasts	Measuring palisade cells and nuclei (micrometry)	Calibration curve and analysis	Conclusion and evaluation	
29-Jun	36	Coursework write up	Coursework write up	Coursework write up	Coursework write up	
06-Jul	38	Coursework write up	Coursework write up	Coursework write up	Coursework write up	
13-Jul	39	Coursework write up	Coursework write up	Coursework write up	Coursework write up	