

Year 11 – Chemistry – 2019

New Curriculum (ATAR)

Term 1		Term 2		Term 3		Term 4	
W1 INTRODUCTION		W1 Unit 1 topic 1 Intro to bonding Ch 3.1 p 74	Covalent Bonding	W1	Review Measurement and Error	W1 <b>Revision (Unit 2)</b>	Revision
			Lewis Structures	Rates of reactions Unit 2 Topic 3	Collision Theory		Revision
	Data Booklet Text book overview Expectations and overview	Unit 1 Topic 2 Bonding and Properties Ch 7 p147	Characteristics/properties of ionic, metallic, covalent & hydrocarbons	Ch 19 p422	Maxwell-Boltzmann Measuring rates of reactions and Calculations Catalyst (p434-439)		Revision
W2 Unit 1 Topic 1 Atomic model Ch 2.1 p44  Periodic table Ch 2.2 p48  Electron config Ch 2.3 p 53	Review Atomic Structure	W2 Unit 2 Topic 1	Characteristics/properties of ionic, metallic, covalent & hydrocarbons	W2	IA2 Mandatory Prac ** Investigate the rates of chemical reactions	W2 <b>Revision (Unit 1)</b>	Revision
	Periodic Table basics and Electron Configurations	Intermolecular Forces Ch 12 p268	Shapes - VESPR	Rates of reactions Unit 2 Topic 3	Graphing results and calcs...		Revision
	Electron configurations and orbital diagrams		Polarity and intermolecular forces	Ch 19.3  Use this mandatory prac for the assessment**	Answers and calcs cont... – encourage stns to start rationale -		Revision
W3 Isotopes Ch 4 p92  Unit 1 Topic 1 Periodic Trends Ch 2 p42	Isotopes Periodic table trends- Atomic radius and Ionisation energy	W3 Intermolecular Forces Unit 2 Topic 1	Properties	W3	IA2 Panning IA2 and choosing the modifications for the prac	W3 <b>Block Exams</b>	
	Periodic table trends- Atomic radius and Ionisation energy	Ch 12.4	Prac- Construct Molecules		IA2 Planning and writing up prac		
	Periodic table trends- Electronegativity Oxides Analyse, Evaluate and Interpret data		Properties of water		IA2 Planning and writing up prac		
W4 Unit 1 Topic 2 Compounds and mixtures Ch 6.1 & 6.2 p 130-137  Unit 1 Topic 3 Physical chem changes (Balancing reactions) Ch 9.1 p190 Mole Concept	Pure Substances, Heterogeneous and Homogeneous	W4	Concentration	W4	IA2 Do the prac with their Mods and collect data	W4 Y11/Y12 Camp Rates of	
	Balance equations	Aqueous Solutions and Molarity Unit 2 Topic 2	Concentration		IA2 Data Analysis		
	The mole concept Avogadro's no	Ch 15 p352  IA3	Start IA3		IA2 Analysis and Evaluation		
W5 Unit 1 Topic 3  Mole Concept Ch 8.1-8.3 p170	Conservation of mass Molar Mass	W5 Solubility Unit 2 Topic 2	IA3	W5	IA2 Analysis and Evaluation	W5  Equilibrium (Chemical) Ch 2.1 P44	Closed systems and physical changes
	Empirical and molecular formulas	Ch 16.2 p386	Solubility		IA2 Draft Due!		Dynamic equilibrium Activation energy
	Experimental vs theoretical yield Stoichiometry ratio and limiting reactants		Solubility Curves		IA2 Work on final copy		Graphical data

W6 Mole Concept p177 & p184  Mandatory Prac Page 448  Experimental Yields Ch 8.5 p 182	Solving problems using mole concepts	W6 Ions in solutions Unit 2 Topic 2  Ch 16.1 p378  IA3	Precipitation – Solubility rules	W6 Exothermic and Endothermic reactions Ch 19.2 p430 Energy profile diagrams p430 Unit 1 Topic 3 Ch 9 p202	Energy Profile Diagrams Chemical Energy and Thermochemistry	W6 Factors that affect Equilib Ch 2.2 p49  Equilib Constants Ch 2.4 p62	Le Chatelier's principle & collision theory
	Mandatory Prac- Empirical formula of an oxide (Magnesium Oxide)		IA3		Hess's Law		
	Calculations including percentage yield from experimental or given data		IA3		Specific Heat Capacity		Equilibrium Constants Kc
W7 Unit 2 Topic 1 Gases Ch 14 p 324	Formative assessment	W7	IA3	W7 Fuels Unit 1 Topic 3  Ch 11 p248	IA2 SUBMIT FINAL COPY Mandatory Prac	W7  Equilib constants cont..... Ch 2,4 p62  Properties of acids and bases Ch 3.1 p76 & Ch3.2 p78	Equilibrium Constants
	Relationship between V, n, and molar volume at STP Kinetic theory		IA3		Specific Heat Capacity cont.....		Solving problems calculating equilibrium constants and concentration of reactants
	Ideal Gas law Mole concept to calculate mass of chemicals and or volume of a gas involved in a chemical reaction at STP Problems		IA3 Draft Due!		Compare Fuels		Properties of acids and bases
W8	Mandatory Prac- Properties of gases to determine Molar Volume of a gas	W8  Ions in solutions Unit 2 Topic 2  Ch 16.1	IA3	W8 SWAP WK 8 and 9  Reactions of Acids Unit 2 Topic 2  Ch 18 p412	Acids & Bases	W8  SUBMIT year 11 Results	DO some titrations with Properties of acids and bases (1 hr)
	Data analysis practice for Data test		Draft Feedback		Acids and metals Acids and Carbonates		Titration End point Equivalence point Indicators
			Experimental Evidence		Equations		Titration Calculations Practice data test like qns
W9 Assessment Week  Data Test	Revision	W9 Unit 1 Topic 3 Measurement, Uncertainty and Error Ch 10 p224	Mandatory Prac – Ions in solution Precipitation reactions to identify cations and anions	W9  pH Unit 2 Topic 2  Ch 17 p400	pH	W9	FINISH year 11
	Data Test		IA3 DUE!! Calculating uncertainty & errors		Arrhenius Model		
	Block exams???		Calculating uncertainty and Graphing		Mandatory Prac- Investigate the properties of strong and weak acids		
W10 Pure Substances Chapter 6.3 p138  Unit 1 topic 1 Intro to bonding  Types of bonding Chapter 3.1 p74	Nano materials	W10 Measurement, Uncertainty and Error  Unit 1 Topic 3 Ch 10 p238	Random and systematic errors	W10  Analytical Techniques Ch 5 p104 Unit 1 Topic 1	Atomic absorption and emission spectra Analysis of data (most important)		
	Ionic Bonding (Octet, Polyatomic, Formulas & naming)		Significant figures		Flame test AAS As examples of analytical techniques		
	End of term Review				Mass Spectrometry Calculation of relative atomic mass % abundance of isotopes of an element from data (most important)		

Year 12 – Chemistry– 2020

New Curriculum (ATAR)

Term 1		Term 2		Term 3		Term 4	
W1		W1 Electrolytic cells Ch 8.1 & 8,2	Electrolytic cells	W1 Synthetic Polymers Ch 11.4 p290	IA3 (3)	W1 <b>Revision (Unit 4)</b>	Revision
	Review Last year's concepts		Electrolytic cells		Synthetic polymers		Revision
	Review Last year's concepts		Prac on Electrolytic		IA3 (4)		Revision
W2 Unit 3 Topic 1 Ch 3.3 p81 pH scale ch 3.4 p83 Ch 3.5 p87 Bronsted Lowrey Model	Water as a weak electrolyte and finish catch up	W2	Electrolytic	W2	IA3 (5)	W2 <b>Revision (Unit 3)</b>	Revision
	pH calcs & pOH calcs		IA2 (1) Discuss mods to Prac		IA3 (6)		Revision
	Bronstead-Lowry		IA2 (2) Rationale and mods		IA3 (7)		Revision
W3 Ch 3.7 p92 (Buffers) Dissociation Constant Ch 4.1 p98 Ch 4.2 p103 (calcs)	Buffers, do some review Qn's	W3	IA2 (3) Do the prac	W3 Unit 4 Topic 2 Chemical Synthesis Ch 13.1,13.2 &	IA3 (8) Draft Due!	W3 <b>Revision (Units 3/4)</b>	Revision
	Ka & Kb 4.1 p99		IA2 (4) Analysis		Chemical Synthesis		Revision
	pKa and PKb including calcs		IA2(5) Analysis		Catch up lesson....		Revision
W4 Ch 4.3 p106 (indicators) Titrations Chap 5.1 & 5.2 p114	Indicators includes graphs	W4	IA2 (6) Evaluation	W4 Hydrogen Fuel Cells 13.4 p324  Chem synthesis reaction yield Ch 13.5 p337	Fuels inc bio fuels p328 Hydogen fuel cells	<b>W4 Revision Block Exams</b>	
	Intro to titrations and how to..		IA2 (7) Evaluation		IA3 (9) Due! Chemical synthesis reaction yield – calcs- p327 MUST do q29 public paper 1		
	Mandatory prac		IA2 (8) Evaluation		Review qns P340		
W5  Chap 5.3 Page126-131 Volumetric analysis Review from last year	Prac cont... and calcs	W5 Unit 4 Starts, Topic 1 Structure of organic compounds Ch 9.1 p220 Functional groups Ch 9.2 p226	IA2 (9) Draft Due	W5 Green Chemsitry Ch 14.1 & 14.2 p344 Atom Economy Ch14.4 p354  Unit 4 Topic 2 Macromolecules: Addition polymers Ch 15.1 p362	Green Chemistry	<b>W5 Revision Block Exams</b>	
	Acid base titrations and curves		Hydrocarbons, naming and drawing		Atom economy		
	<b>Block exam??</b>		Functional groups		Addition polymers		
W6	Revision	W6 Structural formulas Ch 9.3 p232 Isomers Ch 9.4 p234	Functional groups cont...	W6 Condensation polymers Ch15.2 p366 Polymer use Chp 15.3 p369 Amino acids and polypeptides Ch 15.4 373 Macromolecules Monosaccharides etc Ch 15.5 p 376 <b>Submit results for IA2 &amp; IA3</b> Unit 4 Topic 2	condensation polymers	<b>W6 Revision Block Exams</b>	
	Revision		Structural formulas		Polymer use, amino acids and polypeptides		
	IA1 Data Test		Isomers		Monosaccharides  Review Question p381		

W7 Redox Ch 6.1 p138 Ox numbers Ch 6.2 p145	Displacement Electron loss/gain Definitions	W7 Physical properties and trends Ch 9.5 p238	Due date for IA2 Mandatory Prac – 3D models	W7 Unit 4 Topic 2 Molecular Manufacturing Ch 16.1 p384	Molecular Manufacturing- worksheet using QCE Unit 4 (Surfing) p158-159	<b>W7 Revision Block Exams</b>	
	Displacement rn – Mandatory prac single displacement p406		Physical prop and trends- disp and H-bonding		Analytical Techniques		
	Ox state, Ox numbers		Chemical synthesis Contact process and Harber process				
W8 Half equations and overall redox eq Ch 6.3 p150 <b>Submit results for IA1</b> Galvanic cells Chp 7,1 p162	½ equations and overall	W8 Unit 4 Topic 1 Organic reactions and pathways (7) Addition and elimination rn Ch 10.1 p 252 Oxidation and reduction rn Ch10.2 p 256 Condensation rn Ch 10.3 p 260 Substitution rn Ch10.4 p 263	Addition and elimination reactions	W8 Unit 4 Topic 1 Analytical Techniques (6) Chromatography and electrophoresis Ch 12.1 p300 Data from analytical tech Ch 12.2 p306	Chromatography and Electrophoresis of proteins (prac ??)		
	½ equations cont.....		Oxidation and reduction		Data from analytical techniques		
	Electrochemical Cells: Electrochem series Galvanic cells including structure & equations		Condensation reactions and substitution reactions		SFD!!!		
W9 Galvanic cells Mandatory prac p407	Galvanic cells cont....	W9 Green Chemsitry Ch 14.1 & 14.2 p344  Unit4 topic 1 Organic Materials, Structure and function (5)  Carbohydrates Ch 11.1 p276	Hand out IA3 Intro to Green Chemistry, polymers and fuels (Topic for IA3)	W9 Analysing data from spectra Ch 12.3 P312	Data from analytical techniques		
	Mandatory prac- galvanic cell		Choose claim and work on research question (1)		Analysing data from Spectra		
	Mandatory prac- Hand out IA2		Carbohydrates		Analysing data from Spectra		
W10 Standard electrode potential Ch 7.2 p174 Applications of spontaneous reactions Ch 7.3 p179 Intro to electrolytic cells Ch 8.1 p190	Standard electrode potential	W10  Unit4 topic 1 Lipids Ch 11.2 p280 Proteins Ch11.3 p283	Decide on research qn prior to holidays (2)	W10 Catch up week	Catch up week		
	Alkaline batteries and fuel cells		Lipids		Catch up week		
	Intro to electrolytic cells Electrolytic cells – # simulation		Proteins		Catch up week		

# Simulation for Electrolytic cells: [http://media.pearsoncmg.com/bc/bc\\_0media\\_chem/chem\\_sim/html5/Electro/Electro.php](http://media.pearsoncmg.com/bc/bc_0media_chem/chem_sim/html5/Electro/Electro.php)