

Chemistry 1st Year Scheme of Work 2024-25

w/b	Content	Test	Practical
Sep 9 th	Course introduction and lab rules 2.1.1 Atomic structure and isotopes 2.1.1 Relative atomic masses		1. Magnesium silicide
Sep 16 th	2.1.2 Compounds, formulae, and equations 2.1.3 Amount of substance: the mole	0. Induction test	
Sep 23 rd	2.1.3 Determining empirical and molecular formulae 2.1.3 Water of crystallisation		2. Finding the formula of copper oxide (preparation for practical 3)
Sep 30 th	2.1.3 Calculations involving: masses, concentrations, and volumes of gases 2.1.3 Volumes and concentrations of solutions	1. Atomic structure & ½ moles	3. ASSESSED PRACTICAL: PAG 1 Determination of the formula for magnesium oxide
Oct 7 th	2.1.3 Ideal gases		4. Finding the value of x in the formula: CuSO ₄ .xH ₂ O
Oct 14 th	2.1.3 Percentage yield and atom economy		5. Finding the relative atomic of an unknown metal
Oct 21 st	2.1.4 Acids and bases 2.1.4 Acid-base titrations	2. Full moles	6a. Preparing a standard solution
Autumn ½ term: Oct 28 th – Nov 1 st			
Nov 4 th	2.1.5 REDOX: oxidation numbers and redox reactions		6b. Determination of concentration of HCl (preparation for practical 7)
Nov 11 th	2.2.1 Electronic structure: energy levels, shells, sub-shells, atomic orbitals, electron configurations		7. ASSESSED PRACTICAL: PAG 2 Identification of an unknown carbonate
Nov 18 th	2.2.2 Bonding and structure: ionic, covalent, dative covalent 2.2.2 Shapes of molecules and ions	3. Acids, bases & electrons	
Nov 25 th	2.2.2 Electronegativity and bond polarity 2.2.2 Intermolecular forces		
Dec 2 nd	3.1.1 Periodicity: trends in electron configuration and ionization energy		
Dec 9 th	3.1.1 Periodic trends in structure and melting point	4. Bonding, shape & intermolecular forces	
Dec 16 th	3.1.2 Group 2	5. Periodicity	9. Group 2
Christmas holidays: Dec 19 th – Jan 3 rd			
Jan 6 th	3.1.3 Group 7 3.1.4 Qualitative analysis: tests for ions		10. Group 7: The halogens 11. Group 7: The halides 12a. Demo: Qualitative analysis (preparation for 12b)
Jan 13 th	3.1.4 Qualitative analysis: tests for ions	6. Group 2 and Group 7	12b. ASSESSED PRACTICAL PAG 4 Identifying unknowns
Jan 20 th	3.2.1 Enthalpy changes: endothermic/exothermic reactions, activation energy, enthalpy change definitions	Mid-year exam	
Jan 27 th	3.2.1 Enthalpy changes: calculations involving experimental data 3.2.1 Enthalpy changes: calculations involving bond enthalpies		13. Enthalpy change of combustion 14. Determination of enthalpy change of neutralisation
Feb 3 rd	3.2.1 Enthalpy changes: calculations involving Hess cycles		15. ASSESSED PRACTICAL PAG 3 Determination of an enthalpy change by Hess' Law
Feb 10 th	3.2.2 Reaction rates: calculating rate, catalysis, Boltzmann distribution	7. Enthalpy changes	16. Rate of reaction of CaCO ₃ and HCl
Spring ½ term: Feb 17 th – Feb 21 st			
Feb 24 th	3.2.3 Chemical equilibria: Le Chatelier's principle, effect of catalyst, K _c		17. To illustrate Le Chatelier's Principle
Mar 3 rd	4.1.1 Organic Chemistry: basic concepts, functional groups, nomenclature 4.1.1 Structural isomerism	8. Rates and equilibrium	
Mar 10 th	4.1.2 Alkanes, radical substitution		
Mar 17 th	4.1.3 Alkenes, stereoisomerism, electrophilic addition	9. Basic concepts and alkanes	18. Alkanes and alkenes
Mar 24 th	4.1.3 Addition polymerization, other reactions of alkenes		
Mar 31 st	4.2.1 Alcohols: properties and reactions	10. Alkenes	
Easter holidays: Apr 7 th – Apr 21 st			
Apr 21 st	4.2.2 Haloalkanes	11. Alcohols	19. Oxidation of ethanol (preparation for practical 20) 21. Hydrolysis of haloalkanes
Apr 28 th	4.2.4 Analytical techniques: infrared spectroscopy, mass spectrometry, combined techniques		20. ASSESSED PRACTICAL PAG 5 Preparation of cyclohexene
May 5 th	Past papers 1 st year study leave starts	12. Haloalkanes and analysis	
May 12 th	Study leave		
May 19 th	Transfer exam: 2 hours 15 mins, covering all Year 1 content.		
Summer ½ term: May 26 th – May 30 th			