Edexcel International GCSE Chemistry 4CH1 Learning Plan

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|  **Unit: 1. Principles of Chemistry** | **Chapter: 5. Chemical Formulae, Equations and Calculations Part 1** | **Hours: 6** |
| Content coverage | Learning outcomes | Resources | Assessment |
| **Section 1: Principles of chemistry**(e) Chemical formulae, equations and calculations | Students will be assessed on their ability to:1.25 write word equations and balanced chemical equations (including state symbols): * for reactions studied in this specification
* for unfamiliar reactions where suitable information is provided

1.26 calculate relative formula masses (including relative molecular masses) (*M*r) from relative atomic masses (*A*r)1.27 know that the mole (mol) is the unit for the amount of a substance1.28 understand how to carry out calculations involving amount of substance, relative atomic mass (*A*r) and relative formula mass (*M*r).1.29 calculate reacting masses using experimental data and chemical equations1.30 calculate percentage yield1.31 understand how the formulae of simple compounds can be obtained experimentally, including metal oxides, water and salts containing water of crystallisation.1.32 know what is meant by the terms empirical formula and molecular formula1.33 calculate empirical and molecular formulae from experimental data1.36 *practical:* *know how to determine the formula of a metal oxide by combustion (e.g. magnesium oxide) or by reduction (e.g. copper(II) oxide).* | Video: Section 1 Lesson 2 – Relative Formula Mass and Chemical Equations – Beginning to 12:30 Section 1 Lesson 3 – Chemical Formulae – All.Powerpoint: Section 1 Lesson 2 – Start to Slide 49; Section 1 Lesson 3 – All slides.Textbook pages:Page 38 – Writing equationsPage 39 – Balancing equationsPage 41 – State symbolsPage 41 – How much of each substance reacts in a chemical reaction?Page 41 – Relative Atomic MassPage 42 – Relative formula massPage 44 – The molePage 44 – The importance of quoting the formulaPage 45 – Simple calculations with molesPage 46 – FormulaePage 49 – The formula for copper oxidePage 51 – Determining the formula of waterPage 51 – Working out formulae using percentage composition figuresPage 52 – Converting empirical formulae into molecular formulaePage 53 – Empirical formula calculations involving water of crystallisationPage 53 – Calculations using moles, chemical equations and masses of substancesPage 54 – Calculations involving only massesPage 54 – A problem involving heating calcium carbonatePage 55 – A problem about extracting ironPage 56 – A problem involving the extraction of leadPage 57 – Calculating percentage yieldsPage 58 – Calculations in which you have to calculate which substance is in excess | Pages 60 to 63 Qs (1) to (20)Chapter 5 Answers to textbook questionsUnit 1-5 Chemical Formulae Part 1 exam question - pdfUnit 1-5 Chemical Formulae Part 1 exam question mark scheme – pdfUnit 1-5 Formulae and Equations exam question - pdfUnit 1-5 Formulae and Equations exam question mark scheme – pdfSection A5 - Talking paper video Section E22 - Talking paper video  |

Videos – [www.igcsesciencecourses.com](http://www.igcsesciencecourses.com)

Textbook Ref: Edexcel International GCSE (9-1) Chemistry Student Book - Pearson (Clark, Owen and Yu)