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 substance  1.28 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 equations  1.30 calculate percentage yield  1.31 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 formula  1.33 calculate empirical and molecular formulae from experimental data  1.36 *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 equations  Page 39 – Balancing equations  Page 41 – State symbols  Page 41 – How much of each substance reacts in a chemical reaction?  Page 41 – Relative Atomic Mass  Page 42 – Relative formula mass  Page 44 – The mole  Page 44 – The importance of quoting the formula  Page 45 – Simple calculations with moles  Page 46 – Formulae  Page 49 – The formula for copper oxide  Page 51 – Determining the formula of water  Page 51 – Working out formulae using percentage composition figures  Page 52 – Converting empirical formulae into molecular formulae  Page 53 – Empirical formula calculations involving water of crystallisation  Page 53 – Calculations using moles, chemical equations and masses of substances  Page 54 – Calculations involving only masses  Page 54 – A problem involving heating calcium carbonate  Page 55 – A problem about extracting iron  Page 56 – A problem involving the extraction of lead  Page 57 – Calculating percentage yields  Page 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 questions  Unit 1-5 Chemical Formulae Part 1 exam question - pdf  Unit 1-5 Chemical Formulae Part 1 exam question mark scheme – pdf  Unit 1-5 Formulae and Equations exam question - pdf  Unit 1-5 Formulae and Equations exam question mark scheme – pdf  Section 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)