Edexcel International GCSE Chemistry 4CH1 Learning Plan

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| **Unit: 3.Physical Chemistry** | | **Chapter: 19. Energetics** | | **Hours: 4** |
| Content coverage | Learning outcomes | Resources | Assessment | |
| **Section 3: Physical chemistry**  (a) Energetics | Students will be assessed on their ability to:  3.1 know that chemical reactions in which heat energy is given out are described as exothermic, and those in which heat energy is taken in are described as endothermic  3.2 describe simple calorimetry experiments for reactions such as combustion, displacement, dissolving and neutralisation  3.3 calculate the heat energy change from a measured temperature change using the expression *Q* = *m*cΔ*T*  3.4 calculate the molar enthalpy change (Δ*H*) from the heat energy change, *Q.*  *3.8 practical: investigate temperature changes accompanying some of the following types of change:*   * *salts dissolving in water* * *neutralisation reactions* * *displacement reactions* * *combustion reactions .* | Video: Section 4 – Lesson 2 – Energy in Reactions  Powerpoint: Section 4 Lesson 2 Energetics  Textbook pages:  Page 207 – Exothermic reactions  Page 209 – Showing an exothermic change on an energy level diagram  Page 209 – Endothermic reactions  Page 210 – Showing an endothermic change on an energy level diagram  Page 210 – Measuring enthalpy changes of reactions  Page 211 – Calorimetry experiments for determining the enthalpy changes of reactions  Page 214 – Working out enthalpy changes for reactions involving solutions using calorimetry experiments  Page 219 – Why do reactions either give out or absorb heat?  Page 220 – Calculations of enthalpy changes of reaction using bond energies | Pages 224 – 226 Qs (1) to (8)  Chapter 19 Answers to textbook questions  Unit 3-19 Energetics exam question - pdf  Unit 3-19 Energetics exam question mark scheme – pdf  Section B14 - 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)