Edexcel International GCSE Chemistry 4CH1 Learning Plan

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| **Unit: 3. Physical Chemistry** | | **Chapter: 20. Rates of Reaction** | | **Hours: 4** |
| Content coverage | Learning outcomes | Resources | Assessment | |
| **Section 3: Physical chemistry**  (b) Rates of reaction | Students will be assessed on their ability to:  3.9 describe experiments to investigate the effects of changes in surface area of a solid, concentration of a solution, temperature and the use of a catalyst on the rate of a reaction  3.10 describe the effects of changes in surface area of a solid, concentration of a solution, pressure of a gas, temperature and the use of a catalyst on the rate of a reaction  3.11 explain the effects of changes in surface area of a solid, concentration of a solution, pressure of a gas and temperature on the rate of a reaction in terms of particle collision theory  3.15 *practical: investigate the effect of changing the surface area of marble chips and of changing the concentration of hydrochloric acid on the rate of reaction between marble chips and dilute hydrochloric acid.*  3.12 know that a catalyst is a substance that increases the rate of a reaction, but is chemically unchanged at the end of the reaction    3.13 know that a catalyst works by providing an alternative pathway with lower activation energy  **3.14C draw and explain reaction profile diagrams showing ΔH and activation energy**  3.16 *practical: investigate the effect of different solids on the catalytic decomposition of hydrogen peroxide solution.* | Video: Section 4 Lesson 3  Powerpoint: Section 4 Lesson 3  Textbook pages:  Page 227 – Experiments to measure the rate of reaction  Page 231 – Changing the surface area of the reactants  Page 232 – Changing the concentration of the reactants  Page 234 – Changing the temperature of the reaction  Page 234 – Changing the pressure on the reaction  Page 235 – Catalysts  Page 237 – How does a catalyst work? | Pages 238 – 239 Qs (1) to (3)  Chapter 20 Answers to textbook questions  Unit 3-20 Rates of Reaction exam question - pdf  Unit 3-20 Rates of Reaction exam question mark scheme – pdf  Section A6 - 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)