Edexcel International GCSE Chemistry 4CH1 Learning Plan

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| **Unit: 4. Organic Chemistry** | | **Chapter: 23. Crude Oil** | | **Hours: 4** |
| Content coverage | Learning outcomes | Resources | Assessment | |
| **Section 4: Organic chemistry**  (b) Crude oil | Students will be assessed on their  ability to:  4.7 know that crude oil is a mixture of hydrocarbons  4.8 describe how the industrial process of fractional distillation separates crude oil into fractions  4.9 know the names and uses of the main fractions obtained from crude oil: refinery gases, gasoline, kerosene, diesel, fuel oil and bitumen  4.10 know the trend in colour, boiling point and viscosity of the main fractions.  4.11 know that a fuel is a substance that, when burned, releases heat energy  4.12 know the possible products of complete and incomplete combustion of hydrocarbons with oxygen in the air  4.13 understand why carbon monoxide is poisonous, in terms of its effect on the capacity of blood to transport oxygen; *references to haemoglobin are not required*  4.14 know that, in car engines, the temperature reached is high enough to allow nitrogen and oxygen from air to react, forming oxides of nitrogen  4.15 explain how the combustion of some impurities in hydrocarbon fuels results in the formation of sulfur dioxide  4.16 understand how sulfur dioxide and oxides of nitrogen oxides contribute to acid rain.  4.17 describe how long-chain alkanes are converted to alkenes and shorter-chain alkanes by catalytic cracking (using silica or alumina as the catalyst and a temperature in the range of 600–700 ºC)  4.18 explain why cracking is necessary, in terms of the balance between supply and demand for different fractions. | Video: Chemistry Section 5 Lesson 2 – Industrial Chemistry – Crude oil.  Powerpoint: Section 5 Lesson 2  Textbook pages:  Page 269 – What is crude oil?  Page 270 – Separating crude oil  Page 270 – Uses of the fractions  Page 272 – Environmental problems associated with the burning of fossil fuels from crude oil  Page 273 - Cracking | Pages 275 – 276 Qs (1) to (4)  Chapter 23 Answers to textbook questions  Unit 4-23 Crude Oil exam question - pdf  Unit 4-23 Crude Oil exam question mark scheme – pdf  Section D20 - 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)