Acle Academy

Year 11 C9: Hydrocarbons. Chemistry – Science Faculty

Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:
In this chapter students are introduced to hydrocarbons and alkanes. Using the understanding of chemical formulae they have built up in previous units they will learn how to identify, name and draw displayed formula of alkanes. They will then cover the combustion and cracking of alkanes. Fractional distillation, originally covered in chapter 1 is covered in more detail in the context of separating crude oil into useful fractions such as petrol and diesel fuel.	• Alkanes • Fractional distillation • Combustion • Cracking	Alkane Combustion Distillation Condensing
Challenge and Support:	**World wide learning/ links to 21st century:**	**Cultural capital/ Industry/ Enrichment:**
• *Challenge: some pupils will extend their displayed formula models and chemical naming to include alkenes as well as alkanes.* • *Scaffolding provided to help with the drawing of displayed formulae and naming alkanes.* • *Opportunities for practical demonstration of fractional distillation to support understanding and a class practical activity to crack paraffin into shorter hydrocarbons.*	• *Crude oil is a valuable commodity in the 21st century that provides us with many useful products but also challenging problems. Medicines, plastics, clothing and fuels for our vehicles all come from crude oil. Pupils will explore the uses and problems associated with our use of this commodity in the 21st century.*	• The petrochemical industry is worth 432 billion pounds globally. • The UK oil and gas industry supports an estimated 375,000 jobs.
Historical, Social, Moral, Spiritual, Cultural context:	**Cross curricular links/ literacy/numeracy:**	**Common misconceptions:**
• *Social/moral problems with using fossil fuels (specifically crude oil) are discussed in this unit. Should we stop using crude oil, are there better alternatives at the moment. What would the world look like without crude oil products?*	• Links with GCSE Physics 10P3 energy resources that look at ways (including the use of fossil fuels) that we generate electricity. • Links with GCSE Biology 11B18 biodiversity and ecosystems that looks at global warming.	• *Crude oil just makes fuel.* • *Freezing point and melting point are different.* • *Boiling point and condensing point are different.* • *Burning and heating are the same thing.*
Assessment timeline:		

- *regular EPPQs*
- *end of unit test*
- *EPPQ homework task*
- *in lesson questioning and other progress checks*

Home learning

- *EPPQ homework booklet*

Feedback

- *Students self/peer mark homework booklets and set revision goals based on understanding.*
- *Feedback based on the end of the unit test.*

Length of unit (duration indicated in lessons)

C9.1	C9.2	C9.3	C9.4	C9 test

Unit: C9 hydrocarbons, Chemistry