## High Tunstall College of Science Curriculum Intent

Subject: Chemistry Year: 11

## Thread 5a—Organic chemistry and chemical <u>detection</u>



	Chemistry Thread 5—Organic Chemistry and Chemical detection		Progress		
Торіс	Key ideas	R	Α	G	
Organic chemistry	I can describe the homologous series of alkanes, and explain how these are separated using fractional distillation (review)				
cal detec- tion	I can relate the properties of hydrocarbons to their chain length				
	I can describe the process of cracking and explain why this is useful in industry				
	I can describe what alkenes are, and explain reactions of the alkenes				
	I can describe what alcohols are, and explain reactions of alcohols				
	I can describe what carboxylic acids are, and why they are referred to as weak acids.				
	I can explain how esters are formed				
	I can compare and contrast addition polymerisation and condensation polymerisation				
	I can explain how naturally occurring polymers, DNA and amino acids are formed				

Lesson	Learning Focus	Assessment	Key Words
1	What are hydrocarbons and alkanes?	Exam questions	Alkanes, homologous se- ries
2	How do we separate the fractions of crude oil?	Extended writing question about fractional distillation	Distillation, temperature gradient
3	What is cracking and why is it useful?	Explanation, related to industry, of the need for cracking of hy- drocarbons	Cracking
4	What are alkenes and how do they react?	Description of reactions of al- kenes, and application to exam questions	
5	What are alcohols?	Completion of homologous series and equations of the reactions	Alcohol
6	What are carboxylic acids, and how do they react with alcohols?	Identification of carboxylic acids and explanation of reactions to form esters	Carboxylic acid, ester
7	How are polymers formed?	Comparative writing looking at the processes of addition and condensation polymerisation	Addition, condensation, polymerisation
8	How are natural polymers formed?	Identification of natural poly- mers and explanation of how they are formed	

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## <u>Thread 5b —Organic chemistry and chemical</u> <u>detection</u>



	Chemistry Thread 5—Organic Chemistry and Chemical detection		Progress		
Торіс	Key ideas	R	Α	G	
Organic chemistry and chemi- cal detec- tion	I can explain how to test for positive ions				
	I can explain how to test for negative ions				
	I can compare instrumental methods of analysis, with direct relation to flame emission spectroscopy				

Lesson	Learning Focus	Assessment	Key Words
9 and 10	What are the compounds?	Correct completion of the prac- tical task to review chemical analysis (linked to RPA)	
11	What is flame emission mass spectroscopy?	Extended writing question and analysis of emission spectra	Spectroscopy