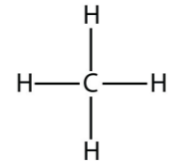
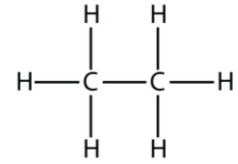
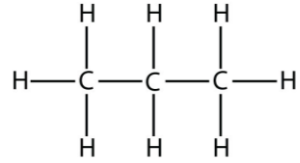
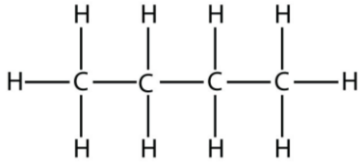
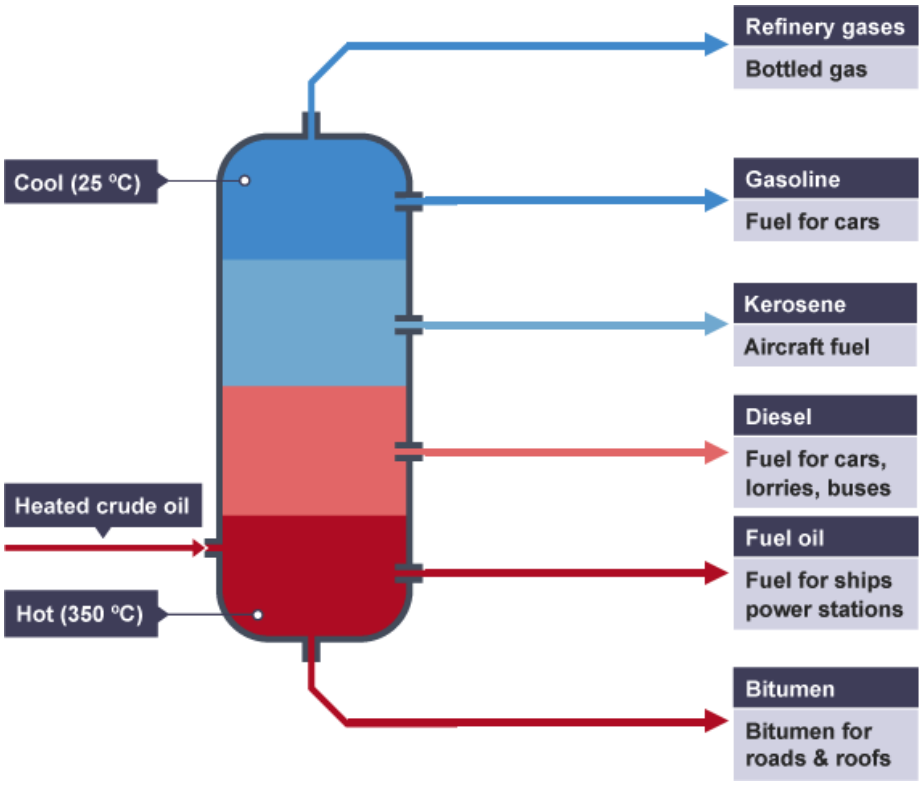
Chemistry Topic 7: Organic chemistry

1. Carbon compounds as fuels and feedstock	
Hydrocarbon	A chemical made of only carbon and hydrogen
Crude oil	A mixture of hydrocarbons found in rock
Alkane	Saturated hydrocarbon (without double bond)
Alkene	Unsaturated hydrocarbon (with double bond). They turn bromine water from brown to colourless.
Fractional distillation	A process of separating crude oil using the different boiling points of fractions
Viscosity	How thick a liquid is
Flammability	How easily a fraction catches fire
Boiling point	The temperature at which a substance turns from a liquid to a gas
Combustion	A reaction where a fuel is oxidised releasing heat energy
Cracking	Breaking less useful long-chain alkanes into useful short-chain alkanes and alkenes

2. Alkanes		
General formula	C_nH_{2n+2}	
Name	Molecular formula	Displayed formula
Methane	CH_4	
Ethane	C_2H_6	
Propane	C_3H_8	
Butane	C_4H_{10}	

3. Fractional distillation	
1.	The column is cooler at the top than the bottom
2.	The crude oil is heated
3	The fractions evaporate and rise up the column
4	The fractions condense at different points according to their boiling point
5	The liquid fractions run off and are collected



4. Properties of hydrocarbons	
Property	**Change as carbon change gets longer**
Boiling point	Increases
Viscosity	Increases (less runny)
Flammability	Decreases

5. Cracking	
Type of cracking	Conditions
Catalytic	Hot (500°C) + catalyst
Steam	Very hot (850°C) + Steam
Short chain = desirable	Long chain = undesirable