Scheme of Learning: Organic Chemistry

Topic Sequence:

1	2	3	4	5	6
Forces & Interactions	Organic Chemistry	Inheritance, Variation & Evolution	Forces & Motion	Chemical Analysis	Space (Separate Physics only)

Topic Overview:

The chemistry of carbon compounds is so important that it forms a separate branch of chemistry. A great variety of carbon compounds is possible because carbon atoms can form chains and rings linked by C-C bonds. This branch of chemistry gets its name from the fact that the main sources of organic compounds are living, or once-living materials from plants and animals. These sources include fossil fuels which are a major source of feedstock for the petrochemical industry. Chemists are able to take organic molecules and modify them in many ways to make new and useful materials such as polymers, pharmaceuticals, perfumes and flavourings, dyes and detergents.

Lesson Sequence:

We begin this topic with an introduction to hydrocarbons and the structure and properties of alkanes. We describe how the different length chains of hydrocarbons are separated from crude oil by fractional distillation. We then look at hydrocarbons as fuels and describe the process of combustion and how the more useful, smaller chained hydrocarbons can be made from cracking the more abundant but less useful longer chains.

Separate Chemistry pupils then move onto more complex organic chemistry with the description of the structural formulas and reactions of alkenes, carboxylic acids, esters and alcohols. We finish by looking at polymerisation in both synthetic and natural compounds.

Sequence of Lessons:	
1	Introduction to Hydrocarbons
2	Fractional Distillation
3	Combustion – *mid topic assessment*
4	Cracking
5	Alkenes – *Separate Chemistry Only*
6 & 7	Alcohols, Carboxylic Acids & Esters – *Separate Chemistry Only*
8	Polymerisation – *Separate Chemistry Only*
9	Natural Polymers – *Separate Chemistry Only*
10	Revision
11	Test

Resources:	
1	Resources in shared folder
2	Resources in shared folder
3	Resources in shared folder
4	Demo of cracking: ceramic wool soaked in paraffin, boiling tube and delivery tube, trough, broken pot catalyst, bromine solution, test tubes and bungs.
5	n/a
6 & 7	Resources in shared folder
8	n/a
9	DNA diagram
10	Resources in shared folder
11	Test in shared folder

Supportive Reading:

Comprehension activity	TBC

Assessment:

Knowledge:	Multiple choice and short answer questions.
Application of Knowledge:	Exam questions