

## Carbon Chemistry

What is crude oil actually made from? Why is so useful? How can we separate it and use it for different things? How is crude oil related to petrol and other fuels?

Organic chemistry is the study of the structure and properties of compounds that contain carbon. One of the biggest sources of carbon compounds is crude oil, which can be separated into many different compounds called hydrocarbons. Humans use these hydrocarbons for many different purposes.



This is the **sixth** unit we are studying as part of the big idea: **Structure Determines Properties**.

In this unit we will learn about what crude oil is and how it can be separated into different useful products. We will learn about different groups of hydrocarbons that can be obtained by fractional distillation of crude oil and the properties of these compounds and the different reactions they are involved in. We will also look at how some of these products can be made into useful polymers.

Chemistry students will also look at other groups of compounds, including alkenes, alcohols and carboxylic acids and reactions involving these compounds.

We will develop our skills in this unit by practising drawing models of covalent bonding in molecules. We will also revisit distillation as a method of separating a mixture based on the boiling points of the substances in it.

### TASKS:

What subject will this unit focus on?     BIOLOGY     CHEMISTRY     PHYSICS  
(circle the correct subject)

There are lots of keywords underlined above. List these into the two columns:

Words I know	Words I haven't seen before

**To answer before the unit:**





1. What are you most excited to learn about in this topic?

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2. What do you already know about this topic?

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3. Why do you think it's important to learn that structure determines properties?

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4. What knowledge from previous science lessons might help us?

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5. What questions do you have about this topic?

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**To answer at the end of the unit:**

1. Tick off any words in the 'words I haven't seen before' column that you are now confident with. Circle any you still need more practice to use.
2. What have you most enjoyed about this unit?  

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3. What more would you like to learn about bonding as part of the big idea: 'Structure Determines Properties'?  

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Teacher guidance:





The purpose of this resource is to provide students with an overview at the beginning and end of each unit. It is designed to create a discussion about the unit prior to the sequence of lessons.

The unit scope should be read as a guided reading activity. Tier 3 vocabulary has been highlighted. It may need to be adapted further for LPAs or pupils with different reading ages.

There are a range of ways to use this resource.

1. Display on a slide for students to read as a class. Direct students to complete the activities in their book.
2. Print off for students to stick into their book at the beginning of the unit along with their knowledge organiser. Complete as a guided reading task together. Direct students to complete the activities.
3. Have students complete as part of a booklet.
4. Set as a homework prior to a unit.

*If you have any feedback about how this resource could be used/improved, please contact the science mastery team: [sciencemastery@arkonline.org](mailto:sciencemastery@arkonline.org)*

