Knowledge check

Subject area: Organic chemistry | **Level: 14–16 years (Foundation)**

Topic: Hydrocarbons | **Source: rsc.li/34Fv93j**

1. Crude oil is made of many hydrocarbons.

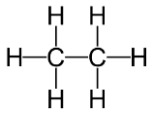
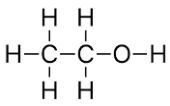
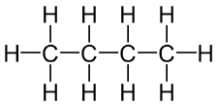
a) Complete the sentence:

Hydrocarbons contain two elements only.

They are called _____ and _____.

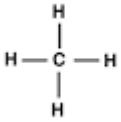
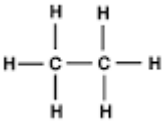
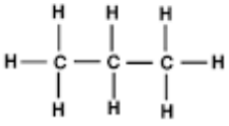
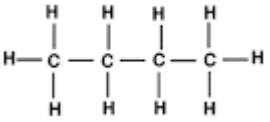
b) Which of these molecules are hydrocarbons?

Tick the boxes.

2. One family of hydrocarbons found in crude oil is called the alkanes.

Here are the first four members of the alkane homologous series (family):

				
Name				
Molecular formula				

a) Name each of these alkanes.

Write your answers in the table.

b) What is the molecular formula for each of these alkanes.

Write your answers in the table.

c) What is the molecular formula of the next alkane in the family?

3. The alkanes have a general formula.

The letter n is the number of carbon atoms in an alkane molecule.

a) How many hydrogen atoms would there be in in alkane?

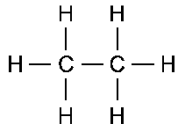
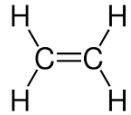
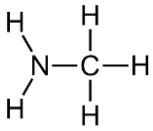
You may wish to use the information in the table in question 2 to help you.

b) Complete the general formula for the alkanes:

General formula for the alkanes = C_nH

c) Use the names, formulae or structures to work out which of the molecules are hydrocarbons and which are alkanes.

Place a tick or cross in the box.

	Hydrocarbon	Alkane
H_2O		
C_5H_{12}		
C_4H_8		
C_2H_5OH		
Pentane		
		
		
		

4. Alkanes are saturated hydrocarbons.

a) What is meant by saturated?

b) Which molecules in the table in question 3 are saturated hydrocarbons?