

Map of the module: Developing Fuels

This shows the relationship between the Chemical Storylines, the Activities and the Chemical Ideas. To aid planning, laboratory-based practical work is indicated by (P), activities involving IT skills are indicated by (IT) and those developing study skills by (S).

ACTIVITIES	CHEMICAL STORYLINE	CHEMICAL IDEAS
DF2.1 Measuring the enthalpy change of combustion of different fuels (P)	DF1 THE VEHICLE OF THE FUTURE?	1.3 Using equations to work out reacting masses
DF2.2 Determining an enthalpy change of reaction (P) (IT)	DF2 GETTING ENERGY FROM FUELS	4.1 Energy out, energy in
DF2.3 Calculating an enthalpy change of reaction using Hess's law		4.2 Where does the energy come from?
DF2.4 Check your knowledge and understanding (Part 1) (S)		
DF3.1 Comparing winter and summer petrol blends (P)	DF3 FOCUS ON PETROL AND DIESEL	12.1 Alkanes
DF3.2 Auto-ignition in a test tube (P)		
DF4.1 Modelling and naming alkanes	DF4 MAKING PETROL – GETTING THE RIGHT OCTANE NUMBER	3.3 Structural isomerism
DF4.2 Drawing and displaying molecular structures using a computer (IT)		13.2 Alcohols and ethers (section on nomenclature)
DF4.3 Planning to crack alkanes		
DF4.4 Cracking alkanes (P)		
DF4.5 A closer look at alcohols (IT)		
DF4.6 Organic dominoes		
DF5.1 Why do hydrocarbons mix?	DF5 MAKING DIESEL FUEL	4.3 Entropy and the direction of change
DF5.2 Check your knowledge and understanding (Part 2) (S)		
DF6.1 Some reactions of nitrogen dioxide and sulfur dioxide (P)	DF6 TROUBLE WITH EMISSIONS	
DF6.2 What are the origins and environmental implications of pollutants in car exhaust gases? (IT)		
DF7 What is the volume of one mole of hydrogen gas? (P)	DF7 TACKLING THE EMISSIONS PROBLEM	1.4 Calculations involving gases
	DF8 USING DIESEL FUEL	10.5 What is a catalyst?
	DF9 OTHER FUELS	
DF10 Which fuel for the future? (IT)	DF10 HYDROGEN – A FUEL FOR THE FUTURE?	
DF11 Check your knowledge and understanding (Part 3) (S)	DF11 SUMMARY	