

Map of the module: What's in a Medicine?

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).

Chemical Ideas references in *italics* are covered in earlier modules and are included in synoptic learning outcomes for this module in the specifications. Emphasis in teaching and learning should be on the **new** (non-italicised) sections of Chemical Ideas. The degree to which revisited Chemical Ideas are studied will depend on the needs of individual students.

ACTIVITIES	CHEMICAL STORYLINE	CHEMICAL IDEAS
	WM1 THE DEVELOPMENT OF MODERN IDEAS ABOUT MEDICINES	
WM2.1 Extraction of an active chemical from willow bark (P) WM2.2 Nucleophilic addition reaction mechanism	WM2 MEDICINES FROM NATURE	13.2 <i>Alcohols and ethers</i> 13.7 Aldehydes and ketones
WM3 Investigating the chemistry of the –OH group in phenols and carboxylic acids (P)	WM3 IDENTIFYING THE ACTIVE CHEMICAL IN WILLOW BARK	13.3 Carboxylic acids and their derivatives 13.4 The –OH group in alcohols, phenols and acids
WM4 Using spectroscopy	WM4 INSTRUMENTAL ANALYSIS	6.4 <i>Infrared spectroscopy</i> 6.5 Mass spectrometry (section on interpreting spectra for compounds and fragmentation)
WM5.1 Preparation of aspirin (P) WM5.2 Combinatorial chemistry WM5.3 Reaction type and atom economy	WM5 THE SYNTHESIS OF SALICYLIC ACID AND ASPIRIN	13.5 Esters 7.3 Chromatography (section on t.l.c.) 15.8 Which reactions have the highest atom economy?
WM6 An aspirin assay (P)	WM6 DELIVERING THE PRODUCT	8.1 Acid–base reactions
	WM7 THE MIRACULOUS MEDICINE	
WM8 How are new medicines developed?	WM8 DEVELOPMENT AND SAFETY TESTING OF MEDICINES	
WM9.1 Organic dominoes II WM9.2 Check your knowledge and understanding (S)	WM9 SUMMARY	

As well as the above, synoptic learning outcomes for **WM** indicate that students should be able to write and recognise formulae for homologous series met in the AS course, including alkenes (**Chemical Ideas 12.2**) and halogenoalkanes (**Chemical Ideas 13.1**).

Synoptic learning outcomes also state that students should be able to predict shapes of molecules (**Chemical Ideas 3.2**) and use dot-cross diagrams appropriately (**Chemical Ideas 3.1**).