

Subject	Year	Term
Chemistry	13	1 and 2
Topic		
6.2.5 Organic synthesis		
Content (Intent)		
<p><b>Prior Learning (Topic)</b> 1. Practical skills, 2.1, Atoms and reactions, 2.2.2 Bonding and structure (hydrogen bonding), 4.1.1 Basic concepts through to 4.2.3 Practical skills and synthesis, 6.1.1- 6.1.3 Carbonyls, 6.2.5 Organic synthesis</p>		
<p><b>Practical skills</b></p> <p>(a) the techniques and procedures used for the preparation and purification of organic solids involving use of a range of techniques (<b>see also 4.2.3 a</b>) including:</p> <ul style="list-style-type: none"> <li>(i) organic preparation           <ul style="list-style-type: none"> <li>• use of Quickfit apparatus</li> <li>• distillation and heating under reflux</li> </ul> </li> <li>(ii) purification of an organic solid           <ul style="list-style-type: none"> <li>• filtration under reduced pressure</li> <li>• recrystallisation</li> <li>• measurement of melting points</li> </ul> </li> </ul> <p><b>Synthetic routes</b></p> <p>(b) for an organic molecule containing several functional groups:</p> <ul style="list-style-type: none"> <li>(i) identification of individual functional groups</li> <li>(ii) prediction of properties and reactions</li> </ul> <p>(c) multi-stage synthetic routes for preparing organic compounds.</p>		
<p><b>Future Learning (Topic)</b> 5.1.2 How far</p>		
How will knowledge and skills be taught? (Implementation)	How will your understanding be assessed & recorded (Impact)	
<p><b>Demos</b></p> <p>How to set up Quickfit apparatus</p> <p>How to carry out filtering under reduced pressure.</p> <p>How to purify an organic solid</p> <p><b>Practical work</b></p> <p>PAG 6 and PAG 7</p> <p><b>Written</b></p> <p>Explanation of the stages for purification of an organic solid</p> <p>Explanation of the purpose of each purification step</p> <p>Drawing Quickfit apparatus for distillation and refluxing</p> <p>Revision of reactions from modules 4 and 6.</p>	<p>- 1 x standard homework (Grade given. Written feedback. Response expected.)</p> <p>-1 x Paper 2 (Grade given. Verbal feedback to class and individuals.)</p> <p>PAG 6 and PAG 7</p>	

Overview of all organic reactions

### How can parents help at home?

Look at the topic specific resources on the VLE

Use appropriate websites: MachemGuy, Allery Chemistry, Chemistry World – by Royal Society of Chemistry, ChemGuide.

Take an interest! Ask your children what they have learnt and be curious about their learning.

### Helpful further reading/discussion

#### Reading

Text book: A level chemistry for OCR by Rob Ritchie and Dave Gent. Chapter 28 p.494-501

The Science of Everyday Life by Marty Jopson  
Why Chemical Reactions Happen by Keeler and Wothers

#### Vocabulary Lists

filtering under reduced pressure  
minimum volume of hot solvent  
wash  
dry  
recrystallisation  
melting point  
reflux  
distillation  
pear shaped flask  
condenser

#### Careers Links

Medicine  
Veterinary science  
Material science  
Biomedical sciences  
Environmental science  
Toxicologist  
Pharmacist  
Dentist  
Patent law  
Forensic science