

Subject	Year	Term
Chemistry	13	4
Topic		
5.3.2 Qualitative analysis & 5.2.3 Redox titrations		
Content (Intent)		
<b>Prior Learning (Topic)</b> 1. Practical skills, 2.1 Atoms and reactions (especially 2.1.5), 3.1.4 Qualitative analysis, 5.2.3 Redox 5.3.1 Transition elements		
<b>Tests for ions</b> <b>(a)</b> qualitative analysis of ions on a test-tube scale: processes and techniques needed to identify the following ions in an unknown compound: (i) anions: $\text{CO}_3^{2-}$ , $\text{Cl}^-$ , $\text{Br}^-$ , $\text{I}^-$ , $\text{SO}_4^{2-}$ ( <b>see 3.1.4 a</b> ) (ii) cations: $\text{NH}_4^+$ ; $\text{Cu}^{2+}$ , $\text{Fe}^{2+}$ , $\text{Fe}^{3+}$ , $\text{Mn}^{2+}$ , $\text{Cr}^{3+}$ ( <b>see 3.1.4 a, 5.3.1 j</b> ).  <b>Redox titrations</b> <b>(d)</b> the techniques and procedures used when carrying out redox titrations including those involving $\text{Fe}^{2+}/\text{MnO}_4^-$ and $\text{I}_2/\text{S}_2\text{O}_3^{2-}$ ( <b>see also 2.1.5 e-f</b> ) <b>(e)</b> structured and non-structured titration calculations, based on experimental results of redox titrations involving: (i) $\text{Fe}^{2+}/\text{MnO}_4^-$ and $\text{I}_2/\text{S}_2\text{O}_3^{2-}$ (ii) non-familiar redox systems		
Future Learning (Topic) Final topic		
How will knowledge and skills be taught? (Implementation)	How will your understanding be assessed & recorded (Impact)	
<b>Practical work</b> Ion tests $\text{Fe}^{2+}/\text{MnO}_4^-$ titration $\text{I}_2/\text{S}_2\text{O}_3^{2-}$ titration PAG 12.1  <b>Written</b> Presentations Worked through examples Past paper question examples and answers Techniques for redox titrations How to determine a reactant ratio for a multi-step titration	- 1 x standard homework (Grade given. Written feedback. Response expected.) -1 x Paper 1 (Grade given. Verbal feedback to class and individuals.) PAG 12.1	
How can parents help at home?		
Look at the topic specific resources on the VLE Use appropriate websites: MachedGuy, 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 23 p.376-385 and chapter 24 p.418-427

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

### Vocabulary Lists

Anion  
Cation  
Redox  
Titration  
Burette  
Pipette  
Indicator  
Ionic equation

### Careers Links

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