

Atoms and Reactions 2



The key areas of study in this topic are:

- Acids, bases and salts
- Redox reactions

By the end of this topic I should be able to:

	Start	End
Recall the formulae of the common acids (HCl, H ₂ SO ₄ , HNO ₃ and CH ₃ COOH) and the common alkalis (NaOH, KOH and NH ₃)		
Explain that acids release H ⁺ ions in aqueous solution and alkalis release OH ⁻ ions in aqueous solution		
Explain strong and weak acids in terms of relative dissociations.		
Explain neutralisation as the reaction of <ul style="list-style-type: none"> • H⁺ and OH⁻ forming H₂O • Acids with bases (including carbonates, metal oxides and alkalis) to form salts, including full equations 		
Understand the techniques and procedures used when preparing a standard solution of required concentration and carrying out acid–base titrations		
Carry out structured and non-structured titration calculations, based on experimental results of familiar and non-familiar acids and bases		
Use the rules for assigning and calculating oxidation number for atoms in elements, compounds and ions (including oxidation numbers of O in peroxides and H in metal hydrides)		
Write formulae using oxidation numbers		
Use Roman numerals to indicate the magnitude of the oxidation number when an element may have compounds/ions with different oxidation numbers e.g. iron (II) and iron (III)		
Explain and identify oxidation and reduction in terms of: <ul style="list-style-type: none"> • electron transfer • changes in oxidation number 		
Describe redox reactions of metals with acids to form salts, including full equations		
Interpret familiar and unfamiliar redox equations to make predictions in terms of oxidation numbers and electron loss/gain.		

In all topic areas you should be able to demonstrate and apply your knowledge and understanding.