Acids

The key areas of study in this topic are:

- Revise your knowledge of acids and acid reactions
- Learn about different types of acid and how they react

By the end of this topic I should be able to:	Start	End
3.1 Recall that acids in solution are sources of hydrogen ions and alkalis in solution are sources of hydroxide ions		
3.2 Recall that a neutral solution has a pH of 7 and that acidic solutions have lower pH values and alkaline solutions higher pH values		
3.3 Recall the effect of acids and alkalis on indicators, including litmus, methyl orange and phenolphthalein		
3.4 Recall that the higher the concentration of hydrogen ions in an acidic solution, the lower the pH; and the higher the concentration of hydroxide ions in an alkaline solution, the higher the pH		
3.5 Recall that as hydrogen ion concentration in a solution increases by a factor of 10, the pH of the solution decreases by 1		
3.6 Core Practical: Investigate the change in pH on adding powdered calcium hydroxide or calcium oxide to a fixed volume of dilute hydrochloric acid		
3.7 Explain the terms dilute and concentrated, with respect to amount of substances in solution		
3.8 Explain the terms weak and strong acids, with respect to the degree of dissociation into ions		
3.9 Recall that a base is any substance that reacts with an acid to form a salt and water only		
3.10 Recall that alkalis are soluble bases		
3.11 Explain the general reactions of aqueous solutions of acids with: • metals • metal oxides • metal hydroxides • metal carbonates		
3.13 Describe a neutralisation reaction as a reaction between an acid and a base		
3.14 Explain an acid-alkali neutralisation as a reaction in which hydrogen ions (H^+) from the acid react with hydroxide ions (OH^-) from the alkali to form water		
3.15 Explain why, if soluble salts are prepared from an acid and an insoluble reactant: • excess of the reactant is added • the excess reactant is removed • the solution remaining is only salt and water		
3.16 Explain why, if soluble salts are prepared from an acid and a soluble reactant: • a titration must be used • the acid and the soluble reactant are then mixed in the correct proportions • the solution remaining, after reaction, is only salt and water [Also in titrations topic]		
3.17 Core Practical: Investigate the preparation of pure, dry hydrated copper sulfate crystals starting from copper oxide and using a water bath (Year 9)		