KS3 Chemistry – Acids – Learning Objectives

	Beginning	Developing	Secure	Embedding	Extending	Excelling
Indicators	Name some acidic, alkaline and neutral substances.	Recall the acid, alkali and neutral colours for simple indicators, such as litmus, methyl orange and phenolphthalein.	Use universal indicator to identify acidic, alkaline and neutral solutions and describe its strength. Use the pH scale to describe the strength of an acid or alkali. Describe how natural substances (such as red cabbage) can be used to make an indicator, and demonstrate how to identify the colour changes.		Explain how to use a pH meter, including the use of a buffer solution.	-
Neutralisation	-	Describe what happens when an acid and an alkali react together, in terms of changing the pH of the mixture. Describe a real-world example of a neutralisation reaction.		Discuss (qualitatively) how the relative quantities of acid and alkali may vary in a neutralisation reaction, where the solutions have different strengths and concentrations. Give a detailed description of several real-world examples of neutralisation reactions, including any safety precautions that need to be taken (where appropriate).		-
Experiments With Acids	Explain how to handle acids and alkalis safely.	Plan and perform an experiment to compare the strengths / concentrations of various acidic or alkaline solutions by neutralising the mixture. *This should include a method outlining apparatus, chemical names, risk assessment, and appropriate presentation of data.*		Complete a simple titration to compare the strengths / concentrations of various acidic or alkaline solutions.		-
Making Salts	-	Recall that evaporation may be used to separate a salt from the water it is dissolved in, and explain how this may be done.	Name the salt formed when an acid reacts with a metal, base (metal oxide or metal hydroxide) and a metal carbonate; name the reactants that could be used to make a specific salt. Name the additional products formed when acids react to make salts; describe the tests used to identify any gases produce, and apply the conservation of mass to the reactions. Form word equations (and simple symbol equations) for the reactions of acids to make salts.		Describe what happens in an acid-base reaction, in terms of hydrogen and hydroxide ions. Construct balanced symbol equations for reactions of acids to make salts.	

** Objectives covering more than one grade are assessed based on the level of scientific detail and language used by the learner.*