Stewards Academy

Science Department **ASSESSMENT FEEDBACK** Year 8 – Unit 2

| Attainment Band | Types of Reaction & Chemical Energy<br>Knowledge and Understanding |
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| Yellow/Yellow + | • Evaluate the hazards posed by a number of acids and how they may be reduced<br>• Evaluate the hazards posed by a number of alkalis and how they may be reduced<br>• Compare the effectiveness of different indicators<br>• Explain clearly and fluently the advantages of universal indicator over other indicators<br>• Explain the changes to an indicator when acids and alkalis are mixed<br>• Explain and evaluate a model of neutralisation<br>• Predict the reactants and salts made in different neutralisation reactions<br>• Explain and exemplify trends and patterns in the Periodic Table<br>• Select metals most appropriate for a particular use and justify the selection<br>• Compare and constrast the properties of metals and non-metals<br>• Explain observations using word equations and relate chemical symbols to a simple particle model using circle diagrams<br>• Use simple models and equations to explain the mass changes during oxidation reactions<br>• Compare the reactivities of different metals<br>• Write balanced symbol equations for the decomposition of metal carbonates; explain how decomposition of metal carbonates relates to metal reactivity<br>• Write balanced symbol equations for displacement reactions<br>• Use the particle model to explain physical changes and chemical changes<br>• Use energy-level diagrams to compare the energy in the reactants and products of an exothermic reaction and explain the energy changes in the particles<br>• Apply the fire triangle to putting out fires<br>• Explain the Law of Conservation of Mass and how it can be proved<br>• Use a word equation to explain what happens during the thermal decomposition of carbonates<br>• Use simple models and equations to explain the mass changes during thermal decomposition reactions |
| Blue | • Explain the similarities between all acids, recognise what alkalis have in common and the hazards associated with some<br>• Explain how an indicator may be produced and analyse the data generated<br>• Interpret measurements of pH made using universal indicator, describe the changes to indicators when acids and alkalis are mixed<br>• Explain the formation of a salt and water during neutralisation<br>• Describe the uses of some common salts<br>• Explain how the Periodic Table is organised using the correct terms<br>• Identify similarities and differences between metals and how these relate to their uses<br>• Explain why substances are classified as non-metals<br>• Make accurate observations and explain them using simple models and word equations<br>• Write balanced symbol equations to illustrate oxidation reactions<br>• Explain the reaction between acids and metals<br>• Use data to make inferences about metal reactivity<br>• Use models to explain displacement and relate it to the reactivity series<br>• Explain how mass is conserved in all changes<br>• Explain the energy changes taking place during an exothermic reaction<br>• Describe what is needed for combustion using the fire triangle<br>• Compare the reactants and products of complete and incomplete combustion<br>• Describe what is meant by a thermal decomposition reaction<br>• Explain the differences between oxidation and thermal decomposition reactions |

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| **Green** | • Identify everyday substances that contain acids and everyday substances that contain alkalis<br>• Exemplify an indicator and describe why indicators are useful<br>• Describe pH as a measure of strength of acid or alkali<br>• Describe some examples of neutralisation<br>• Recognise water as a product of neutralisation<br>• Identify some common salts<br>• Identify an element from its symbol and atomic number<br>• Identify some common properties of metals and their uses<br>• Identify elements as non-metals using their properties<br>• Identify risks and changes during a reaction and relate these to reactants and products<br>• Identify oxidation reactions<br>• Describe the observations made when acids react with metals<br>• Write word equations to represent the decomposition of metal carbonates; use observation to make inferences about the reactivity of different metals<br>• Write word equations to represent displacement reactions; give some uses for displacement reactions<br>• Describe the features of physical changes and chemical changes<br>• Describe exothermic reactions, with examples from metal extraction including the thermit reaction<br>• Describe the terms fuel and combustion<br>• Summarise and explain the complete combustion equation<br>• Identify sources of calcium carbonate<br>• Identify decomposition reactions |
| **White** | • Some of the above elements have been achieved |