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|  | **Science – Chemistry** **KEY STAGE THREE ASSESSMENT FRAMEWORK, YEAR 7** |
| **Learning Focus**  | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5**  |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Acids** | I can state that different acids and alkalis may have different strengths (2)I can state colours on the pH scale (4) | I can state the purpose of an indicator and describe how Universal indicator is used to find the strength of an acid or alkali using the pH scale (3) | I can describe neutralisation and the reaction of metals and acids, as examples of chemical reactions (6)I can identify the ions responsible for acidity and alkalinity (10)I can identify strengths and weaknesses of different substances on the pH scale using different indicators (4) | I can identify a salt from a word equation (11) I can select the appropriate indicator to use when testing particular strength Acids and Alkalis (5) | I can write word equations for the reactions of acids with bases, alkalis, metals and carbonates (11) |

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| **Learning Focus**  | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5**  |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Particles and Matter**  | I can list some mixtures. I can use simple techniques to separate mixtures (13,14)I can draw particle diagrams to represent a solid, liquid and gas. I can classify materials as solid, liquid or gases (1)I can list the changes of states (2)I can identify simple diagrams of elements, compounds and mixtures (13) | I can identify simple techniques for separating mixtures and select appropriate techniques for separating given mixtures (14,15) I can describe how temperature can affect solubility. I can describe how pressure occurs in gases (5,11,12)I can name and describe the properties of the three states of matter (1,2,3)I can describe how changes of state can occur (2)I can list examples of atoms, elements and compounds (13)I can draw simple diagrams to represent an element, compound and mixture (13)I can state that particles may move through a fluid by diffusion (4)  | I can describe what happens at different stages of distillation. (16)I can explain how temperature can affect solubility (12)I can describe how to carry out simple techniques for separating mixtures (14)I can explain changes of states of matter with reference to energy levels of particles (2)I can describe, in detail, the differences in arrangements, in motion and in closeness of particles explaining changes of state, shape and density.I can explain the properties of the three states of matter with reference to the particle model (2,3 I can compare and contrast the similarities and differences between solids, liquids and gases with particular reference to density differences (2,3)I can explain how changes in temperature can affect the motion and spacing of particles. I can explain how pressure in gases may change (2,5,6)I can describe what diffusion is and explain how diffusion happens in terms of the particle model (4) | I can explain how simple techniques for separating mixtures work (14,15,16,17) I can analyse a chromatograph (17,18) I can explain the process of distillation (16)I can explain what causes pressure (5) I can explain the differences between atoms, elements and compounds (13)I can suggest how the rate of diffusion may be affected (4) | I can explain how chromatography can be used in the wider world (17)I can apply my knowledge of physical changes and particles in explaining, with diagrams, what is meant by Brownian motion in gases (1,6)I can use the particle theory to explain the properties of volume and compressibility of gases (1,3) |

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| **Geology** | I can name the three types of rock (1)I can describe the general structure of the Earth (1,2) | I can describe how the three types of rock are formed (2)I can describe how crystal size is dependent on cooling time (3)I can describe the processes of Weathering, Erosion, Transportation and Deposition (4) | I can link crystal size to Intrusive and Extrusive rocks (3)I can explain fossil formation linking ideas of the Rock Processes (5,6) | I can explain in detail how the three different types of rocks are formed, with reference to factors that may alter the appearance and properties of these rocks (2,5)I can explain why some rocks will not contain fossils (6) | I can link the formation of rocks together to describe and explain the rock cycle in detail (2,5)I can identify unfamiliar rocks from data provided for me (1) |

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|  | **Science – Chemistry** **KEY STAGE THREE ASSESSMENT FRAMEWORK, YEAR 8** |
| **Learning Focus**  | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5**  |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Materials and Substances** | I can state that all elements currently known may be found listed in the periodic table. I can name common elements and use chemical symbols. I can recognise a simple atomic model (1,2)I can identify pure and impure substances from diagrams (2,3)I can state that during chemical reactions reactants become products (8,6) I can list examples of atoms, elements and compounds (2) | I can explain the following physical changes in terms of conservation of material, mass and reversibility: melting, freezing, evaporation, sublimation, condensation and dissolving (5)I can name some elements in the periodic table when given their symbol (2) I can describe pure substances and mixtures, including dissolved substances (2,3) I can describe dissolving, with reference to particles (4) | I can state that mass is conserved during changes of state and chemical reactions (6,7) I can state that during chemical reactions atoms are rearranged in order for reactants to become products (6,7,9)I can name the products of combustion (9)I can describe the difference between complete and incomplete combustion (9)I can explain why mass is conserved during changes of state and chemical reactions (6,7)I can represent chemical reactions using word equations (6)I can represent elements using chemical symbols (1) | I can write word equations for the thermal decomposition on metal carbonates (7)I can explain why there is a period of constant temperature during melting and freezing (5) | I can write a balanced symbol equation for incomplete combustion (9)I can represent compounds using chemical formulae (1) |

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| **Chemistry** **KEY STAGE THREE ASSESSMENT FRAMEWORK, YEAR 9** |
| **Learning Focus** | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5**  |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Metals and Acids** | I can separate a mixture using filtration, evaporation, crystallisation, distillation and chromatography (1)I can give examples of metals and non-metals (2)I can define the terms atom, element, compound and mixture (4)I can explain what we use the Periodic Table for (5,6)I can state the pH range of acids, alkalis and neutral substances (9)I can observe how acids and metals react (10)I can observe how acids and carbonates react (11)I can use universal indicator to investigate neutralisation reactions (13)I know that combustion is burning (14) | I can use physical properties to explain the best method for separating a mixture (1)I can describe the properties of metals and non-metals (2)I can describe an alloy as a mixture of metals or a metal and a non-metal (3)I can compare elements, compounds and mixtures (4)I can use the Periodic Table to find metals and non-metals (6)I know that most metals found in the earth are in compounds (8)I can state the colour universal indicator turns in an acid, alkali and a neutral solution (9)I can state that acid + metal makes salt + hydrogen (9)I can state that acid + carbonate makes salt + water + carbon dioxide (11)I can state that an acid + base makes salt + water (12)I can state the products of combustion as carbon dioxide + water (14) | I can compare the properties of metals and non-metals (3)I can describe how alloying can change the properties of a metal (3)I can explain why mixtures can be separated by physical methods but compounds cannot (1)I can name Group 1 of the Periodic Table the Alkali metals and describe the reactivity of the Alkali metals (6)I know that the reactivity series is a list of metals in order of their relative reactivity (7)I can write word equations for reactions (8-14)I can describe rusting and oxidation as reactions between metal and oxygen (8)I can use universal indicator and the pH scale to determine whether a substance is acidic, alkaline or neutral (12)I can predict salt formed from acid + metal reactions, acid + carbonate reactions and acid + base reactions (13)I can describe neutralisation as the reaction between acid and base (12)I know that incomplete combustion happens in a lack of oxygen and forms carbon monoxide + carbon + water (14) | I can explain how Mendeleev created the Periodic Table (6)I can name Group 7 of the Periodic Table as the Halogens (7)I can use the Reactivity series to make predictions (7)I can write chemical equations for reactions (13)I can explain why mass of a metal increases when it is burned in air (14)I can explain the methods of electrolysis and reduction with carbon to extract metals (7)I can explain the difference between complete and incomplete combustion (14)I can test for chlorine, hydrogen, oxygen and carbon dioxide gas (15) | I can describe displacement reactions in terms of reactivity (7)I can write balanced symbol equations for reactions (8 on)I can use the reactivity series to predict how a metal is extracted (7) |