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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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|  | **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** |
| **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) |