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| ***Topic Name*** | Term | Skills Developed | Link to NC Subject Content and beyond | Next link in curriculum | Other Notes |
| **Elements, Mixtures & Compounds** | *Autumn* | * Collecting data * Analyse patterns * Justify opinions * Review theories * Draw conclusions * Make observations * Estimate risks * Plan variables * Test hypotheses * Construct explanations * Discuss limitations | * A simple (Dalton) atomic model * Differences between atoms, elements and compounds * Chemical symbols and formulae for elements and introduced to the formula for compounds * The structure of the atom including the subatomic particles * The properties of subatomic particles * Electron configuration * Using the periodic table to determine atomic structure * The varying physical and chemical properties of different elements * The properties of metals and non-metals * Elements can combine in a Chemical reaction to make compounds * How do we name compounds? * Representing reactions with simple word equations | * Y8 Spring:   Links to GCSE Topic 1 – **Atomic structure & the Periodic Table**  **Year 9:**   * Atomic structure * Atoms, Elements, Mixtures & Compounds * Development of the periodic table * Trends in group 1, 7, & 0 * Properties of alkali vs transition metals * Separating mixtures   Links to GCSE Topic 8 –  **Chemical Analysis**  **Year 10:**   * Pure and impure substances | **Prior Knowledge from KS2**  Students should be able to:  Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets  Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic  compare and group materials together, according to whether they are solids, liquids or gases  identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature |
| **Separating Mixtures** | *Spring* | * Collecting data * Analyse patterns * Review theories * Draw conclusions * Make observations * Estimate risks * Plan variables * Test hypotheses * Construct explanations * Discuss limitations | * Mixtures, including dissolving and solubility * Using techniques for separating mixtures: filtration, evaporation, distillation and chromatography * Evaluating techniques for separating mixtures: filtration, evaporation, distillation and chromatography * The identification of pure substances | * Y8 Spring: Introduction to bonding   Links to GCSE Topic 1 – **Atomic structure & the Periodic Table**  **Year 10:**   * Separating mixtures   Links to GCSE Topic 8 –  **Chemical Analysis**  **Year 10:**   * Pure and impure substances | **Prior Knowledge from KS2**  Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution  Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating |
| **Introduction to Bonding** | *Spring* | * Justify opinions * Review theories * Draw conclusions * Make observations * Construct explanations * Discuss limitations | * Why do elements react? * How can we identify a chemical reaction? * Types of Chemical bond * Representing Ionic bonds * Representing Covalent bonds * Representation of compounds using Chemical and Ionic formulae | * Y8 Spring: The Periodic Table   Links to GCSE Topic 1 – **Atomic structure & the Periodic Table**  **Year 10:**   * Atomic structure * Atoms, Elements, Mixtures & Compounds   Links to GCSE topic 2 – **Structure & Bonding**  **Year 10:**   * Why do elements react? * Ionic Bonding * Covalent bonding | **Prior Knowledge from KS3**  Y8 Atoms, Elements & Compounds topic:   * Structure of the atom and the properties of the subatomic particles * Electron Configuration |
| **The Periodic Table** | *Summer* | * Collecting data * Analyse patterns * Justify opinions * Review theories * Draw conclusions * Make observations * Estimate risks * Plan variables * Test hypotheses * Construct explanations * Discuss limitations | * The principles underpinning the Mendeleev periodic table * The periodic table: periods and groups; metals and non-metals * How patterns in reactions can be predicted with reference to the periodic table * Trends in physical properties * Explaining trends in reactivity in group 1, 7, and 0 | * Y8 Spring: The Periodic Table   Links to GCSE Topic 1 – **Atomic structure & the Periodic Table**  **Year 10:**   * Atomic structure * Group 1, 7 & 0#   Links to GCSE topic 2 – **Structure & Bonding**  **Year 10:**   * Why do elements react? * Ionic Bonding * Covalent bonding | **Prior Knowledge from KS3**  Y8 Atoms, Elements & Compounds topic:   * Structure of the atom and the properties of the subatomic particles * Electron Configuration   Y8 Introduction to Bonding:   * Why do elements react? * Ionic bonding * Covalent bonding |