



Topic name	Term	Skills developed	Link to NC subject content and beyond	Prior learning	Next link in curriculum
Atoms, Elements & Compounds	Autumn	<ul style="list-style-type: none">Collecting dataAnalyse patternsJustify opinionsReview theoriesDraw conclusionsMake observationsEstimate risksPlan variablesTest hypothesesConstruct explanationsDiscuss limitations	<ul style="list-style-type: none">Differences between atoms, elements and compoundsChemical symbols and formulae for elements and introduced to the formula for compoundsThe structure of the atom including the subatomic particlesThe properties of subatomic particlesElectron configurationUsing the periodic table to determine atomic structureThe varying physical and chemical properties of different elementsThe properties of metals and non-metalsElements can combine in a Chemical reaction to make compoundsHow do we name compounds?Representing reactions with simple word equations	<p>Prior Knowledge from KS2</p> <p>Students should be able to:</p> <p>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.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<ul style="list-style-type: none">Y8 Spring: <p>Links to GCSE Topic 1 – Atomic structure & the Periodic Table</p> <p>Year 9:</p> <ul style="list-style-type: none">Atomic structureAtoms, Elements, Mixtures & CompoundsDevelopment of the periodic tableTrends in group 1, 7, & 0Properties of alkali vs transition metalsSeparating mixtures <p>Links to GCSE Topic 8 – Chemical Analysis</p> <p>Year 10:</p> <ul style="list-style-type: none">Pure and impure substances



Separating Mixtures	<i>Spring</i>	<ul style="list-style-type: none">Collecting dataAnalyse patternsReview theoriesDraw conclusionsMake observationsEstimate risksPlan variablesTest hypothesesConstruct explanationsDiscuss limitations	<ul style="list-style-type: none">Mixtures, including dissolving and solubilityUsing techniques for separating mixtures: filtration, evaporation, distillation and chromatographyEvaluating techniques for separating mixtures: filtration, evaporation, distillation and chromatographyThe identification of pure substances	<p>Prior Knowledge from KS2</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p>	<ul style="list-style-type: none">Y8 Spring: Introduction to bonding <p>Links to GCSE Topic 1 – Atomic structure & the Periodic Table</p> <p>Year 10:</p> <ul style="list-style-type: none">Separating mixtures <p>Links to GCSE Topic 8 – Chemical Analysis</p> <p>Year 10:</p> <ul style="list-style-type: none">Pure and impure substances
The Periodic Table	<i>Summer</i>	<ul style="list-style-type: none">Collecting dataAnalyse patternsJustify opinionsReview theoriesDraw conclusionsMake observationsEstimate risksPlan variablesTest hypothesesConstruct explanationsDiscuss limitations	<ul style="list-style-type: none">The principles underpinning the Mendeleev periodic tableThe periodic table: periods and groups; metals and non-metalsHow patterns in reactions can be predicted with reference to the periodic tableTrends in physical propertiesExplaining trends in reactivity in group 1, 7, and 0	<p>Prior Knowledge from KS3</p> <p>Y8 Atoms, Elements & Compounds topic:</p> <ul style="list-style-type: none">Structure of the atom and the properties of the subatomic particlesElectron Configuration <p>Y8 Introduction to Bonding:</p> <ul style="list-style-type: none">Why do elements react?Ionic bonding <p>Covalent bonding</p>	<ul style="list-style-type: none">Y8 Spring: The Periodic Table <p>Links to GCSE Topic 1 – Atomic structure & the Periodic Table</p> <p>Year 10:</p> <ul style="list-style-type: none">Atomic structureGroup 1, 7 & 0# <p>Links to GCSE topic 2 – Structure & Bonding</p> <p>Year 10:</p> <ul style="list-style-type: none">Why do elements react?Ionic BondingCovalent bonding