



## Chemistry KS3 Curriculum

Year 7: Chemistry				
	Introduction	Acids and Bases	Physical Changes	Mixtures and Separation
<b>Content:</b> What will students know	Working safely in the laboratory, using a Bunsen burner and measuring accurately.	Recognising acids and alkalis in everyday life, using indicators, the pH scale and neutralisation and bases.	Solids, liquids and gases and the particle model. Diffusion, pressure and concentration. Differences between chemical and physical changes.	Defining what makes a pure substances, mixtures, dissolving, conservation of mass. Separation techniques to include filtration, evaporation, chromatography and distillation.
<b>Skills:</b> What will students be able to do	Use a Bunsen burner safely. Use laboratory equipment correctly in measuring volume, temperature and mass.	Working scientifically (Independent and dependent variables). Using scientific equipment safely and correctly.	Using conceptual models to apply to real world phenomena and be able to evaluate these models.	Be able to describe how different mixtures can be separated. Use equipment correctly and safely to separate mixtures.
<b>Other:</b> Literacy/Numeracy/ Ethos	Keywords, using scales.	Keywords, plotting graphs.	Keywords, using scientific models.	Keywords.
<b>Assessment:</b>		Plan, implement and evaluate an investigation on antacids test on Acids and Bases. End of topic test, AFL in lessons.	End of topic test, AFL in lessons.	End of topic test, AFL in lessons.



## Chemistry KS3 Curriculum

Year 8: Chemistry			
	Chemical Reactions	Types of Chemical Reaction	Rocks and the Earth
<b>Content:</b> What will students know	The varying physical and chemical properties of different elements Representing chemical reactions using symbols and formulae and using equations Conservation of mass in changes of state. Chemical symbols and formulas for elements and compounds and the Periodic Table. Differences between elements and compounds	Conservation of mass in chemical reactions. Different types of reactions will be investigated including: Combustion, thermal decomposition, oxidation, precipitation and exothermic and endothermic reactions. Chemical symbols and formulae for elements and compounds. Chemical reactions as the rearrangement of atoms. Extraction of metals from metal oxides using carbon.	The structure and composition of the atmosphere and Earth. The rock cycle and formation of igneous, sedimentary and metamorphic rock formation and the rock cycle. Earth as a source of limited resources and the efficacy of recycling. Global warming and air pollution.
<b>Skills:</b> What will students be able to do	Create word and very simple symbol equations. Use models to understand key differences between atoms, elements, compounds and mixtures. Balance simple equations.	Appreciate there are different types of reaction and explain these in terms of atom rearrangement, mass changes and corresponding energy transfers. Use practical skills to safely and accurately manipulate scientific equipment. Apply ideas about the reactivity series, writing word equations for displacement reactions Use ideas and information about particles to write balanced symbol equations and write detailed explanations of metal extraction processes.	Explain differences in the structure of different rocks. Evaluate different methods of recycling.
<b>Other:</b> Literacy/Numeracy/ Ethos	Keywords, balancing equations.	Keywords	Keywords. Evaluating different processes.
<b>Assessment:</b>	End of topic test, AFL in lessons.	End of topic test, AFL in lessons.	End of topic test, AFL in lessons.



## Chemistry KS3 Curriculum

Year 9: Chemistry				
	C1	C2 Bonding and Structure	C2 Nanoparticles	C2 Separation Techniques
<b>Content:</b> What will students know	Recap on particle model, atomic structure (to include electronic configuration, ions and isotopes). History of the atomic model	Metals and non-metals, ionic, covalent and metallic bonding (to include dot/cross diagrams for ionic and covalent structures). Structure and bonding of carbon allotropes (Diamond, Graphite and Graphene).	Properties of nanoparticles and their uses, surface area to volume ratio, risks.	Empirical and RFM. Purity of substances (and melting points), filtration and evaporation, distillation (simple and fractional), chromatography (Paper and Thin Layer).
<b>Skills:</b> What will students be able to do	Identify the number of protons, neutrons and electrons in the first twenty elements, ions and isotopes.	Draw dot/cross diagrams for ionic and covalent substances (binary compounds only). Draw models of structures and relate their structures to their uses.	Explain what a nanoparticle is and why their uses are different from the bulk properties of the same material.	Correctly identify and justify the method for separating different mixtures. There are two PAGS (distillation and chromatography)
<b>Other:</b> Literacy/Numeracy/ Ethos	Mathematical skills: Standard form, powers of ten and calculating relative atomic mass from isotopic abundances. Research skills. Lots of keywords.	Lots of keywords in this topic.	Calculate volume and surface area of cubes and ratios	Calculating R <sub>f</sub> values, calculating RFM for different elements and compounds
<b>Assessment:</b>	Formative assessment throughout module (commonly using mini-whiteboards/EDUCAKE). Summative assessment is C1 end of unit test.	Ionic Test	Covalent Test	End of Year test