

KS3 Chemistry Curriculum Map



| Year 7 | Introduction | Acids and Bases | Particle Model | Mixtures and Separation |
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| Content: 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 substance, mixtures, dissolving, conservation of mass. Separation techniques to include filtration, evaporation, chromatography and distillation. |
| Skills: 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. |
| Other: Literacy/ Numeracy/ Ethos | Keywords, using scales. | Keywords, plotting graphs. | Keywords, using scientific models. | Keywords. |
| Assessment: | | Plan, implement and evaluate an investigation on antacids test on Acids and Bases. End of topic test, AFL in lessons. Assessment Task | End of topic test, AFL in lessons. Assessment Task | End of topic test, AFL in lessons. Assessment Task |

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| Year 8 | Chemical Reactions | Types of Reactions | Rocks |
|---|---|--|---|
| <p>Content: What will students know</p> | <ul style="list-style-type: none"> •Explain the difference between atoms and molecules •Recognise examples of elements and compounds •Explain what a chemical formula tells you about a substance •Use evidence to describe how compounds are different from their elements •Explain the difference between atoms and molecules •Recognise examples of elements and compounds •Explain what a chemical formula tells you about a substance | <ul style="list-style-type: none"> •Make observations during chemical reactions; write word equations to demonstrate chemical changes; explain chemical changes using a model. •Draw conclusions to explain observations; use symbols and models to describe a chemical reaction. •Describe oxidation; recognise the effects of oxidation; use data to support conclusions. •Describe the composition and uses of carbonate compounds; recognise and explain thermal decomposition reactions; identify carbon dioxide. •Describe the reaction of a metal and an acid to form a salt and hydrogen. | <ul style="list-style-type: none"> •Describe the composition of our atmosphere and how it has changed over time and why. •Describe the layers of the Earth •Describe how sedimentary rocks are formed •Explain how fossils give clues about the past •Explain the properties of sedimentary rocks •Describe how igneous rocks are formed •Explain how the pH of the magma affects the formation of rocks •Investigate the effect of cooling rate on the formation of crystals •Name some examples of metamorphic rocks •Describe how metamorphic rocks are formed. •Describe the rock cycle and explain how rocks can change from one type to another. |
| <p>Skills: What will students be able to do</p> | <p>Use scientific models to explain the differences between elements and compounds</p> | <p>Identify different chemical reactions</p> | <p>Explain how sedimentary, igneous and metamorphic rocks are formed and identify samples of rock.</p> |
| <p>Other: Literacy/ Numeracy/ Ethos</p> | <p>Keywords</p> | <p>Keywords, balancing simple equations</p> | <p>Keywords, using scientific models.</p> |
| <p>Assessment</p> | <p>End of topic test, AFL in lessons. Assessment Task</p> | <p>End of topic test, AFL in lessons. Assessment Task</p> | <p>End of topic test, AFL in lessons. Assessment Task</p> |

KS3 Chemistry Curriculum Map



| Year 9 | C1 Atomic Structure | C2.1 Separation Techniques | C2.2 Bonding and Structure |
|---|--|---|--|
| Content: What will students know | Recap on particle model, atomic structure (to include electronic configuration, ions and isotopes). History of the atomic model . Empirical formula and RFM. | Purity of substances (and melting points), filtration and evaporation, distillation (simple and fractional), chromatography (Paper and Thin Layer). | 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. |
| Skills: What will students be able to do | Identify the number of protons, neutrons and electrons in the first twenty elements, ions and isotopes. | Correctly identify and justify the method for separating different mixtures. There are two PAGES (distillation and chromatography) | 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. |
| Other: Literacy/ Numeracy/ Ethos | Mathematical skills: Standard form, powers of ten and calculating relative atomic mass from isotopic abundances. Research skills. Lots of keywords. | Calculating Rf values, calculating RFM for different elements and compounds | Keywords, using scientific models. Calculate volume and surface area of cubes and ratios |
| Assessment: | End of topic test, AFL in lessons. Assessment Task | End of topic test, AFL in lessons. Assessment Task | End of topic test, AFL in lessons. Assessment Task |