

Year 9 CHEMISTRY

Curriculum Content

Five topics are taught during this year. The topics are:

- Reactivity series of metals - reactions of metals with acids, water and air, displacement reactions of metal oxides and metal salt solutions, properties and uses of metals related to their reactivity, symbol equations for the reactions of metals, balancing equations and state symbols.
- Metal Extraction – extracting iron using carbon, copper extraction, metal recycling and rusting - conditions needed for rusting, prevention of rusting.
- Metal Carbonates and the Earth – the action of heat and acids on metal carbonates, heating limestone, uses of limestone, making glass and effects of quarrying. The Earth's structure, types of rock, weathering and the rock cycle.
- Air and oxygen – the preparation and classification of oxides, redox reactions, the composition of air, climate – the atmosphere, ozone layer and Global Warming, the carbon cycle and carbon foot print.
- Water – separation of mixtures (chromatography, distillation, evaporation, filtration). Required Practical; analysing and purifying water samples, clean water and sanitation in the developing world.

Knowledge, skills and understanding

Experimental skills

Individual practical work and work in pairs is designed to develop these practical skills:

- **Planning** - ability to plan a method, identify control variables, control the variables, think up a hypothesis, make an experimental prediction, identify risks and hazards and identify control measures
- **Obtaining and presenting evidence** - ability to follow written instructions, work safely and use apparatus carefully to obtain accurate results. The results obtained are recorded in labelled tables and then used to draw graphs with lines of best fit. Anomalous results are identified and repeated when necessary.
- **Analysing results** - ability to use tables and graphs to find patterns in results and draw conclusions. Explain the conclusion using scientific knowledge and understanding. Use correct scientific language, symbols and flow diagrams to explain the investigation.
- **Evaluation of the investigation** - ability to suggest whether or not the method gave accurate enough results and suggest ways of improving the method. Decide whether enough information has been collected to be sure that the conclusion is correct. Conclude if the hypothesis is correct.

Assessment opportunities

Experimental skills are developed and assessed by practical work including individual practical investigations

Knowledge and recall are assessed by tests at the end of each topic and by the examination at the end of the year.