



Year 9 Chemistry
Curriculum



Year 9 Chemistry

Introduction

This document outlines what students will learn in Chemistry in Year 9.

1. The Periodic Table

Trends in the Periodic Table

- Atomic radius, ionization energy, electronegativity
- Group trends and period trends

Group 1 (Alkali Metals)

- Properties and reactions

Group 7 (Halogens)

- Properties and reactions

Transition Metals

- Properties and uses

2. Chemical Calculations

Relative Atomic Mass (RAM) and Relative Molecular Mass (RMM)

- Calculations involving masses and moles

Balanced Chemical Equations

- Mole ratios
- Calculations involving masses and volumes of gases

Concentration of Solutions

- Units of concentration (mol/dm^3)
- Calculations involving concentration, volume, and moles



3. Rates of Reaction

Factors Affecting Reaction Rates

- Temperature, concentration, surface area, catalysts
- Collision theory

Measuring Reaction Rates

- Initial rate method
- Half-life

Catalysts

- Types of catalysts
- Applications of catalysts

4. Organic Chemistry

Homologous Series

- Alkanes, alkenes, alcohols, carboxylic acids

Isomerism

- Structural and geometric isomerism

Reactions of Organic Compounds

- Combustion, substitution, addition, elimination

Polymers

- Addition and condensation polymerisation

5. The Atmosphere

Composition of the Atmosphere

- Major gases and their roles

Air Pollution

- Sources and effects of pollutants
- Acid rain

Climate Change

- Greenhouse effect
- Global warming



Practical Activities and Investigations:

- Conduct experiments to investigate the properties of elements in different groups and periods.
- Carry out calculations involving masses, moles, and concentrations.
- Measure reaction rates under different conditions.
- Explore the properties and reactions of organic compounds.
- Investigate the effects of air pollution and climate change.

Assessment

- Regular quizzes and tests
- Practical assessments
- Project work (e.g., researching a specific chemical reaction or element)

Evaluation and Review

The curriculum will be reviewed annually to ensure its effectiveness. Feedback from students, teachers, and parents will be considered in the review process.

Updated August 2024

Next review: August 2025