

1. Scientific Practices in Chemistry

- Investigable chemistry questions
- Variables and fair testing
- Measurement and precision
- Data tables and graphing
- Patterns, trends, and anomalies
- Models in chemistry
- Claim-evidence-reasoning
- Method evaluation, safety, uncertainty, and limitations
- Safe handling of substances and laboratory materials

2. Matter, Particles, and Atomic Structure

- States of matter
- Particle model
- Changes of state
- Elements, compounds, and mixtures
- Atoms and subatomic structure
- Chemical symbols and formulae
- Introductory ions
- Structure of matter in simple models
- Pure substances and mixtures

3. Periodic Table, Bonding, and Properties

- Periodic table structure
- Metals and non-metals
- Periodic patterns
- Introductory bonding
- Physical and chemical properties
- Material classification
- Reactivity patterns
- Choosing materials for purpose
- Structure-property relationships at an introductory level

4. Chemical Reactions and Quantitative Ideas

- Physical vs chemical change
- Evidence of reaction
- Word and symbol equations
- Formula interpretation
- Balancing equations
- Conservation of mass
- Introductory quantitative chemistry, including conservation of mass, formula interpretation, and simple reaction quantities
- Common reaction types
- Reaction contexts in everyday life
- Interpreting reaction data and observations

5. Solutions, Acids, Bases, and Separation

- Solutions and concentration
- Solubility
- Separation techniques
- Acids and bases

- Indicators and pH
- Neutralisation
- Everyday chemical solutions
- Safe handling of substances
- Dilution and solution changes at an introductory level where appropriate

6. Environmental and Applied Chemistry

- Air and water chemistry
- Pollution and contamination
- Materials and corrosion
- Energy-related chemistry at an introductory level
- Chemistry in industry and daily life
- Sustainability and responsible resource use
- Chemical safety and environmental responsibility