



INTERNATIONAL SCHOOL OF SOUTH AFRICA

FORM 3, 4 & 5 IGCSE CHEMISTRY– YEARLY OVERVIEWS

Rationale

- The aim of this overview is to outline progression for the academic year.
- The scheme of work generally follows the 2016 syllabus, but the order in which topics are covered has been adjusted to give a coherent flow to the course.

- The progression through these topics has been designed to build on students' own experiences, and to ensure that students have sufficient basic knowledge and understanding to tackle the more challenging issues.

- New students joining the school in Form 4 have to undergo a diagnostic test based on Form 3 work so that teachers can prepare intervention classes appropriately.
- Continuous Assessment of Form 3 work is to be carried out through into Form 4 and Form 5 as these topics cover the basic building blocks of IGCSE Chemistry.
- There are sixteen topics in the Scheme of Work divided into three parts to cover Form 3, Form 4 and Form 5 work as students prepare for IGCSE external examinations. Within each topic there are several units.

- There three Form three classes which rotate between Physics, Chemistry and Biology each term, hence the same topics to be covered are repeated for each term.

- A separate schedule of tests is produced at the beginning of each Term taking into account the deadlines set for Mark Order Assessments / Tests.



TOPICS COVERED IN EACH FORM:

OUTLINE OF FORM 3

TERM 1, 2 & 3

Topic 1: Experimental Techniques

- 1.1 Measurement
- 1.2 Criteria for purity
- 1.3. Methods of purification

Topic 2: Particles

- 2.1 The particulate nature of matter
- 2.2 The structure of matter

Topic 3: Atomic Structure

- 3.1 Elements and Atoms
- 3.2 Protons, Electrons, neutrons and the atomic structure

Topic 4: Chemical Bonding and Structures

- 4.1 Ions and ionic bonds
- 4.2 Molecules and covalent bonds
- 4.3 Metallic bonding
- 4.4 Structures (Ionic & Metallic)
- 4.5 Macromolecules (Diamond, Graphite & Silicon Dioxide)

Topic 5: The Periodic Table

- 5.1 Periodic trends
- 5.2 Group I
- 5.3 Group VII
- 5.4 Noble Gases
- 5.5 Transition Elements

Topic 6: Reaction Rates 1

- 6.1 Investigating factors that affect speeds of reactions.



OUTLINE OF FORM 4 TOPICS

TERM 1

Topic 7: Stoichiometry

- 7.1 Formulae of Compounds
- 7.2 Writing word and chemical equations
- 7.3 Balancing of Chemical Equations

Topic 8: Acids, bases and salts

- 8.1 The characteristic properties of acids and bases
- 8.2 Types of oxides
- 8.3 Carbonates
- 8.4 Preparation of salts
- 8.5 Identification of ions and gases

TERM 2

Topic 9: Reaction Rates 2

- 9.1 Rate (speed) of a reaction

Topic 10: Metals and the Reactivity Series

- 10.1 Metallic bonding
- 10.1 Properties of metals
- 10.2 Reactivity Series
- 10.3 Extraction of metals
- 10.4 Uses of metals

Topic 11: Redox and Electrochemistry

- 11.1 Redox
- 11.2 Electricity and chemistry
- 11.3 Extraction of aluminium

TERM 3

Topic 12: Organic 1

- 12.1 Naming of compounds
- 12.2 Fuels
- 12.3 Homologous Series
- 12.4 Alkanes
- 12.5 Alkenes
- 12.6 Alcohols
- 12.7 Acids
- 12.8 Production of energy

Topic 13: Air and water

- 13.1 Air
- 13.2 Water



OUTLINE OF FORM 5 TOPICS

TERM 1

Topic 14: Equilibria and Industrial Processes

- 14.1 Reversible reactions
- 14.2 The Haber process
- 14.3 Sulfur

Topic 15: Organic 2 (Macromolecules)

- 15.1 Macromolecules
- 15.2 Synthetic polymers
- 15.3 Natural macromolecules

TERM 2

Topic 16: The Mole Concept

(This topic to be completed before mid-term break, enough time must be allocated to the topic and to be covered at a slow pace as students struggle with the mathematical concepts of this topic.)

- REVISION (2nd half of Term in preparation for Mocks)

TERM 3

- REVISION
- FINAL EXAMINATIONS