School Connect Online

SCO INTERNATIONAL CHEMISTRY OLYMPIAD

CLASS 11 OFFICIAL SYLLABUS

Chapter-wise Academic Roadmap
Designed for schools, teachers, parents, institutions, and students globally

Designed from Class 11 Chemistry syllabus pathways and aligned with SCO's platform flow for guided preparation, practice, reporting, and future-ready academic growth.

- official chapter-wise syllabus for Class 11 Chemistry Olympiad preparation globally
- learning outcomes, skills, exam readiness and chapter-by-chapter academic scope
- structured for schools, parents, institutions and self-paced student preparation

Mole Concept	Atomic Structure	Bonding	States of Matter	Thermodynamics
Equilibrium	Redox	s & p Blocks	Organic Chemistry	Environment

School Connect Online

Official Syllabus Overview

This syllabus is designed for Grade 11 learners preparing for the SCO International Chemistry Olympiad. It follows a globally useful progression across physical, inorganic, organic and environmental chemistry, with Olympiad-style emphasis on conceptual clarity, quantitative reasoning, real-world application and scientific communication.

Exam Name	SCO International Chemistry Olympiad (IChO)
Course/Class	Class 11 / Grade 11
Recommended Paper Pattern	50 MCQs | 60 minutes | General + Case Study + Reason/Assertion + Achievers
Question Difficulty	Conceptual foundation, analytical reasoning, numerical application and higher-order Olympiad problems

Chapter-wise Syllabus and Learning Outcomes

Ch.	Chapter Name	Subject	Core Coverage	International Learning Outcomes
1	**Some Basic Concepts of Chemistry**	Chemistry	Mole concept, laws of chemical combination, atomic/molecular mass, stoichiometry, limiting reagent and concentration terms.	Apply quantitative reasoning to chemical equations, compute yields, interpret formulae and connect measurements with real laboratory data.
2	**Structure of Atom**	Chemistry	Subatomic particles, atomic models, Bohr model, quantum numbers, orbitals, electronic configuration and spectral lines.	Use quantum numbers and electronic configurations to predict atomic behaviour and connect structure with spectra.
3	**Classification of Elements and Periodicity in Properties**	Chemistry	Modern periodic table, periodic trends, effective nuclear charge, ionization enthalpy, electron gain enthalpy and electronegativity.	Explain trends across periods and groups, and apply periodic reasoning to bonding and reactivity.
4	**Chemical Bonding**	Chemistry	Ionic and covalent bonding, Lewis structures, VSEPR, hybridization, resonance, polarity, hydrogen bonding and molecular orbital ideas.	Predict molecular geometry, bond polarity, stability and magnetic behaviour using bonding models.
5	**States of Matter**	Chemistry	Gas laws, ideal and real gases, van der Waals equation, kinetic molecular theory, liquids and intermolecular forces.	Interpret P-V-T behaviour, deviations from ideality and relationships between microscopic motion and macroscopic properties.
6	**Thermodynamics**	Chemistry	System and surroundings, heat, work, internal energy, enthalpy, entropy, Gibbs free energy and spontaneity.	Evaluate energy changes, spontaneity and temperature dependence of chemical processes.
7	**Equilibrium**	Chemistry	Chemical equilibrium, Kc/Kp, Le Chatelier's principle, ionic equilibrium, pH, buffers, hydrolysis and solubility equilibrium.	Solve equilibrium problems and explain industrial, environmental and biological pH control scenarios.
8	**Redox Reactions**	Chemistry	Oxidation number, balancing redox equations, electrochemical cells, Nernst equation and electrode processes.	Identify electron-transfer processes, balance equations and relate cell potential to reaction feasibility.

9	**Hydrogen**	Chemistry	Position of hydrogen, isotopes, hydrides, water, hydrogen peroxide and hydrogen economy.	Connect hydrogen's small size and bonding behaviour with clean-energy and storage applications.
10	**The s-Block Elements**	Chemistry	Group 1 and Group 2 trends, diagonal relationship, important compounds and biological relevance.	Compare reactivity trends and explain characteristic behaviour of alkali and alkaline-earth metals.
11	**The p-Block Elements**	Chemistry	General p-block trends, boron and carbon families, electron-deficient compounds, allotropy and selected compounds.	Explain p-block bonding, oxidation states, catenation and environmental relevance of selected elements.
12	**Organic Chemistry - Some Basic Principles and Techniques**	Chemistry	IUPAC nomenclature, isomerism, electronic effects, reaction mechanisms, purification and qualitative analysis.	Name organic compounds, interpret mechanisms and apply inductive/resonance effects to reactivity.
13	**Hydrocarbons**	Chemistry	Alkanes, alkenes, alkynes, aromatic hydrocarbons, addition, substitution, combustion and petroleum-related chemistry.	Predict products of hydrocarbon reactions and evaluate fuels using structure-reactivity relationships.
14	**Environmental Chemistry**	Chemistry	Air, water and soil pollution, photochemical smog, acid rain, greenhouse effect, ozone, waste management and green chemistry.	Apply chemistry to global sustainability, pollution control and responsible technology decisions.

Olympiad Preparation Roadmap

Foundation Stage: Revise level theory, definitions, formulae and key examples chapter-wise.

Application Stage: Solve numerical and concept-linked problems from mole concept, gas laws, thermodynamics, equilibrium and electrochemistry.

Reasoning Stage: Practise assertion-reason, case-study and data interpretation questions using graphs, tables and laboratory contexts.

Achievers Stage: Attempt multi-step problems that combine chapters, such as thermodynamics with equilibrium, redox with electrochemistry, and bonding with periodicity.

Review Stage: Maintain an error notebook for wrong assumptions, units, sign conventions, oxidation states and organic product prediction.

SCO Learning Support Note

SCO International Olympiad may provide free learning materials, practice assignments, mock readiness pathways and performance reporting to help learners build confidence before the official examination.