SCO INTERNATIONAL CHEMISTRY OLYMPIAD

CLASS 10 | OFFICIAL SYLLABUS

Academic Year | Question Paper Set Syllabus

Designed for global school learners with concept clarity, reasoning, applications, and responsible scientific thinking.

Designed from Class 10 Chemistry syllabus pathways and aligned with SCO's guided preparation, practice, reporting, and future-ready academic growth.

- chapter-wise learning goals, skills, examples, project ideas, and assessment focus
- preparation roadmap for schools, teachers, parents, and students
- global learning orientation with safe, responsible, environment-aware chemistry connections

Chemical Reactions	Acids, Bases & Salts	Metals & Non-Metals
Carbon Compounds	Periodic Classification	Sources of Energy

Exam Code	Grade	Document
IChO	10	SCO Official

SCO International Chemistry Olympiad - Class 10 Official Syllabus

This syllabus document is designed for schools, teachers, parents, and students preparing for the SCO International Chemistry Olympiad. It follows a Grade 10 chemistry learning pathway with conceptual clarity, reasoning, practical application, environmental awareness, and Olympiad-level problem solving.

Chapter-wise Learning Pathway

Chapter 1 Chemical Reaction and Equation

Learning outcomes

- write and balance chemical equations
- identify combination, decomposition, displacement, double displacement, precipitation, oxidation, and reduction reactions
- connect observations such as gas evolution, colour change, precipitate formation, and temperature change with chemical change

Olympiad skill focus: balancing equations, reaction evidence, redox thinking, daily-life corrosion and rancidity

Chapter 2 Acid Bases and Salt

Learning outcomes

- classify acids and bases using indicators and pH
- explain neutralisation and salt formation
- understand household and industrial uses of sodium hydroxide, bleaching powder, baking soda, washing soda, and plaster of Paris

Olympiad skill focus: pH interpretation, indicator reasoning, salt hydrolysis basics, safe laboratory handling

Chapter 3 Metals and Non Metals

Learning outcomes

- compare physical and chemical properties of metals and non-metals
- use the reactivity series to predict displacement reactions
- explain ionic bonding, corrosion, extraction ideas, and protective coatings

Olympiad skill focus: reactivity series, ionic compounds, corrosion prevention, metallurgy basics

Chapter 4 Carbon and Its Compounds

Learning outcomes

- explain tetravalency and catenation of carbon
- recognise saturated and unsaturated hydrocarbons
- identify functional groups and basic reactions of ethanol, ethanoic acid, soaps, and detergents

Olympiad skill focus: covalent bonding, homologous series, functional groups, combustion and addition reactions

Chapter 5 Periodic Classification of Elements

Learning outcomes

- explain historical classification and modern periodic law
- predict trends in valency, atomic size, metallic and non-metallic character
- apply periodic trends to bonding and reactivity

Olympiad skill focus: Mendeleev and modern table, periodic trends, group behaviour, prediction skills

Chapter 6 Sources of energy

Learning outcomes

- compare renewable and non-renewable energy sources
- explain energy quality, calorific value, and environmental impact
- connect fuel cells, solar energy, biomass, and fossil fuels with sustainable choices

Olympiad skill focus: energy efficiency, pollution and greenhouse gases, renewable energy, responsible energy use

Assessment Blueprint

Section	No. of Questions	Assessment Focus
General Chemistry Concepts	20 questions	Core chapter understanding and direct application
Case Study and Application	10 questions	Real-world chemistry, laboratory interpretation, environmental reasoning
Reason and Assertion	10 questions	Conceptual logic and cause-effect explanation
Achievers Section	10 questions	Higher-order calculation, prediction, and multi-step reasoning

Preparation Roadmap

- First build accuracy in balancing equations, pH interpretation, reactivity series, and carbon compound identification.
- Then practise mixed reasoning questions where observations must be connected to chemical principles.
- Use small safe demonstrations, charts, and data tables to improve interpretation skills.
- For Achievers-level readiness, practise mole-ratio calculations, displacement predictions, buffer/pH reasoning, and energy-source comparisons.
- Keep explanations evidence-based: state the observation, identify the principle, and apply it to the answer.

Suggested Project and Inquiry Ideas

- Compare pH of safe household liquids using indicator paper and prepare a pH safety chart.
- Build a reactivity-series demonstration chart using displacement observations from safe classroom examples.
- Create a carbon-compound poster showing methane, ethanol, ethanoic acid, soap, and detergent with uses and functional groups.
- Prepare an energy audit of school electricity sources and compare renewable and non-renewable options.
- Investigate corrosion prevention methods such as painting, oiling, galvanising, and alloying through case reports.