School Connect Online

SCO INTERNATIONAL OLYMPIAD

GRADE 10 OFFICIAL SYLLABUS

SCO International Biology Olympiad Class 10 syllabus with chapter-wise outcomes, inquiry-based preparation guidance, and PDF-ready academic structure.

Designed for Grade 10 Biology learners with SCO's guided preparation, practice, reporting, and future-ready academic growth.

- chapter-wise syllabus pathway for Grade 10 Biology learners globally
- learning outcomes, key concepts, practice focus, project prompts, and exam-readiness guidance
- designed for website PDF conversion and downloadable student guidance

Life Processes	**Control & Coordination**	**Reproduction**
Heredity	**Environment**	**Resources**

SCO International Biology Olympiad - Class 10 Official Syllabus

This syllabus is designed for Grade 10 learners preparing for the SCO International Biology Olympiad. It builds conceptual clarity, diagram-based understanding, applied reasoning, environmental responsibility, and Olympiad-style problem

Chapter Overview

No.	Chapter Name	Theme	Core Learning Focus
1	**Life Processes**	Biology	Photosynthesis, digestion, respiration, transport, excretion.
2	**Control and Coordination**	Biology	Nerves, reflex arc, brain, hormones, plant movements.
3	**How do Organisms Reproduce?**	Biology	Asexual/sexual reproduction, flowers, humans, fertilisation.
4	**Heredity and Evolution**	Biology	Genes, traits, Mendelian inheritance, sex determination, variation.
5	**Our Environment**	Biology	Food chains, food webs, decomposers, ozone, waste management.
6	**Management of Natural Resources**	Biology	Forests, water, fossil fuels, 3R practices, community conservation.

Life Processes

- Explain nutrition in plants and humans with digestive flow and absorption through villi.
- Compare aerobic and anaerobic respiration and connect breathing rate with energy needs.
- Describe transport in plants and humans, including xylem, phloem, blood vessels, and double circulation.
- Explain excretion in humans with nephron-based filtration and water balance.

Control and Coordination

- Draw and explain a reflex arc and distinguish reflex action from voluntary action.
- Identify major brain regions and their functions: cerebrum, cerebellum, medulla, and hypothalamus.
- Explain endocrine control using insulin, adrenaline, thyroxine, and plant hormones such as auxin.
- Apply tropism concepts to real plant-growth situations.

How do Organisms Reproduce?

- Compare asexual methods such as binary fission, budding, fragmentation, and vegetative propagation.
- Explain pollination, fertilisation, seed formation, and fruit formation in flowering plants.
- Understand human reproductive systems, fertilisation, placenta, and reproductive health at age-appropriate level.
- Connect reproduction with continuity of species and variation.

Heredity and Evolution

- Define gene, allele, dominant trait, recessive trait, genotype, and phenotype.
- Use simple monohybrid crosses and Punnett squares to predict trait ratios.
- Explain sex determination in humans using X and Y chromosomes.

- Distinguish inherited traits from acquired traits and understand the role of variation.

Our Environment

- Construct food chains and food webs and identify producers, consumers, and decomposers.
- Explain energy flow, trophic levels, and why food chains are generally short.
- Differentiate biodegradable and non-biodegradable wastes with examples.
- Explain biomagnification, ozone depletion, and environmental responsibility.

Management of Natural Resources

- Explain sustainable management and why resources must be conserved for future generations.
- Compare reduce, reuse, recycle, rainwater harvesting, watershed management, and forest conservation.
- Discuss community participation in protecting forests and water resources.
- Apply resource-management thinking to local school and community examples.

Exam Structure and Preparation Focus

Section	Preparation Focus
General Questions	Concept clarity, definitions, processes, diagrams, and direct applications.
Case Study Questions	Real-life biology situations involving health, environment, agriculture, and sustainability.
Reason/Assertion	Logical cause-effect thinking and scientific explanation.
Achievers Section	Higher-order reasoning, data interpretation, multi-step application, and integrated chapter questions.

Student Project and Practice Bank

- Prepare a labelled digestive-system flow chart and explain where digestion and absorption occur.
- Observe phototropism using a potted plant near a window and record directional growth.
- Create a Punnett-square chart for a simple monohybrid cross and interpret phenotype ratios.
- Build a local food web for a pond, garden, or school ecosystem.
- Design a rainwater-harvesting or waste-segregation plan for the school campus.

SCO Learning Support

SCO International Olympiad provides structured preparation through syllabus guidance, practice assignments, sample papers, learning resources, performance analysis, and student-friendly reporting. Schools may use this syllabus to plan classroom enrichment, revision, project work, and Olympiad preparation pathways.