

## Group 4



## Biology – Standard Level

IB Biology SL is a two-year, 150 hour course that allows the student to continue the study of biology, examining living organisms and systems. The course weaves four concepts through each of the topics: structure and function, universality vs. diversity, equilibrium within systems, and evolution. Students come to realize that some structures permit some functions while limiting others. They link processes at molecular levels to physiological and ecological processes at the systems level and come to understand that evolution and genetics leads to diversity and adaptations. Diversity of species and habitats can then be appreciated along with an awareness that a state of equilibrium is essential for the continuity of life.

### Subject Areas

1. **Cells** - prokaryotic and eukaryotic cells, membrane and cell division.
2. **The Chemistry of life** – biochemical, enzymes, DNA structure and replication, respiration, photosynthesis
3. **Genetics** - chromosomes, genes, alleles, mutation and meiosis.
4. **Ecology and Evolution** – ecosystems, communities, population dynamics, evolution, classification
5. **Human Health and Physiology** - digestion, transport system, pathogens and disease, respiratory system, reproduction, homeostasis, excretion

### Options

6. **Diet and Human Nutrition** - diet, biochemistry of nutrition, diet, health.
7. **Physiology of exercise** - the skeleton, joints and muscles, muscles and energy, fitness and training and injuries.
8. **Neurobiology and Behavior** – types of behaviors, perception of stimuli; innate, learned and social behavior.
9. **Ecology and Conservation** – Ecology of species and communities and Biodiversity and conservation.

## Assessment

**Internal Assessments** Interdisciplinary project, a mixture of short or long term investigations (practical and subject specific projects) 24%

This requires completion of 40 hours of Practical Investigations and must include completion of the Group 4 Project. All Group 4 Science students must complete the Group 4 research project in Grade 11 in addition to the required hours of investigative work over the two-year course. Internal Assessment will be based upon the IBO Diploma Assessment criteria for Practical reports in the areas of Planning, Data Collection, Data Processing and Presentation, Conclusion and Evaluation, Manipulative Skills, and Personal Skills. Practical reports completed by students across the two-years course will be assessable.

<b>External Paper 1</b>	¾ hr – 30 multiple choice questions on the core	20%
<b>Paper 2</b>	1 ¼ hrs <ul style="list-style-type: none"><li>• One data based question and several short answer questions on the core</li><li>• One extended response question on the core</li><li>• (A choice of three)</li></ul>	32%
<b>Paper 3</b>	Several short answer questions in each of the two options studied (all compulsory)	24%