



PARKLAND SECONDARY SCHOOL

“An Innovative, Inspiring, Inclusive Learning Community”

International Baccalaureate Biology Higher Level (IB Biology HL)

Biology is the study of life. Biologists attempt to understand the living world at all levels using many different approaches and techniques. At one end of the scale is the cell, its molecular construction and complex metabolic reactions. At the other end of the scale biologists investigate the interactions that make whole ecosystems function.

Group 4 Biology aims

The aims of the course are to enable students, through the overarching theme of the Nature of science, to:

1. appreciate scientific study and creativity within a global context through stimulating & challenging opportunities
 2. acquire a body of knowledge, methods and techniques that characterize science and technology
 3. apply and use a body of knowledge, methods and techniques that characterize science and technology
 4. develop an ability to analyse, evaluate and synthesize scientific information
 5. develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities
 6. develop experimental and investigative scientific skills including the use of current technologies
 7. develop and apply 21st century communication skills in the study of science
 8. become critically aware, as global citizens, of the ethical implications of using science and technology
 9. develop an appreciation of the possibilities and limitations of science and technology
 10. develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge.
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Group 4 Biology HL Assessment objectives

Students will be expected to:

1. Demonstrate knowledge and understanding of:
 - a. facts, concepts and terminology
 - b. methodologies and techniques
 - c. communicating scientific information.
 2. Apply:
 - a. facts, concepts and terminology
 - b. methodologies and techniques
 - c. methods of communicating scientific information.
 3. Formulate, analyse and evaluate:
 - a. hypotheses, research questions and predictions
 - b. methodologies and techniques
 - c. primary and secondary data
 - d. scientific explanations.
 4. Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations.
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Group 4 Biology HL Topics

Syllabus component	Teaching hours
Core:	95
Topic 1: Cell biology	15
Topic 2: Molecular biology	21
Topic 3: Genetics	15
Topic 4: Ecology	12
Topic 5: Evolution and biodiversity	12
Topic 6: Human Physiology	20
Additional Higher Level	60
Topic 7: Nucleic acids	9
Topic 8: Metabolism, cell respiration and photosynthesis	13
Topic 9: Plant biology	14
Topic 10: Genetics and evolution	8
Topic 11: Animal physiology	16
Option	25
Topic D: Human Physiology	25
Practical scheme of work	60
Practical Activities	40
Individual Investigation (Internal Assessment)	10
Group 4 Project	10
Total teaching hours	240

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Evaluation

Assessment Component	Weighting
External Assessment	80
Paper 1 (1 hour) 30 multiple choice on core material	20
Paper 2 (2 ¼ hours) Data based question. Short-answer and extended-response questions on core material.	36
Paper 3 (1 ¼ hour)	24
Internal Assessment (10 hours)	20
The internal assessment consists of one scientific investigation. The individual investigation should cover a topic that is commensurate with the level of the course of study. A comprehensive report is prepared and assessed internally by the teacher but externally moderated. Some of the possible tasks include: <ul style="list-style-type: none">• a hands-on laboratory investigation• using a spreadsheet for analysis and modelling• extracting data from a database and analysing it graphically• producing a spreadsheet/database with a hands-on investigation• using a simulation provided it is interactive and open-ended.	

Resources:

- Students should bring a ruler, pencil, eraser, regular scientific calculator, and a notebook
- A TI 83 or TI 84 will be provided when required.
- The course text book will be Biology by Andrew Allott and David Mindroff