

**Liverpool Girls’ High School**

*Innovation Excellence Learning*

**Biology**

STAGE 6 PRELIMINARY ~ COURSE OUTLINE

Students who study biology need to be hard working and dedicated to study in the future.

Biology is the study of living organisms, life processes and interactions between organisms and their environment.

The *Preliminary course* incorporates the study of the mechanisms and systems that living things use to obtain, transport and draw on materials for their own growth and repair; biotic and abiotic features of the environment and the interdependence of organisms in an ecosystem; the evolution of life on Earth; and the effects of global changes on the diversity of Australian biota during the formation of the Australian continent.

The *HSC course* builds upon the Preliminary course. It examines the processes and structures that plants and animals use to maintain a constant internal environment and the way in which characteristics are transmitted from generation to generation. The options cover a variety of interest areas and draw on the increased information and understanding provided by improved technology to examine areas of current research.

**TOPICS COVERED**

|  |  |
| --- | --- |
| ***Preliminary Course***  Biology Skills Module 8.1  **Core Modules**   * A Local Ecosystem * Patterns in Nature * Life on Earth * Evolution of Australian Biota |  |

**COURSE REQUIREMENTS**

The Preliminary course includes a field study related to local terrestrial and aquatic environments. Students will complete a minimum of 80 indicative hours of practical experiences across Preliminary and HSC course time with no less than 35 hours in the HSC course.

**SYLLABUS OUTCOMES**

*A student …*

**P1** outlines the historical development of major biological principles, concepts and ideas

**P2** applies the processes that are used to test and validate models, theories and laws of science, with particular emphasis on first-hand investigations in biology

**P3** assesses the impact of particular technological advances on understanding in biology

**P4** describes applications of biology which affect society or the environment

**P5** describes the scientific principles employed in particular areas of biological research

**P6** explains how cell ultrastructure and the coordinated activities of cells, tissues and organs contribute to macroscopic processes in organisms

**P7** describes the range of organisms in terms of specialisation for a habitat

**P8** analyses the interrelationships of organisms within the ecosystem

**P9** explains how processes of reproduction ensure continuity of species

**P10** identifies and describes the evidence for evolution

**P11** identifies and implements improvements to investigation plans

**P12** discusses the validity and reliability of data gathered from first-hand investigations and secondary sources

**P13** identifies appropriate terminology and reporting styles to communicate information and understanding in biology

**P14** draws valid conclusions from gathered data and information

**P15** implements strategies to work effectively as an individual or as a team member

**P16** demonstrates positive values about and attitudes towards both the living and non-living components of the environment, ethical behaviour and a desire for a critical evaluation of the consequences of the applications of science

**BOSTES PRELIMINARY ASSESSMENT INFORMATION**

|  |  |  |
| --- | --- | --- |
| **Component** | | **Weighting** |
| **A** | Knowledge and understanding of: • the history, nature, and practice of biology, applications and uses of biology and their implications for society and the environment, and current issues, research and developments in biology • cell ultrastructure and processes, biological diversity, environmental interactions, mechanisms of inheritance and biological evolution | 40 |
| **B** | Skills in: • planning and conducting first-hand investigations • gathering and processing first-hand data • gathering and processing relevant information from secondary sources | 30 |
| **C** | Skills in: • communicating information and understanding • developing scientific thinking and problem-solving techniques • working individually and in teams | 30 |
|  | | **100** |

EVIDENCE OF LEARNING (Assessment)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Task No.** | **Targeted Outcomes** | **Learning Context** | **Task** | **Date Due** | **Weighting** | | | **Marks** |
| A | B | C |
| 1 | P – 3, 7, 8, 12, 14, 15 | Patterns in Nature | Open Ended Investigation | Term 1  Week 8 | 5% | 15% | 10% | 30% |
| 2 | P – 2, 6, 11, 12, 13, 14, 15 | Local Ecosystem | Field Study | Term 2  Week 8 | 10% | 10% | 15% | 35% |
| 3 | P – 1-10, 12, 13, 14 | All Content | End of Course Examination | Term 3  Wks 9-10 | 25% | 5% | 5% | 35% |
| **TOTAL** | | | | | **40%** | **30%** | **30%** | **100%** |

**REPORTING PERFORMANCE AND ACHIEVEMENT IN PRELIMINARY COURSES**

The Common Grade Scale shown below is used to report student achievement and performance in the Preliminary Stage 6 year in all NSW schools.

The Common Grade Scale describes performance and achievement at each of five grade levels.

|  |  |
| --- | --- |
| A | The student demonstrates extensive knowledge of content and understanding of course concepts, and applies highly developed skills and processes in a wide variety of contexts. In addition the student demonstrates creative and critical thinking skills using perceptive analysis and evaluation. The student effectively communicates complex ideas and information. |
| B | The student demonstrates thorough knowledge of content and understanding of course concepts, and applies well-developed skills and processes in a variety of contexts. In addition the student demonstrates creative and critical thinking skills using analysis and evaluation. The student clearly communicates complex ideas and information. |
| C | The student demonstrates sound knowledge of content and understanding of course concepts, and applies skills and processes in a range of familiar contexts. In addition the student demonstrates skills in selecting and integrating information and communicates relevant ideas in an appropriate manner. |
| D | The student demonstrates a basic knowledge of content and understanding of course concepts, and applies skills and processes in some familiar contexts. In addition the student demonstrates skills in selecting and using information and communicates ideas in a descriptive manner. |
| E | The student demonstrates an elementary knowledge of content and understanding of course concepts, and applies some skills and processes with guidance. In addition the student demonstrates elementary skills in recounting information and communicating ideas. |