**SBI 3U** Prerequisite: SNC 2D

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Course Site: <https://sites.google.com/a/ocdsb.ca/ms-gerards-classes/home/course-code-1>

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| *Textbook*: McGraw-Hill Ryerson Biology 11 , *Replacement Value*: $110 , *Assigned* # \_\_\_\_\_\_\_\_\_\_\_ |

**Course Description:**

This course furthers students’ understanding of the processes that occur in biological systems. Students will study theory and conduct investigations in the areas of biodiversity; evolution; genetic processes; the structure and function of animals; and the anatomy, growth and function of plants. The course focuses on the theoretical aspects of the topics under study, and helps students refine skills related to scientific investigation. The curriculum document is available from: <http://www.edu.gov.on.ca/eng/curriculum/>. Overall Expectations are also listed on the back.

**Units of Study:**

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|  |  | **Textbook** | **Expectations\*** |
| Unit 1 | Diversity of Living Things | Chapters 1, 2, 3 | B1, B2, B3 |
| Unit 2 | Genetic Processes | Chapters 4, 5, 6 | D1, D2, D3 |
| Unit 3 | Evolution | Chapters 7, 8, 9 | C1, C2, C3 |
| Unit 4 | Animals: Structure and Function | Chapters 10, 11, 12 | E1, E2, E3 |
| Unit 5 | Plants: Anatomy, Growth, and Function | Chapters 13, 14 | F1, F2, F3 |

**Assessment and Evaluation:**

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| Category and Types of Assessment | Weight |
| **Term*** The expectations for the units listed above.
* Scientific Investigation Skills & Career Exploration (A1, A2) integrated into each unit.

  | 70 % |
| **Summative** * 10 % end of year Summative project (rich performance task)
* 20 % final Exam

  | 30 % |

**Additional notes:**

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|  The Nepean Science Department follows the evaluation policies as outlined on the NHS website:<http://www.nepeanhighschool.com/index.php?option=com_wrapper&view=wrapper&Itemid=145> Each student is required to bring to class their textbook and notebook, a pen, pencil, ruler, graph paper and a scientific calculator. All assignments are to be written individually.Extra help for review or remediation is readily available and best arranged by consulting with your teacher to determine availability.Students must make arrangements to make-up a missed test or experiment.Assignments and reports are due at the beginning of class.  |

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| **Expectations**  | Unit Task #1 | Unit Task #2  | Unit Test #3  | Overall  |
| **Diversity of Living Things** |  |  |  |  |
| B1. analyze the effects of various human activities on the diversity of living things |  |  |  |  |
| B2. investigate through laboratory and/or field activities, or through simulations, the principles of scientific classification, using appropriate sampling and classification techniques  |  |  |  |  |
| B3. demonstrate an understanding of the diversity of living organisms in terms of the principles of taxonomy and phylogeny |  |  |  |  |
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| **Genetic Processes**  |  |  |  |  |
| D1. evaluate the importance of some recent contributions to our knowledge of genetic processes, and analyze social and ethical implications of genetic and genomic research |  |  |  |  |
| D2. investigate genetic processes, including those that occur during meiosis, and analyze data to solve basic genetics problems involving monohybrid and dihybrid crosses |  |  |  |  |
| D3. demonstrate an understanding of concepts, processes, and technologies related to the transmission of hereditary characteristics |  |  |  |  |
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| **Evolution** |  |  |  |  |
| C1. analyse the economic and environmental advantages and disadvantages of an artificial selection technology, and evaluate the impact of environmental changes on natural selection and endangered species |  |  |  |  |
| C2. investigate, evolutionary processes, and analyze scientific evidence that supports the theory of evolution |  |  |  |  |
| C3. demonstrate an understanding of the theory of evolution, the evidence that supports it, and some of the mechanisms by which it occurs |  |  |  |  |
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| **Animals: Structure and Function** |  |  |  |  |
| E1. analyse the relationships between changing societal needs, technological advances, and ourunderstanding of internal systems of humans; |  |  |  |  |
| E2. investigate, through laboratory inquiry or computer simulation, the functional responsesof the respiratory and circulatory systems of animals, and the relationships between theirrespiratory, circulatory, and digestive systems; |  |  |  |  |
| E3. demonstrate an understanding of animal anatomy and physiology, and describe disorders of the respiratory, circulatory, and digestive systems. |  |  |  |  |
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| **Plants: Anatomy, Growth and Function** |  |  |  |  |
| F1. evaluate the importance of sustainable use of plants to Canadian society and other cultures; |  |  |  |  |
| F2. investigate the structures and functions of plant tissues, and factors affecting plant growth; |  |  |  |  |
| F3. demonstrate an understanding of the diversity of vascular plants, including their structures, internal transport systems, and their role in maintaining biodiversity. |  |  |  |  |
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| **Scientific Investigation**  |  |  |  |  |
| A1. demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating); |  |  |  |  |
| A2. identify and describe a variety of careers related to the fields of science under study, and identify scientists, including Canadians, who have made contributions to those fields. |  |  |  |  |