

Biology 12 Online: Student Learning Plan

Prerequisites

Students must possess sufficiently high English language skills. At a minimum, students should have completed a Grade 10 level English course or have permission of the Biology 12 instructor. Students who are under 19 years of age must also have written consent of a parent or guardian. Students who are attending any secondary school in British Columbia should also discuss enrolling in Biology 12 Online with their academic counselor.

Learning Outcomes

Biology 12 is a 4-credit course that can be used toward completion of the British Columbia Grade 12 Graduation program. Online Biology 12 follows the BC Ministry of Education approved learning outcomes and the topic areas include Processes of Science, Cell Biology, and Human Biology. The table below describes the Biology 12 learning outcomes in more detail:

Processes of Science: <ul style="list-style-type: none">demonstrate safe and correct technique for a variety of laboratory proceduresdesign an experiment using the scientific methodinterpret data from a variety of text and visual sources
Cell Biology: <i>Cell Structure</i> <ul style="list-style-type: none">analyse the functional inter-relationships of cell structures
Cell Biology: <i>Cell Compounds and Biological Molecules</i> <ul style="list-style-type: none">describe the characteristics of water and its role in biological systemsdescribe the role of acids, bases, and buffers in biological systems in the human bodyanalyse the structure and function of biological molecules in living systems, including carbohydrates, lipids, proteins, and nucleic acids
Cell Biology: <i>DNA Replication</i> <ul style="list-style-type: none">describe DNA replicationdescribe recombinant DNA
Cell Biology: <i>Protein Synthesis</i> <ul style="list-style-type: none">demonstrate an understanding of the process of protein synthesisexplain how mutations in DNA affect protein synthesis
Cell Biology: <i>Transport across Cell Membrane</i> <ul style="list-style-type: none">analyse the structure and function of the cell membraneexplain why cells divide when they reach a particular surface area-to-volume ratio
Cell Biology: <i>Enzymes</i> <ul style="list-style-type: none">analyse the roles of enzymes in biochemical reactions
Human Biology: <i>Digestive System</i> <ul style="list-style-type: none">analyse the functional inter-relationships of the structures of the digestive systemdescribe the components, pH, and actions of salivary, gastric, pancreatic, and intestinal juices
Human Biology: <i>Circulatory System</i> <ul style="list-style-type: none">describe the inter-relationships of the structures the heartanalyse the relationship between heart rate and blood pressureanalyse the functional inter-relationships of the vessels of the circulatory systemdescribe the components of blooddescribe the inter-relationships of the structures of the lymphatic system
Human Biology: <i>Respiratory System</i> <ul style="list-style-type: none">analyse the functional inter-relationships of the structures of the respiratory systemanalyse the processes of breathinganalyse internal and external respiration
Human Biology: <i>Nervous System</i> <ul style="list-style-type: none">analyse the transmission of nerve impulsesanalyse the functional inter-relationships of the divisions of the nervous system
Human Biology: <i>Urinary System</i> <ul style="list-style-type: none">analyse the functional inter-relationships of the structures of the urinary system
Human Biology: <i>Reproductive System</i> <ul style="list-style-type: none">analyse the functional inter-relationships of the structures of the male reproductive systemanalyse the functional inter-relationships of the structures of the female reproductive system

For more detailed description of the Ministry of Education Prescribed Learning Outcomes for Biology 12, please refer to <http://www.bced.gov.bc.ca/irp/pdfs/sciences/2006biology1112.pdf>.

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Required Learning Resources

All students enrolled in Biology 12 Online are expected to have the following:

- An active, working e-mail address (students under 19 years old must also provide e-mail or telephone contact information of their parent or guardian).
- Internet access to online course learning resources (requires user name and password).
- A copy of the textbook, *Inquiry Into Life -10th Ed.* This textbook is available, on deposit, through our learning centre.

Learning Activities and Student Performance Expectations

Students are expected to log in regularly and be actively working on the course. If you are inactive in the course for greater than two weeks, your account will be suspended and you will be unable to log in to the course. If your account has been suspended and you wish to continue the course, you must contact the teacher.

All Biology 12 students have access to an instructor. You should contact your instructor for tutoring help, general questions about the course, or to review tests. Biology 12 instructors can be contacted via email, telephone or in person at the Columbia Square Learning Centre. For more information about contacting instructors, please refer to the information in the course. For tutoring schedules please refer to our online calendar at our website, www.virtualschoolbc.ca.

For more information about Biology 12 Online is comprised of 12 units. Each unit in the online course includes

- a description of the learning objectives and a summary of the material covered
- reference to the required chapter reading in *Inquiry Into Life*
- links to additional learning resources, including videos, content specific questions, and other activities
- a practice test

Biology 12 Online Units:

Unit 1	Processes of Science and Chemistry of Life
Unit 2	Cell Structure and Membrane Function
Unit 3	The Plasma Membrane
Unit 4	Metabolism: Energy and Enzymes
Unit 5	Molecular Basis of Inheritance and Recombinant DNA
Unit 6	The Digestive System
Unit 7	The Circulatory System
Unit 8	The Lymphatic System and Immunity
Unit 9	The Respiratory System
Unit 10	The Excretory System
Unit 11	The Nervous System
Unit 12	The Reproductive System

Your learning in each unit is evaluated through an online test. With the exception of Unit 1, all unit tests are closed book and must be written under the supervision of a teacher at the Columbia Square Learning Centre or another designated location. Each test is worth 8% of your final grade. Students are expected to pass all 12 tests in the course. Should you fail a test, contact your online instructor for further instructions.

The course also includes one lab assignment, described in Unit 3. When complete, the lab assignment can be sent as an email attachment or delivered in paper format to the instructor. The lab assignment can be completed at any time during the course. The lab assignment is worth 4% of your final grade in the course. For more information about the lab assignment, please refer to Unit 3 in the online course.

The provincial exam for this course is no longer available or required.

If you have any questions about Biology 12 online, please call the Columbia Square Learning Centre at 604.517.6191 or email your instructor.