

Biology, Grade 11

SBI3C

This course focuses on the processes that occur in biological systems. Students will learn concepts and theories as they conduct investigations in the areas of cellular biology, microbiology, genetics, the anatomy of mammals, and the structure of plants and their role in the natural environment. Emphasis will be placed on the practical application of concepts, and on the skills needed for further study in various branches of the life sciences and related fields.

Prerequisite: Science, Grade 10, Academic or Applied

Big Ideas

Cellular Biology

- Life processes are determined by the structures and functions of biochemical compounds, cell organelles, and body systems.
- Technological devices that support cellular functions and processes can be used to improve human health.
- Substances that are present in our everyday lives can affect cellular functions and processes in positive and negative ways.

Microbiology

- Groups of microorganisms have common characteristics, and these characteristics enable them to interact with other organisms in the environment
- Microorganisms can have both positive and negative effects on the environment.
- The technological use of microorganisms raises many ethical issues.

Genetics

- Genetic research and biotechnology have social, environmental, and ethical implications.
- Variability and diversity of living organisms result from the distribution of genetic materials during the process of meiosis.

Anatomy of Mammals

- Groups of organs with specific structures and functions work together as systems, which interact with other systems in the body.
- Technologies that are used to maintain human health have social and economic benefits and costs.
- Environmental factors, including natural factors and those resulting from human activity, can have a wide range of effects on human health.

Plants in the Natural Environment

- Plants have specialized structures with distinct functions that enable them to respond and adapt to their environment.
- Plants are critical to the survival of ecosystems.
- Humans affect the sustainability of ecosystems when they alter the balance of plants within those ecosystems.