

TAKE PRIDE

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FIND YOUR POTENTIAL

LETHBRIDGE COLLEGIATE INSTITUTE

Science 30 Course Outline

Science 30 consists of four units of study:

A: Living Systems Respond to their Environment

B: Chemistry and the Environment

C: Electromagnetic Energy

D: Energy and the Environment

The Alberta High School science program deals with the following four foundations

Attitudes:

Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment.

Knowledge:

Students will construct knowledge and understandings of concepts in life science, physical science, and Earth and space science, and apply these understandings to interpret, integrate, and extend their knowledge.

Science, Technology, and Society (STS):

Students will develop an understanding of the nature of science and technology, the relationships between science and technology, and the social and environmental contexts of science and technology.

Skills:

Students will develop the skills required for scientific and technological inquiry, for solving problems, for communicating scientific ideas and results, for working collaboratively and for making informed decisions.

These 4 foundations are developed throughout the course.

UNIT A: Living Systems Respond to their Environment

In this unit, students learn that the circulatory system assists in the interaction between blood cells and the external environment and, in combination with the immune system, defends the body against pathogens. Students study the principles of heredity and molecular genetics to explain human disorders and to assess the risks and benefits of genetic technologies.

UNIT B: Chemistry and the Environment

In this unit, students examine the impacts of acids and bases, organic compounds and air pollutants on aquatic and terrestrial ecosystems.

UNIT C: Electromagnetic Energy

Electrical energy transmission and transformation technologies, based on field theory and on an understanding of electromagnetic radiation (EMR), play an important role in meeting human needs. Students investigate the functioning of these technologies, the principles of field theory and the properties of EMR.

UNIT D: Energy and the Environment

Students investigate and analyze the sources of renewable and nonrenewable energy and, in doing so, explore the need for multiple perspectives and the need to develop energy-efficient technologies. Students address the demand for environmentally sustainable solutions to meet global energy needs.

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Course Assessment and Evaluation

Evaluation will consist of a balance between **Formative** and **Summative** assessment.

Formative assessment is assessment “*for*” learning. Tools used for this type of assessment generally address one or two learning objectives and include various types of activities, including (but not limited to) assignments, worksheets, homework, group work, games, or other classroom activities. This allows teachers to track student progress as well as to see and address areas of strength and weakness of particular students and the class as a whole. It allows students to gain practice in a particular area in order to really learn the material before the summative assessment without fear or worry of the assignment affecting their overall course grade.

Summative assessment is considered assessment “*of*” learning. Tools used for this type of evaluation address several learning objectives simultaneously and will include the final exam, unit exams, labs and projects.

Students cannot be successful on summative evaluation if they have not completed the formative assessment!

To make an analogy: *You cannot swim across the English Channel without training and practice!*

Course Breakdown

Unit A: Living Systems Respond to their Environment	4 weeks	24%
Unit B: Chemistry and the Environment	4 weeks	24%
Unit C: Electromagnetic Energy	4 weeks	24%
Unit D: Energy and the Environment	4 weeks	23%

Project - 5% of course

Unit Breakdown

Individual Performance Tasks	40%
Unit Exams	60%

The final grade awarded to students taking Science 30 will be based on:

50% school-based mark

50% Diploma Exam

Resource

Jenkins, van Kessel, Tompkins & Lantz, Nelson Chemistry, Thompson/Nelson Publishing