



FOREST HILL CI

SNC1D GRADE 9 ACADEMIC SCIENCE COURSE OUTLINE

Welcome to Grade 9 Science! This course will help you to gain a deeper understanding of chemistry, ecology, electricity, space and astronomy as well as an understanding of the interrelationships between science, technology and the environment. You will also be given opportunities to increase your skills in scientific inquiry, including designing and performing experiments. Please read the following document paying close attention to your responsibilities and how you will be evaluated. Good luck!

Resources

Textbook: The grade 9 Science textbook is 'ON Science 9' by Pearson. The replacement cost of the textbook is **\$80**.

Tools for Success/Learning Skills

Responsibility	- Understand and follow this course outline and the policies outlined in the Student Agenda. - Arrive on time - Come prepared to work with all necessary tools
Organization	- Keep an organized notebook - Keep an organized calendar of important dates
Independent Work	- Stay on task - Avoid disrupting the learning of others. - Do homework regularly and complete all assigned work - Review/study the work often
Collaboration	- Be a responsible group member. - Help your peers succeed by sharing ideas, tutoring and studying together - Prepare for labs as a team with a focus on each other's safety
Initiative	- Be active participants in the classroom - Ask questions when unsure of the material & seek extra help when needed. - Ensure that you get any missed handouts and catch up on missed work
Self-Regulation	- Set goals and make good choices regarding academic success. - Respect yourself, classmates and teachers.

Assessment and Evaluation

The primary purpose of assessment and evaluation is to improve student learning. Assessment can take on one of three forms (described below). In accordance with *Growing Success*, a student's most recent and consistent work will be taken into account.

Diagnostic	Assessment FOR learning determines how learning should proceed at the beginning of a unit.
Formative	Assessment AS learning provides feedback for a student to determine where improvement is needed. An example of this is homework.
Summative	Assessment OF learning evaluates what a student has learned at the conclusion of a unit/course. Examples include tests, quizzes, assignments and labs.

Evaluation of student achievement will be defined by four broad **Achievement Categories** (described below). The category weighting for semester work is shown.

Semester Work		70%
Knowledge & Understanding	Specific content acquired in the course and the comprehension of its meaning and significance.	25%
Thinking & Investigation	The use of critical and creative thinking skills and inquiry, research, and problem-solving skills.	25%
Communication	The conveying of meaning through various forms.	25%
Application	The use of knowledge and skills to make connections within and between various contexts.	25%
Exam 20% + Culminating 10%		30%

Overall Course Expectations

A. SCIENTIFIC INVESTIGATION SKILLS AND CAREER

EXPLORATION Throughout this course, students will:

- demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analyzing and interpreting, and communicating);
- 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.

B. BIOLOGY: SUSTAINABLE ECOSYSTEMS

- Ecosystems are dynamic and have the ability to respond to change, within limits, while maintaining their ecological balance.
- People have the responsibility to regulate their impact on the sustainability of ecosystems in order to preserve them for future generations.



By the end of this course, students will:

- assess the impact of human activities on the sustainability of terrestrial and/or aquatic ecosystems, and evaluate the effectiveness of courses of action intended to remedy or mitigate negative impacts;
- investigate factors related to human activity that affect terrestrial and aquatic ecosystems, and explain how they affect the sustainability of these ecosystems;
- demonstrate an understanding of the dynamic nature of ecosystems, particularly in terms of ecological balance and the impact of human activity on the sustainability of terrestrial and aquatic ecosystems.

C. CHEMISTRY: CHEMICAL REACTIONS

- Elements and compounds have specific physical and chemical properties that determine their practical uses.
- The use of elements and compounds has both positive and negative effects on society and the environment.



By the end of this course, students will:

- assess social, environmental, and economic impacts of the use of common elements and compounds, with reference to their physical and chemical properties;
- investigate, through inquiry, the physical and chemical properties of common elements and compounds;
- demonstrate an understanding of the properties of common elements and compounds, and of the organization of elements in the periodic table.

D. EARTH AND SPACE SCIENCE: THE STUDY OF THE UNIVERSE

- Different types of celestial objects in the solar system and universe have distinct properties that can be investigated and quantified.
- People use observational evidence of the properties of the solar system and the universe to develop theories to explain their formation and evaluation.
- Space exploration has generated valuable knowledge but at enormous cost.

By the end of this course, students will:

- assess some of the costs, hazards, and benefits of space exploration and the contributions of Canadians to space research and technology;
- investigate the characteristics and properties of a variety of celestial objects visible from Earth in the night sky;
- demonstrate an understanding of the major scientific theories about the structure, formation, and evolution of the universe and its components and of the evidence that supports these theories.

E. PHYSICS: THE CHARACTERISTICS OF ELECTRICITY

- Electricity is a form of energy produced from a variety of non-renewable and renewable sources.
- The production and consumption of electrical energy has social, economic, and environmental implications.
- Static and current electricity have distinct properties that determine how they are used.



By the end of this course, students will:

- assess some of the costs and benefits associated with the production of electrical energy from renewable and non-renewable sources, and analyze how electrical efficiencies and savings can be achieved, through both the design of technological devices and practices at home;
- investigate, through inquiry, various aspects of electricity, including the properties of static and current electricity, and the quantitative relationships between potential difference, current, and resistance in electrical circuits;
- demonstrate an understanding of the principles of static and current electricity.