Science 1D Canterbury High School

Ottawa-Carleton District School Board

Science Department

Semester I – 2010 / 11 – Course Outline

Course Title: Grade 9 academic science	**Grade Level: Academic**
Course Code: SNC1D	**Credit Value: 1.0**
Prerequisite: None	

Teachers: Mrs. Tomlinson Mr. Wade Ms. Anderson Mr. Moore Ms. Caiger-Watson

Course Overview 110 hours

This course enables students to develop their understanding of basic concepts in biology, chemistry, earth and space science, and physics, and to relate science to technology, society, and the environment. Throughout the course, students will develop their skills in the processes of scientific investigation. Students will acquire an understanding of scientific theories and conduct investigations related to sustainable ecosystems; atomic and molecular structures and the properties of elements and compounds; the study of the universe and its properties and components; and the principles of electricity.

Strands:

- **Biology**
- **Chemistry**
- **Earth and Space Science**
- **Physics**

Course Expectations

Chemistry: Atoms, Elements and Compounds (Unit One)

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.

Biology: Sustainable Ecosystems (Unit Two)

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.

Physics: The Characteristics of Electricity (Unit Three)

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 analyse how electrical efficiencies and savings can be achieved, through both the design of technological devices and practices in the 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.

Earth and Space Science: The Study of the Universe (Unit Four)

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.

Units of Study

In grade 9 academic science, each strand will be a unit of study. The units of study are:

- Chemistry: Atoms, Elements and Compounds
- Biology: Sustainable Ecosystems
- Physics: The Characteristics of Electricity
- Earth and Space Science: The Study of the Universe

Teaching Strategies

teacher demonstrations	small group work
laboratory experiments	student-teacher conferencing
multimedia	written assignments
investigative research	hands-on activities

Assessment and Evaluation Strategies

written tests	rubrics
lab reports	group presentations
observation (formal and informal)	discussion
homework checks and quizzes	research projects
summative assignment	exam

Evaluation Summary

Knowledge and Understanding	25 %
Thinking, Inquiry & Problem Solving	25 %
Communication	10 %
Making Connections	10 %
Summative Evaluation	10 %
Final Examination	20 %

Please refer to the achievement chart for science in the ministry curriculum documents for more information.

References

www.edu.gov.on.ca/eng/curriculum/secondary/science910curr.pdf

Student Resources / Texts
SciencePower9, McGraw-Hill Ryerson, replacement cost $83.35 + tax and shipping.