NORTH TORONTO COLLEGIATE INSTITUTE

Science, Grade 9, Academic (SNC1D)

COURSE DESCRIPTION

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.

Prerequisite: None

OVERALL EXPECTATIONS

Unit 1 - Chemistry: Atoms and Elements, and Compounds

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.

Unit 2 - Biology: Sustainable Ecosystems

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.

Unit 3 - Physics: The Characteristics of Electricity

By the end of this course, students will:

- Assess some of the costs and benefits associated with the productions 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 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.

Unit 4 - Earth and Space Science: The Study of the Universe

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 the evolution of the universe and its components and the evidence that supports these theories.

TEXT: *ON Science 9*, McGraw-Hill Ryerson, 2009 (Replacement cost: $72.05)

ASSESSMENT & EVALUATION

Assessment is the process of gathering information (formally and informally) from a variety of sources (including assignments, day-to-day observations, conversations/conferences, demonstrations, projects, lab performances, group work, and tests & quizzes) that accurately reflects how well a student is achieving the curriculum expectations in a course. This information helps teachers identify students' strengths and weaknesses in their achievement of the curriculum expectations, as well as, guide immediate and future instruction. As part of the assessment process, teachers will provide students with timely and descriptive feedback to facilitate improvement. **Evaluation** refers to the process of judging the quality of student work on the basis of established criteria, and assigning a value to represent that quality.

Achievement Chart:
All student work will be assessed and evaluated in balanced manner with respect to the four categories outlined on the Ministry's Achievement Chart for science: **Knowledge & understanding (K/U), Thinking and Investigation (T/I), Communication (C), and Application (A).**

Students will be given a numerical grade at the end of the course. The mark will be calculated according to the following breakdown: The final grade for this course will be determined as follows**:**

- **70%** of the grade will be based upon evaluations conducted throughout the course. This portion of the grade will reflect the student's most consistent level of achievement throughout the course, although special consideration will be given to more recent evidence of achievement.

- **30%** of the grade will be based on a summative evaluation administered at the end of the course. This final evaluation will be based on an evaluation of achievement from all four categories of the Achievement Chart.

Items	**Percentage Weightings (approximates)**		
	Term 1 Report Card	Interim Report Card #2	Final Report Card
Term Evaluation (70%)			
Lab Performance - Lab reports & practical skills *(K/U, T/I, C, A)*	30	35	25
Tests/Quizzes ***(K/U, T/I, C, A)***	30	35	25
Assignments/Projects ***(K/U, T/I, C, A)***	10	15	10
December Exam ***(K/U, T/I, C, A)*** (Chemistry & Earth/Space Science)	30	15	10
Summative Evaluation (30%)			
Physics & Ecology Practical Exam ***(K/U, T/I, C, A)***	N/A	N/A	10
June Written Exam ***(K/U, T/I, C, A)***	N/A	N/A	20

Learning Skills

The 6 learning skills and work habits – *Responsibility, organization, independent work, collaboration, initiative, self regulation*- play a crucial role to the achievement of the curriculum expectations in science. Students will work independently on many assigned tasks and will also have frequent opportunities to work with partners and in groups as they perform experiments and other classroom activities. They are encouraged to:

a) Come to class prepared with writing materials, notebooks (3-ring binder), textbook, course handouts, calculators, etc.

b) Maintain an organized notebook and healthy work-habits by completing homework on a daily basis;

c) Complete and hand in assigned work on time and with care; and d) seek extra help when needed and/or take other initiatives to further facilitate their learning.

ATTENDANCE/MISSED EVALUATION

- Classroom **attendance** and **punctuality** are of the utmost importance. There is a lot of material to cover and any late arrivals or poor attendance will certainly hinder achievement in this course. If you know you are going to miss a class, please inform the teacher as early as possible.

- **YOU** are responsible for obtaining and completing any notes, tests, quizzes, assignments, and any other classroom activities missed during ANY absences from class.

- All assigned work must be completed and submitted on time. A reasonable extension may be granted if, prior to the due date, the student and teacher negotiate a new submission date. Failure to submit an assignment on the due date will result in a 10% penalty. Assignments, including lab reports will **not** be accepted after they have been discussed, marked or returned to the class. Failure to complete major cumulative tasks within established timelines, without a legitimate reason, will result in a mark of ZERO.

- If you have a *legitimate reason* for missing an evaluation, you must report to your teacher ***before school,*** the first day you return, in order to make alternate arrangements.

- All work must be your own. For some lab reports, each individual may be required to submit their own, original lab report, even if the lab was done in a group. Any student who plagiarizes work or allows their work to be copied by another student will **receive a mark of ZERO for that activity.**

Approximate Time-Lines

Unit	**Time**	**End of Unit Evaluation** (Written/Practical Tests)
Measurement	Sept 6 – 3rd week in Sept	Sept 19 – 23
Atoms, Elements, and Compounds	3rd week in Sept – 2nd week in Nov	Nov. 8 – Nov. 12
The study of the Universe	(3rd week in Nov- 1st week in Dec)	Dec. 5th - Dec. 8th
The characteristics of electricity	Jan – mid March	Mar 19 – March 23
Sustainable ecosystems	4th week in March – 1st week in June	Week of June 4th

Need Extra Help?

Teacher's Location & Contact Information:	Room 435 or 428 karen.johnson@tdsb.on.ca 416-393-9180 Ext 20095
Teacher's Office Hours: (for extra help)	Am (before school) 7:45 am, lunch time, after school (by appointment)