St. Lawrence Secondary School
SCIENCE Course Outline

Course Code: SNC 1DO
Credit Value: One credit
Teacher: Mr. J. Marshall

Course Level: Academic
Pre-requisite: Grade 8 Science

Information regarding the course may be found at the following websites: ***mr-marshall.ca***

GOALS OF THE SCIENCE PROGRAM

Every course in the secondary science program focuses on the following three goals.

1. to relate science to technology, society, and the environment
2. to develop the skills, strategies, and habits of mind required for scientific inquiry
3. to understand the basic concepts of science

These goals are reflected within each strand to assess and evaluate student achievement in science.

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.

UNITS OF STUDY *(order of delivery may vary)*

Unit 1	Biology: Sustainable Ecosystems	~ 20 classes
Unit 2	Chemistry: Atoms, Elements and Compounds	~ 20 classes
Unit 3	Earth & Space Science: The Study of the Universe	~ 20 classes
Unit 4	Physics: The Characteristics of Electricity	~ 20 classes

CONTACTING THE INSTRUCTOR

I may be reached at the school at 933-8410 as well as by e-mail at: **jason.marshall@ucdsb.on.ca**.

ASSESSMENT & EVALUATION

Methods of assessing and evaluating students will be in the form of quizzes, tests, laboratory investigations, class presentations, in-class assignments and projects, a culminating activity and a final exam.

Final Grade Determination

Term Work (Tests, Labs, Assignments)	70%	Culminating Activity	10%	30%
		Final Exam	20%	

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OVERALL EXPECTATIONS and BIG IDEAS

Part of the Ministry of Education's revised Science Curriculum is the concept of "Big Ideas". The Big Ideas of any course are the broad, important understandings that students should retain long after they have forgotten many of the details of what they have studied in the classroom. The Big Ideas, along with the Overall Expectations, for this course are listed here.

Unit	Overall Expectations	Big Ideas
Biology **Students will:**	**B1.** 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; **B2.** investigate factors related to human activity that affect terrestrial and aquatic ecosystems, and explain how they affect the sustainability of these ecosystems **B3.** 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	• 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.
Chemistry **Students will:**	**C1.** assess social, environmental, and economic impacts of the use of common elements and compounds, with reference to their physical and chemical properties **C2.** investigate, through inquiry, the physical and chemical properties of common elements and compounds **C3.** demonstrate an understanding of the properties of common elements and compounds, and of the organization of elements in the periodic table	• 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.
Earth & Space Science **Students will:**	**D1.** assess some of the costs, hazards, and benefits of space exploration and the contributions of Canadians to space research and technology **D2.** investigate the characteristics and properties of a variety of celestial objects visible from Earth in the night sky **D3.** 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	• 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 evolution. • Space exploration has generated valuable knowledge but at enormous cost.
Physics **Students will:**	**E1.** 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 **E2.** 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 **E3.** demonstrate an understanding of the principles of static and current 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

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ROLES AND RESPONSIBILITIES IN THE SCIENCE PROGRAM

STUDENTS

Students have many responsibilities with regard to their learning, and these increase as they advance through secondary school. *Students who are willing to make the effort required and who are able to monitor their thinking and learning strategies and apply themselves will soon discover there is a direct relationship between their effort and their achievement.* Students need to understand that problem solving of any kind often requires a considerable expenditure of time and energy and a good deal of determination. Character Education is an important part of achieving success in the classroom and beyond; as such students are encouraged to use the eight virtues of Character Education (Caring, Empathy, Fairness, Honesty, Perseverance, Resilience, Respect, and Responsibility) in their thought processes and actions.

In order to achieve success in the Science program, students will develop and refine their investigation skills, their problem-solving skills, their critical and creative thinking skills and their communication skills. Students are required to have a sincere commitment to work and to the development of appropriate Learning Skills (Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self-Regulation).

Students also have a responsibility to know and understand all Health and Safety precautions which will be outlined and demonstrated by the classroom teacher. All students are expected to model all safety practices at all times when in the science laboratory, thus ensuring personal safety and the safety of others.

PARENTS/GUARDIANS

Students perform better in school if their parents/guardians are involved in their education. Effective ways in which parents/guardians can support their children's learning include, but are not limited, to the following:

- Ensuring their children arrive to class with the necessary materials.
- Ensuring their children complete all assigned work.
- Encouraging their children to review notes and concepts to help reinforce their understanding and ensure that synthesis of learning has occurred.
- Encouraging their children to seek help from the teacher at the first sign of struggle. Early clarification and support reduces the likelihood of increased gaps in learning.
- Supporting the school's character education philosophy and the criteria of the learning skills by modeling the eight virtues and encouraging their children to demonstrate these positive behaviours consistently at home.
- Encouraging their children arrive at school prepared to participate safely in activities (i.e. wearing closed-toe shoes, tying back long hair, and removing or taping down loose jewellery and Medic Alert bracelets).
- Contacting the teacher regularly to promote open two way communication between the home and school, so the teacher can employ strategies to best support their children.
- Attending parent-teacher interviews and school council meetings.

TEACHERS

Teachers are responsible for developing appropriate instructional strategies to help students achieve curriculum expectations, as well as appropriate methods for assessing and evaluating student learning. Teachers bring enthusiasm and varied teaching and assessment approaches to the classroom, addressing individual students' needs and ensuring sound learning opportunities for every student. Using a variety of instructional, assessment, and evaluation strategies, teachers provide numerous hands-on opportunities for students to discover fundamental concepts through inquiry, exploration, observation and research. Teachers encourage students to investigate, to reason, to explore alternative solutions, and to take the risks necessary to become successful problem solvers and life-long learners. Teachers will embed the eight virtues of character education into their daily lessons and will model appropriate behaviours for their students.

Teachers are also responsible for ensuring the safety of students during classroom activities and for encouraging and motivating students to assume responsibility for their own safety and the safety of others. Teachers also ensure that students acquire the knowledge and skills needed for safe participation in science activities.

THE IMPORTANCE OF EVALUATION

The 70% term mark will be determined by the student's achievement of the Ontario Ministry of Education's Science Curriculum for SNC 1DO.

Each evaluation task is a critical component of a student's term mark and it is therefore imperative that students participate in and complete every evaluation. For students who fail to complete an evaluation, a contract (see attached) will be put in place. This contract will renegotiate the date of completion for that evaluation piece or an alternate piece that addresses the same expectations, and will be done in consultation with the student and the parent / guardian. Students who then fail to meet the conditions of the contract may be putting their term mark in jeopardy, i.e. Level R (40), which is indicative of one or more overall expectations that have not been met to a minimum of Level 1, or Level R- (20), which is indicative of insufficient evidence of essential learning in order to demonstrate one or more overall expectations to a minimum of Level 1.

Evaluation tasks that are not submitted by the due date may be subject to penalty.

As a part of the contract, students may be required to complete outstanding evaluations during lunch time. Students will be permitted to bring their lunch with them as they work to complete the evaluation task. If necessary, additional school strategies may be implemented to support student learning and ensure all opportunities to demonstrate course expectations are met.

In order to properly prepare students for the evaluation of overall expectations, they will be presented with multiple assessment opportunities to demonstrate prior learning of specific and overall expectations from the Ontario Ministry of Education's Science Curriculum for SNC 1DO.

REPORTING ON DEMONSTRATED LEARNING SKILLS

The report card provides a record of the Learning Skills (see attached chart) demonstrated by the student in every course, in the following six categories: Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self-Regulation. The Learning Skills are evaluated using a four-point scale (E–Excellent, G–Good, S–Satisfactory, N–Needs Improvement). The separate evaluation and reporting of the Learning Skills in these six areas reflects their critical role in students' achievement of the curriculum expectations.

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LEARNING SKILLS CHART

Learning skills are grouped under the following six headings: Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self-Regulation. For each of these six categories of learning skills, a checklist of sample behaviours is provided.

Responsibility

The student:

- fulfilling responsibilities and commitments within the learning environment
- completing and submitting class work, homework, and assignments according to agreed-upon timelines
- taking responsibility for and managing own behaviour
- putting forth consistent effort with assessment and evaluation tasks
- showing attention to detail in producing quality work

Organization

The student:

- prioritizing work when faced with a number of tasks
- devising and following a coherent plan to complete tasks
- following specific steps to reach goals or to make improvements
- using appropriate information technologies to organize information and tasks
- arriving on time, with required notes, equipment and resources

Independent Work

The student:

- using prior knowledge or experiences to solve problems and making decisions
- demonstrating perseverance in bringing tasks to completion
- independently monitoring, assessing, and revising plans to complete tasks and meet goals
- using class time appropriately to complete tasks
- following instructions with minimal supervision

Collaboration

The student:

- working willingly and cooperatively to build healthy peer-to-peer relationships through personal and media-assisted interactions
- accepting various roles such as motivating and encouraging others to participate and taking on an equitable share of the work
- listening actively without interrupting and responding with respect, empathy and sensitivity to the needs of others
- paraphrasing points of view and asking questions to clarify meaning and to promote understanding
- sharing information, resources, and expertise and promoting critical thinking to solve problems and make decisions

Initiative

The student:

- looking for and acting on new ideas and opportunities for learning
- demonstrating the capacity for innovation and a willingness to take risks
- demonstrating curiosity and interest in learning
- approaching new tasks with a positive attitude
- recognizing and advocating appropriately for the rights of self and others to seek assistance when needed and utilizing appropriate supports

Self-Regulation

The student:

- setting own individual goals and monitoring progress towards achieving them
- seeking clarification or assistance when needed
- assessing their own strengths, needs and interests
- identifying learning opportunities, choices and strategies to meet personal needs and achieve goals
- persevering and making an effort when responding to challenges

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CLASSROOM EXPECTATIONS

1. **Do Your Best.** This means attending classes, paying attention, doing your homework, asking questions for clarification, behaving respectfully and taking responsibility for your own academic success.

2. **Be Present.** Due to the density of material taught in this course, you are strongly encouraged to participate fully in every class. If you are absent, you are responsible for catching up on missed notes or handouts.

3. **Be Punctual.** Being late hinders your ability to learn effectively and disrupts the learning of others. If you are late, you must take responsibility for the work you have missed. Students who are late may be assigned a 5 minute detention immediately after class, unless they are late for the last period of the day and will serve their detention after class on the following day.

4. **Be Ready to Learn.** Bring all of the following required materials to class every day: binder, paper, pen, pencil, textbook (if applicable), eraser, and scientific calculator. Leave distractive elements (cell phones, iPods, mp3 players, etc) in your locker.

5. **Be Safe.** Backpacks, coats, food and drink *(except water)* are not permitted in class. Personal music listening devices will not be permitted in class. Refer to Lab Safety Rules handout distributed in class for further details.

6. **Be Productive.** This means:
   - Stay in class. To maximize student learning, students will not be permitted (unless in emergency or for health reasons) to leave the room during a lesson to go to the washroom, get a drink of water, etc. Only after the lesson is complete will permission be granted.
   - Use class time to your advantage. Class time that is not being used for instruction or completion of labs is to be used to complete the assigned class work/homework or review previous concepts.
   - Respect the learning environment. Use proper language. Refrain from chatting while others are speaking or asking questions.
   - Minimize distractions. Please do not bring cell phones or mp3 players to class; if you do bring such items to class it is to be <u>OFF and should not be visible at any time</u>. This means that students cannot use them as calculators, telephones, cameras, game consoles or for any other purpose during class time unless permission is granted by the classroom teacher. *Laptops will only be permitted if specified in your IEP.*

7. **Seek Extra Help.** If you are struggling with any concept in this course, ask for help. Extra help sessions will available during lunch time on dates which will be announced in class. If you require help outside of the designated times (after school, during additional lunch periods), please see the teacher to set-up extra help sessions.

8. **Tests and other Evaluations.** There will be at least one week's advisement of upcoming tests or assignments. You are to be prepared to write the test or submit the assignment <u>on that date during the class time allotted</u>. If you follow the classroom expectations outlined above, you will be prepared for tests. There will always be at least one review period prior to the test date. You must learn to organize your time so you are prepared for the test on the assigned date, regardless of the other commitments you have (e.g. sports, job, other tests and assignments). If you will be absent on a test date you must make the appropriate arrangements with the classroom teacher.

9. **Assessments.** You will have many opportunities to receive feedback on your learning in the form of homework checks, quizzes, assignments and labs. These assessment items will not factor into your overall mark in the course. However, you are strongly encouraged to submit all items for assessment in order to learn from the feedback provided, and to prepare more thoroughly for evaluations (tests, assignments, formal lab reports, etc.).

10. **Culminating Activities.** These are major evaluation items that must be submitted on the assigned due date. A completion contract will be implemented if you do not respect due dates.

11. **Accommodations and Alternate Learning Environments**. All students have unique patterns of learning. The classroom teacher will ensure that students who require instructional, environmental or assessment accommodations (i.e. students with IEPs, English Language Learners, First Nations students, etc.) will have these supports put in place to ensure an accurate measure of the student's skills and knowledge.

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Completion Contract for Outstanding Evaluation Tasks

Student Name:	
Teacher Name: Mr. J. Marshall	Course Code: SNC 1D
Name of Evaluation Task:	
Description of Evaluation Task:	
Overall Expectation(s) Addressed:	
Original Due Date:	
Renegotiated Due Date:	
Accommodations made to Evaluation Task:	

Student Signature: _____ Date: _____

Parent / Guardian Signature: _____ Date: _____

Teacher Signature: _____ Date: _____

**** Students who do not fulfill the conditions of the Completion Contact understand that they will receive a "NO MARK" for this evaluation task which may put their term mark in jeopardy,** i.e. Level R (40), which is indicative of one or more overall expectations that has not been met to a minimum of Level 1, or Level R- (20), which is indicative of insufficient evidence of essential learning in order to demonstrate one or more overall expectations to a minimum of Level 1. ******

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REFERENCING IN SCIENCE

There are two basic referencing styles – MLA and APA – and many versions within each of these two styles. I encourage you to choose a consistent referencing style, regardless of the subject area. In science, we generally use a style very closely related to APA, developed by the **Council of Science Editors**, called **CSE**. This is the Name-Year format.

There are two types of citations….In-Text and Bibliographic. **You must have BOTH types of references in any report you submit.**

1. Books

Bibliography:
McCormac J.S., Kennedy G. 2004. Birds of Ohio. Auburn (WA): Lone Pine. p. 77-78.

In-Text:
(McCormac and Kennedy 2004)

2. Web Sites

IN GENERAL…

- **Provide sufficient information** to allow a reader to locate the source you are citing.
- **Web documents share many elements found in print sources**. The citation for a Web document often follows a format similar to that for print, with some information omitted and some added.
- **Cite what is available** when you cannot find some elements of information about a source. For example, publication dates may not be provided for some online information sources.
- **Include the date that you accessed the source**.
- **Cite the address (URL) accurately**. If it is necessary to divide the URL between two lines, break only after a slash mark and do not insert a hyphen at the break.

Web Page (With No Author Listed)

Bibliography:
Emerald Ash Borer (EAB) [Internet]. [updated 2007 Feb 27]. Columbus (OH): Ohio Department of Natural Resources, Division of Forestry; [cited 2007 Jul 24]. Available from: http://www.dnr.state.oh.us/forestry/health/eab.htm

In-Text:
(Emerald Ash Borer ... [updated 2007])

FOR ADDITIONAL REFERENCE MATERIALS, SEE
http://library.osu.edu/sites/guides/csegd.php#otherfive
or
http://www.lib.uoguelph.ca/assistance/writing_services/components/documents/CSE.pdf

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COMMUNICATION WITH PARENTS / GUARDIANS

Dear Parents/Guardians,

I look forward to being a partner with you to ensure your child's successful completion of this course (SNC1D). I expect that your son/daughter will attend all classes, catch up on missed work and submit all assignments on time. I believe that you and I can work together to encourage our students to develop a strong sense of internal motivation and self-discipline.

Throughout the semester, please feel free to contact me at any time. You can contact me by calling the school at (613) 933-8410 or by emailing me at **jason.marshall@ucdsb.on.ca**. Through email, I can easily and efficiently provide you with information that is relevant to you and your child, including assignments and progress reports.

The following additional types of communication will be provided to you to guide your child's progress throughout the semester: Progress Report (4th or 5th week), Parent/Teacher Interviews (5th or 6th week), Mid-term Report Card (11th or 12th week), and Final Report Card.

Please sign and date this letter to show that you have read it, as well as the accompanying course outline, and if applicable provide an email address that you access regularly on the space provided below. If you have any concerns, please communicate them to me on the back of this letter.

Thank you in advance for your participation and support in your child's education this semester.

Sincerely,
Jason Marshall

Please complete and return this form.
If you have an email address please send an email to ***jason.marshall@ucdsb.on.ca*** with your name and your student's name.

_____
STUDENT NAME

_____ _____ _____
Parent /Guardian Name **(please print)** Signature Date

Methods of Communication:

- Email: _____
  (provide current email address)

- Phone: _____ ❒Home ❒ Cell ❒ Work
  Convenient times to call (circle all that apply): anytime morning afternoon evening other: _____

- Phone: _____ ❒Home ❒ Cell ❒ Work
  Convenient times to call (circle all that apply): anytime morning afternoon evening other: _____

- Phone: _____ ❒Home ❒ Cell ❒ Work
  Convenient times to call (circle all that apply): anytime morning afternoon evening other: _____

***** Please place an asterisk (*) beside your preferred method of communication *****