SNC1W - Science, Grade 9 (De-streamed)

Credit Value: 1.0

Prerequisite: None

Department: Science	Teacher: Ms. Iozzo
Course Description:	This course enables students to develop their understanding of concepts related to biology, chemistry, physics, and earth and space science, and to relate science to technology, society, and the environment. Throughout the course, students will develop and refine their STEM skills as they use scientific research, scientific experimentation, and engineering design processes to investigate concepts and apply their knowledge in situations that are relevant to their lives and communities. Students will continue to develop transferable skills as they become scientifically literate global citizens.

Unit Title	Unit Name	Time Allocation
1	**Chemistry: Atoms, Elements and Compounds** ***Description:*** Everything around us is made up of matter—and matter is made up of atoms. This unit introduces you to the structure of atoms, the organization of the periodic table, and how elements combine to form compounds. You'll discover how chemical reactions work and why these tiny particles are so important in our world. ***Summative Evaluation:*** *Density Graphing Assignment, Chemistry Quiz, Chemistry Unit Test*	30 hours
2	**Physics: The Characteristics of Electricity** ***Description:*** Electricity powers much of our daily lives, from lights and phones to transportation and beyond. In this unit, you'll investigate how electric circuits function, the role of current and voltage, and how electricity is generated and used. You'll also learn about safety, efficiency, and the impact of different energy sources. ***Summative Evaluation:*** *Electricity Generation Project, Series and Parallel Circuits & Lab, Physics Unit Test*	30 hours
Midterm		
3	**Biology: Sustainable Ecosystems** ***Description*:** In this unit, you'll explore how living organisms interact with each other and their environment. You'll learn how energy flows through food chains, how ecosystems stay balanced, and how human activities can impact nature. We'll also look at ways we can help support and protect our environment for future generations.	25 hours

	Summative Evaluation**:** *Biome- Ecosystems Food Web Assignment, Ecology Unit Test*	
4	**Space: The Study of the Universe** ***Description:*** Take a journey beyond Earth as we explore the wonders of space. This unit covers the life cycle of stars to the structure of galaxies and our place in the universe. You'll learn about the solar system, the Big Bang theory, and how scientists study objects that are millions of light-years away. ***Summative Evaluation:*** *Phases of the Moon Lab, Space Review & Quiz, Space Presentation*	15 hours
CPT	**Culminating Performance Task**	10 hours
Total Hours		**110 hours**

Assessment & Evaluation:

Category Weightings	Weight
Knowledge	25%
Thinking	25%
Application	25%
Communication	25%

Final Summative Assessments	Grade Distribution
Term Work	70%
CPT	30%

Overall Curriculum Expectations:

Curriculum Policy Document: https://www.dcp.edu.gov.on.ca/en/curriculum/secondary-science/courses/snc1w/strands	
A. STEM SKILLS, CAREERS, AND CONNECTIONS	
A1.	**STEM Investigation Skills:** apply scientific processes and an engineering design process in their investigations to develop a conceptual understanding of the science they are learning, and apply coding skills to model scientific concepts and relationships
A2.	**Applications, Careers, and Connections**: analyse how scientific concepts and processes can be applied in practical ways to address real-world issues and in various careers, and describe contributions to science from people with diverse lived experiences
B. BIOLOGY: SUSTAINABLE ECOSYSTEMS AND CLIMATE CHANGE	
B1.	**Relating Science to Our Changing World:** assess impacts of climate change on ecosystem sustainability and on various communities, and describe ways to mitigate these impacts

B2.	**Investigating and Understanding Concepts:** demonstrate an understanding of the dynamic and interconnected nature of ecosystems, including how matter cycles and energy flows through ecosystems
C. CHEMISTRY: THE NATURE OF MATTER	
C1.	**Relating Science to Our Changing World:** assess social, environmental, and economic impacts of the use of elements, compounds, and associated technologies
C2.	**Investigating and Understanding Concepts:** demonstrate an understanding of the nature of matter, including the structure of the atom, physical and chemical properties of common elements and compounds, and the organization of elements in the periodic table
D. PHYSICS: PRINCIPLES AND APPLICATIONS OF ELECTRICITY	
D1.	**Relating Science to Our Changing World:** assess social, environmental, and economic impacts of electrical energy production and consumption, and describe ways to achieve sustainable practices
D2.	**Investigating and Understanding Concepts:** demonstrate an understanding of the nature of electric charges, including properties of static and current electricity
E. EARTH AND SPACE SCIENCE: SPACE EXPLORATION	
E1.	**Relating Science to Our Changing World:** evaluate social, environmental, and economic impacts of space exploration and of technological innovations derived from space exploration
E2.	**Investigating and Understanding Concepts:** demonstrate an understanding of the components, characteristics, and associated phenomena of the solar system and the universe, and the importance of the Sun to processes on Earth

Focus on Learning Skills:

Responsibility	**Organization**	**Independent Work**	**Collaboration**	**Initiative**	**Self Regulation**
-Demonstrates accountability for their own learning and actions. -Follows through on commitments and deadlines. -Takes ownership of their learning and seeks help when needed.	-Establishes and maintains an organized system for materials and information. -Manages time effectively to meet deadlines and goals. -Demonstrates attention to detail.	-Works productively and efficiently without constant supervision. -Demonstrates self-motivation and takes initiative in completing tasks. -Shows resourcefulness in seeking solutions and finding information independently.	-Actively participates in group discussions and contributes ideas. -Demonstrates effective communication and listening skills through tasks. -Respects the opinions and perspectives of others, and works towards common goals.	-Takes proactive steps to enhance their learning and personal growth. -Seeks opportunities to go beyond requirements and explore new ideas. -Shows a willingness to take risks and embrace challenges.	-Follows instructions and guidelines effectively. -Manages time wisely and prioritizes tasks accordingly. -Demonstrates consistency and commitment in completing tasks.

Course Information

Instructional Approaches
This course incorporates instructional strategies aligned with the Ontario *Growing Success* document to ensure equitable, engaging, and effective learning for all students:

1. **Video-Based Lessons with Embedded Questions**
    - High-quality instructional videos serve as the core teaching tool.
    - Embedded questions within videos check comprehension, ensure active engagement, and provide formative feedback.
2. **Inquiry-Based Learning**
    - Virtual labs, simulations, and research tasks encourage students to explore scientific concepts and solve real-world problems.
    - Open-ended questions and experiments foster curiosity and critical thinking.
3. **Scaffolded Learning**
    - Assignments and projects are broken into smaller, manageable tasks with clear rubrics and success criteria.
    - Students are provided with templates, exemplars, and step-by-step instructions to guide their learning.
4. **Collaborative Learning Opportunities**
    - Online discussion boards allow students to engage with peers, share ideas, and provide constructive feedback.
    - Virtual group projects encourage collaboration and teamwork.
5. **Self-Directed and Flexible Learning**
    - Students work at their own pace within the course timeline. Weekly milestones ensure consistent progress.
    - Optional extension tasks provide opportunities for advanced exploration of topics.
6. **Digital Literacy Development**
    - Lessons integrate the use of digital tools to enhance research, data analysis, and multimedia project creation.
    - Emphasis is placed on safe and responsible use of technology.
7. **Culturally Responsive Teaching**
    - Curriculum resources reflect diverse contributions to science, including Indigenous knowledge and perspectives.
8. **Ongoing Feedback and Assessment**
    - Frequent formative assessments, such as quizzes and teacher feedback on assignments, help students track their progress.

Assessment & Evaluation:

At Ontario Education Online our focus is to enhance student learning through the use of the Ontario Secondary School Curriculum and in accordance with the Growing Success document. As students work through the course material, they will be assessed on assessment *for, of* and *as* learning.

> ***Assessment for*** learning will assist student learning for formative purposes. Examples of this include: Self-assessments, peer assessments, formative assessments (used in our video lessons),

teacher observations in the online tasks, descriptive feedback from our teachers, rubrics and goal setting.

Assessment as learning helps students to develop their metacognitive skills by encouraging them to reflect on their own learning and progress. Examples of this include: Self-reflections, discussion forums, video practice questions, rubrics, checklists, and conferencing.

Assessment of Learning is used to confirm that students have achieved curriculum outcomes and contribute directly to the students overall grade. Examples of this include: Quizzes, tests, essays, interactive projects, digital presentations and portfolios.

	Assessment For	Assessment As	Assessment Of
Amount	50	50	11
Examples	Embedded video questions, self-assessments, peer feedback, teacher-monitored discussion boards.	Reflective journals, self-evaluation checklists, participation in online discussions.	Lab reports, research projects, CPT, quizzes, and presentations.

Course evaluations are divided into two sections:

- Term (70% of overall grade)
- Culminating Performance Task (CPT) (30% of overall grade).

Class Requirements:

All required and supplemental reading are provided in the Google Classroom; no textbooks are required.

Online Classroom Behaviour/ Ethics

Respectful Communication: It is expected that students use respectful and appropriate language when interacting with teachers, administration and classmates. This includes refraining from using offensive, discriminatory, or disrespectful comments or engaging in such behavior. Active listening is encouraged, and students are urged to consider different perspectives before responding to foster constructive and inclusive discussions.

Professional Conduct: Students are required to dress appropriately and maintain a suitable learning environment during video tasks. This means dressing in a manner that reflects professionalism and creating a workspace free from distractions. Students are expected to be attentive and minimize any potential disruptions to maximize their engagement in the learning process. Demonstrating professionalism and courtesy in all online interactions, including with teachers and classmates, is crucial for fostering a respectful and collaborative academic community.

Attendance: Regular attendance is crucial for academic success. Students must participate consistently in their online courses to fully benefit from the learning experience. Attendance records will be maintained by the Principal and teachers, expecting students to log in regularly (at least one lesson completed per week). There is no fixed calendar due to the continuous entry and exit model, but all courses must meet the 110-hour requirement, taking approximately four months to complete. Students may complete the

course in as little as 4 weeks, and have a limit of 365 days. Attendance will be measured through assignment completion, video engagement, and class participation. Failure to complete a course within 12 months will result in automatic removal unless an extension is arranged. Parents/guardians should ensure regular attendance.

Cheating & Plagiarism: Plagiarism and cheating are serious offenses in our academic environment. Plagiarism involves using someone else's ideas or work without proper acknowledgment, submitting purchased or computerized material as one's own, or submitting the same work in multiple courses without permission. Cheating includes having others prepare or copy assignments. While AI can be used for generating ideas, submitting AI-generated work as one's own is not permitted and will constitute as plagiarism. Students must respect intellectual property and submit their own work. Acts of academic dishonesty will result in consequences, such as a 0% mark, suspension, or expulsion for repeated offenses. It is crucial to remain vigilant to prevent inappropriate use and maintain academic integrity.

Considerations for Program Planning

This course has been meticulously designed to ensure the success of all students as language learners. Quality instruction is pivotal in achieving this goal, and our teachers employ effective approaches, including respecting students' strengths, differentiating instruction, and providing opportunities for practice and application. This involves using assessment information to clarify learning purposes, and encouraging students to articulate their thinking processes.

Accommodations for Students with an IEP In an Online School:

Accommodations for this course will be determined through meetings with parents, teachers, administration; as well as, use of external educational assessments. Three types of accommodations may be provided: instructional, environmental, and assessment accommodations. Additional examples of accommodations and aids for this course include providing step-by-step instructions, helping students create organizers, permitting options for reading and writing tasks, providing advance reading materials, and offering enrichment opportunities.

Planning for English Language Learners

Acknowledging the linguistic diversity in Ontario schools, our teachers recognize the significance of orientation for English Language Learners (ELLs). They actively encourage the use of first languages at home, supporting the development of both oral fluency and literacy in English. Program adaptations and assessment accommodations are implemented, and there is a strong emphasis on fostering intercultural communication and respect for diverse backgrounds.

Antidiscrimination Education

At Ontario Education Online we prioritizes creating a safe, inclusive environment. This is achieved by promoting fairness, healthy relationships, and active citizenship. The curriculum reflects diversity in learning materials, encourages critical thinking on issues of discrimination, bullying, and violence, and utilizes literature and media to explore societal perspectives and challenges.

The Role of Technology

Information and communications technologies (ICT) play a crucial role in the curriculum at Ontario Education Online. They are integrated to enrich instructional strategies, support language learning, encourage responsible internet use, and connect students to global communities and resources. This incorporation of technology facilitates diverse approaches to learning, catering to individual student needs within the online learning environment. It's important to note that while accommodations are limited due

to the asynchronous nature of the school, efforts are made to ensure a supportive online learning experience.

Course Development Date: August 1, 2025
Course Reviser: Allegra Iozzo
Course Revision Date: August 20, 2025