PORT CREDIT S.S. COURSE OVERVIEW

SCIENCE DEPARTMENT

COURSE: Grade 9 SciTech Science **COURSE CODE**: SNC 1DR

OVERARCHING LEARNING GOALS

<table>
<tr><td colspan="2">Scientific Investigation and Skills and Career Exploration
● Demonstrate scientific investigation skills in four areas: initiating and planning, performing and recording, analysing and interpreting and communicating.
● Identify and describe a variety of Canadian contributions and careers related to relevant fields of science under study</td></tr>
<tr><td>Biology: Sustainable Ecosystems
● To investigate human impact factors on ecosystems and explain how they affect sustainability.
● To demonstrate an understanding of how ecosystems change in response to natural factors and human activity.</td><td>Chemistry: Atoms, Elements, and Compounds
● To assess the impacts of the use of common elements and compounds.
● To investigate the physical and chemical properties of common elements and compounds.
● To demonstrate an understanding of the organization of elements in the periodic table.</td></tr>
<tr><td>Earth and Space Science: The Study of the Universe
● To assess some hazards and benefits of space exploration and the contributions of Canadians to space research and technology.
● To explore the characteristics and properties of a variety of celestial objects visible from Earth in the night sky.
● To demonstrate an understanding of the major scientific theories about the evolution of the universe.</td><td>Physics: The Characteristics of Electricity
● To assess the costs and benefits of using electrical energy and propose a plan to reduce energy costs.
● To investigate the properties of static and current electricity and the cost of the consumption of electrical energy.
● To demonstrate an understanding of the concepts and principles of static and current electricity including Ohm’s Law.</td></tr>
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SUCCESS CRITERIA

Scientific Investigation and Skills and Career Exploration

- I can use appropriate terminology, symbols and units related to scientific concepts and processes.
- I can identify and use lab equipment correctly and safely.
- I can accurately collect, record, analyze and communicate lab results.
- I can identify variables and controls, and write procedures to investigate various science concepts.

Biology: Sustainable Ecosystems

- I can explore and assess the impact of human activity on the sustainability of a terrestrial and/or aquatic ecosystem.
- I can generate and interpret graphs to analyse various abiotic factors that affect populations in ecosystems.
- I can describe the processes of cellular respiration and photosynthesis, and how various biotic and abiotic limiting factors affect the carrying capacities of an ecosystem.

Chemistry: Atoms, Elements, and Compounds

- I can assess the hazards of some elements, and analyze the impact of the use of common substances.
- I can explore the properties and changes of common substances, and use them to identify unknown elements and compounds.
- I can describe the structure of the atom, and use diagrams, molecular models, and formulae to communicate the differences between atoms, elements and compounds.
- I can describe patterns in the arrangement of electrons in the first 20 elements of the periodic table and explain the relationship between atomic structure and positioning of elements on the periodic table.

Earth and Space Science: The Study of the Universe

- I can assess some of the contributions, hazards, and benefits related to space technology, research and exploration.
- I can compare and contrast properties of celestial objects visible from earth.
- I can describe the observational and theoretical evidence relating to the origin and evolution of the universe.
- I can describe major components of the solar system and the universe, and use scientific notation and terminology to communicate distances in space.

Physics: The Characteristics of Electricity

- I can assess the pros and cons of using various sources of electrical energy, calculate the cost of operating common devices and compare their efficiency.
- I can investigate the properties of static and current electricity.
- I can design, draw, construct and make measurements of simple series and parallel circuits.

ASSESSMENT & EVALUATION

TERM EVALUATION – 70%

Assessment and evaluation in this course will be based on provincial curriculum expectations. Evaluation throughout the course and the final evaluation will incorporate four broad categories:

Knowledge and Understanding	Thinking/ Inquiry	Communication	Application
-knowledge of content -understanding of content	-planning and performing lab investigations -problem solving, critical thinking processes and skills	-expression and organization of ideas and information -use of conventions and terminology	-making connections to society, technology and the environment -transfer of knowledge and skills to unfamiliar contexts

Students will also receive descriptive feedback as part of the learning process which may not be assigned a mark. More detailed information regarding the Port Credit Secondary School Assessment and Evaluation policy can be found in the Student Agenda.

FINAL EVALUATION – 30%

The final evaluation will consist of an in-class, practical culminating task and/or a formal written exam.

LEARNING SKILLS

The following learning skills will be taught and assessed throughout the course and rated on the report card:

***Responsibility**	***Independent Work**	***Initiative**
***Organization**	***Collaboration**	***Self-regulation**

These skills will not be included in the final numeric mark. However, it is important to remember that the development of these skills is critical to academic achievement and does have a direct bearing on the final mark.