

Sir John A. Macdonald Collegiate Institute Course Brief

Course Name	Grade 10 Academic Science	Grade	10
Course Code	SNC2D	Credit Value	1.0
Pre-Requisite	SNC1D1/8	Or Recommended Pre-Requisite	
Type of Course	Academic		

TEXTBOOKS: INVESTIGATING SCIENCE 10

REPLACEMENT COST (if lost or damaged): \$ 93.95

Course Description

This course enables students to enhance their understanding of concepts in biology, chemistry, earth and space science, and physics, and of the interrelationships between science, technology, society, and the environment. Students are also given opportunities to further develop their scientific investigation skills. Students will plan and conduct investigations and develop their understanding of scientific theories related to the connections between cells and systems in animals and plants; chemical reactions, with a particular focus on acid–base reactions; forces that affect climate and climate change; and the interaction of light and matter.

Curriculum Strands

Biology – Tissues, Organs, and Systems of Living Things

- evaluate the importance of medical and other technological developments related to systems biology, and analyse their societal and ethical implications;
- investigate cell division, cell specialization, organs, and systems in animals and plants, using research and inquiry skills, including various laboratory techniques;
- demonstrate an understanding of the hierarchical organization of cells, from tissues, to organs, to systems in animals and plants.

Chemistry – Chemical Reactions

- analyse a variety of safety and environmental issues associated with chemical reactions, including the ways in which chemical reactions can be applied to address environmental challenges;
- investigate, through inquiry, the characteristics of chemical reactions;
- demonstrate an understanding of the general principles of chemical reactions, and various ways to represent them.

Earth and Space Science – Climate Change

- analyse some of the effects of climate change around the world, and assess the effectiveness of initiatives that attempt to address the issue of climate change;
 - investigate various natural and human factors that influence Earth’s climate and climate change;
- demonstrate an understanding of natural and human factors, including the greenhouse effect, that influence Earth’s climate and contribute to climate change.

Physics – Light and Geometric Optics

- evaluate the effectiveness of technological devices and procedures designed to make use of light, and assess their social benefits;
- investigate, through inquiry, the properties of light, and predict its behaviour, particularly with respect to reflection in plane and curved mirrors and refraction in converging lenses;
- demonstrate an understanding of various characteristics and properties of light, particularly with respect to reflection in mirrors and reflection and refraction in lenses.

Assessment and Evaluation of Student Achievement

Unit	Unit Title	Evaluation Task	Achievement Chart Focus
Unit 1	Chemistry: Chemical Reactions	Chemistry Quiz Names and Formulas of Compounds Quiz Types of Reactions Lab Report Design Assignment (Identifying Variables) Teacher’s Choice Unit Test	K K T, C, A T, C A and/or C and/or K and/or T K, A
Unit 2	Biology: Tissues, Organs, and Systems of Living Things	Cell Lab Report Biology Quiz Social & Ethical Implications Assignment Design Assignment (Procedure for a Lab) Teacher’s Choice Unit Test	T, C, A K C T, C A and/or C and/or K and/or T K, A
Unit 3	Physics: Light and Geometric Optics	Mirror Lab Physics Quiz 1 (diagrams) Refraction Lab Physics Quiz 2 (problems) Design Assignment (Materials/Technology) Unit Test Teacher’s Choice	T K, C T, C, A K, A T, C K, A A and/or C and/or K and/or T
Unit 4	Earth and Space Science: Climate Change	Climatograph Assignment Modelling the Greenhouse Effect Lab Design Assignment (Data Analysis) Teacher’s Choice	T, C, A T, C T, C A and/or C and/or K and/or T

assessments and evaluations are subject to change

Levels of Achievement

For Grades 9 to 12, a student's achievement of the overall curriculum expectations will be evaluated in accordance with the achievement charts in the provincial curriculum and will be reported using percentage marks.

Achievement Level	Percentage Mark Range	Achievement Description
HL4/L4+ L4 LL4/L4-	95 – 100 87 – 94 80 – 86	Level 4 identifies achievement that surpasses the provincial standard. The student demonstrates the specified knowledge and skills with a high degree of effectiveness.
HL3/L3+ L3 LL3/L3-	77 – 79 73 – 76 70 – 72	Level 3 represents the provincial standard for achievement. The student demonstrates the specified knowledge and skills with considerable effectiveness. Parents of students achieving at level 3 can be confident that their children will be prepared for work in subsequent grades/courses
HL2/L2+ L2 LL2/L2-	67 – 69 63 – 66 60 – 62	Level 2 represents achievement that approaches the provincial standard. The student demonstrates the specified knowledge and skills with some effectiveness. Students performing at this level need to work on identified learning gaps to ensure future success.
HL1/L1+ L1 LL1/L1-	57 – 59 53 – 56 50 – 52	Level 1 represents achievement that falls much below the provincial standard. The student demonstrates the specified knowledge and skills with limited effectiveness. Students must work at significantly improving learning in specific areas, as necessary, if they are to be successful in the next grade/course

****Students who achieve below 50% have not met curriculum expectations; a credit will not be granted.****

Learning Skills	Assessment of Learning Skills
Responsibility Organization Independent Work Collaboration Initiative Self-Regulation	Excellent (E) Good (G) Satisfactory (S) Needs Improvement (N)

Weighting by Strands/Categories			
Knowledge and Understanding	34%	Communication	22%
Thinking	22%	Application	22%

Assessment and Evaluation Strategies: the following is a list of potential A/E strategies used within the course; the list may not be exhaustive and is subject to change

- Paper & pencil quizzes & tests
- Formal examination
- Practical lab performance
- Written assignment/projects
- Research presentations
- Library/Internet research projects
- Formal lab reports
- Scientific illustration
- Graphical analysis & presentation
- Portfolio assessment

CALCULATION OF FINAL MARK

→ 70% Term Work

→ 30% for a Culminating Activity