

Sir John A. Macdonald Collegiate Institute Course Brief

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|-----------------------|--------------------------|-------------------------------------|-----|
| Course Name | Grade 10 Applied Science | Grade | 10 |
| Course Code | SNC 2P1 | Credit Value | 1.0 |
| Pre-Requisite | SNC 1P1 or SNC 1D1 | Or Recommended Pre-Requisite | |
| Type of Course | Applied | | |

TEXTBOOKS

Science Links 10 (McGraw-Hill Ryerson)

REPLACEMENT COST (if lost or damaged)

\$ 94.95

Course Description

This course enables students to develop a deeper understanding of concepts in biology, chemistry, earth and space science, and physics, and to apply their knowledge of science in real-world situations. Students are given opportunities to develop further practical skills in scientific investigation. Students will plan and conduct investigations into everyday problems and issues related to human cells and body systems; chemical reactions; factors affecting climate change; and the interaction of light and matter.

Curriculum Strands

Biology: Tissues, Organs and Systems

- analyse some current technologies or substances that have an impact on human tissues, organs, or systems, and evaluate their effects on human health
- investigate cell division, cell specialization, and the organization of systems in animals, including humans, using various laboratory techniques
- demonstrate an understanding of the hierarchical organization of cells, from tissues, to organs, to systems in animals, including humans.

Chemistry: Chemical Reactions and Their Applications

- analyse how chemical reactions are employed in common products and processes, and assess the safety and environmental hazards associated with them
- investigate, through inquiry, the characteristics of simple chemical reactions
- demonstrate an understanding of simple chemical reactions and the language and ways to represent them.

Climate: Earth's Dynamic Climate

- analyse effects of human activity on climate change, and effects of climate change on living things and natural systems
- investigate various natural and human factors that have an impact on climate change and global warming
- demonstrate an understanding of various natural and human factors that contribute to climate change and global warming.

Physics: Light and Applications of Optics

- analyse how properties of light and colour are applied in technology and the impact of these technologies on society
- investigate, through inquiry, properties of light, and predict its behaviour in mirrors and as it passes through different media
- demonstrate an understanding of characteristics and properties of light, particularly with respect to reflection and refraction and the addition and subtraction of colour.

Assessment and Evaluation of Student Achievement

| Unit | Unit Title/Description | Evaluation Task | Achievement Chart Focus |
|--------|--|--|---------------------------------------|
| Unit 1 | Biology: Tissues, Organs and Systems | Cells Quiz Lab: Identifying Stages of Mitosis Lab: Identifying different Cell types Lab: Virtual Dissection Unit Test Teacher's Choice | K T T A,C K A,C,K,T |
| Unit 2 | Chemistry: Chemical Reactions and Their Applications | WHMIS Label Quiz: Naming Compounds Lab: Law of Conservation of Mass Quiz: Naming Acids and Bases Lab: Properties of Acids and Bases Unit Test Teacher's Choice | A C T C T K A,C,K,T |
| Unit 3 | Physics: Light and Applications of Optics | Quiz: Colour Theory and Plane Mirrors Lab: Mirrors Lab: Refraction Optical devices presentation Unit Test Teacher's Choice | K T,C T,C A K A,C,K,T |
| Unit 4 | Climate: Earth's Dynamic Climate | Lab: Greenhouse Effect (Pop Bottle) Lab: Ice Cubes and Thermohaline Circulation Climatograph Computer Lab: Carbon Footprint Calculator | T A C T |

| | | |
|--|------------------|---------|
| | Teacher's Choice | A,C,K,T |
|--|------------------|---------|

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 | 25 % | Communication | 25 % |
| Thinking | 25 % | Application | 25 % |

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% for evaluations conducted throughout the course
- 30% for culminating activities