

<b>Subject: BIOLOGY</b>		<b>Grade: 12</b>
<b>Date: Oc 27, 2022</b>	<b>Duration: 3HR</b>	<b>Lesson No:1</b>
<b>Unit: 1: INTRO TO SBI4U</b>	<b>Topic: SBI4U Intro And Career Exploration</b>	

**Overall Expectations** (*Directly from The Ontario Curriculum*)

- Knowledge of Career Exploration in Biology
- Ability to relate Science to Technology, Society, and the Environment
- knowledge and understanding of safe laboratory practices and procedures when planning investigations by correctly interpreting Workplace Hazardous Materials Information System (WHMIS) symbols
- Scientific Investigation Skills and effective Poster presentation of research topic.

**Specific Expectations** (*Directly from The Ontario Curriculum*)

A1.1 formulate relevant scientific questions about observed relationships, ideas, problems, or issues, make informed predictions, and/or formulate educated hypotheses to focus inquiries or research.

A1.4 apply knowledge and understanding of safe laboratory practices and procedures when planning investigations by correctly interpreting Workplace Hazardous Materials Information System (WHMIS) symbols; by using appropriate techniques for handling and storing laboratory equipment and materials and disposing of laboratory and biological materials (e.g., plants and invertebrates); and by using appropriate personal protection.

A1.8 synthesize, analyse, interpret, and evaluate qualitative and/or quantitative data to determine whether the evidence supports or refutes the initial prediction or hypothesis and whether it is consistent with scientific theory; identify sources of bias and/or error; and suggest improvements to the inquiry to reduce the likelihood of error.

A2.1 identify and describe a variety of careers related to the fields of science under study (e.g., scientific journalist, fisheries and wildlife officer, physician, infectious disease researcher, geneticist) and the education and training necessary for these careers

A2.2 describe the contributions of scientists, including Canadians (e.g., Evelyn Roden Nelson, Maude Menten, Albert Juan Aguayo, Kimberley J. Fernie, Michael Archer), to the fields under study

**Learning Skills** (*Where applicable*):

I should participate in the class discussion; collaborate with my teammate; take initiative to ask question if there is any and be organized all the time to utilized the class time effectively.

**Learning Goals** (*What do I want the students to know and/or be able to do?*)

Today you will be able to have:

- A clear understanding of SBI4U course syllabus and SBI4U road map
- Idea of SBI4U grading system; Teacher's expectation and class rules
- Knowledge of Career Exploration in Biology
- SBI4U Intro To Scientific Investigation And Lab Safety WHMIS

**Success Criteria**

By the end of class:

I should have a clear concept of **SBI4U** course content (how many units and overview of each units) ; be able to communicate on importance of Biology in our daily life and career options in Biology and career options in biomedical field.

**Materials and Resources**

**PPT-SBI4U WELCOME INTRO TO COURSE OUTLINE**

**PPT-SBI4U\_INTRO TO SCIENTIFIC INVESTIGATION AND LAB SAFETY WHMIS**

**CW-SBI4U-WHMIS Quiz**

**HW-Who Are You**

**SBI4U Course Outline**

**LESSON#0.1-SBI4U-TEA Daily Lesson Plan.doc**

**How to activate digital textbook access codes**

**Textbook:** Nelson Biology 12: Nelson Education Ltd. 2003

[www.mynelson.com](http://www.mynelson.com)

**Lesson Structure and Activities**

<b>Timing</b>	<b>Lesson</b>
<i>~20 minutes</i>	<p><b>Zoom class</b></p> <p><b>INTRODUCTION</b></p> <p>Attendance, pre-interview and concerns regarding specific student.            Observation: to identify the students needs extra care and help.            **Complete the Student information form</p>
<i>~25 minutes</i>	<p><b>LESSON</b></p> <ul style="list-style-type: none"> <li>• INTRODUCTION TO SBI4U</li> <li>• DISCUSSION OF COURSE CONTENT</li> <li>• CAREER EXPLORATION</li> </ul>
<i>~30 minutes</i>	<p><b>APPLICATION</b></p> <ul style="list-style-type: none"> <li>• GROUP DISCUSSION ON CAREER EXPLORATION (CLASS PARTICIPATION) (SHARE YOUR OPNION!!!)</li> </ul> <p>Research and Briefly describe the contributions of scientists, including Canadians.</p>
<i>~15 minutes</i>	<p><b>ASSIGN HOMEWORK</b></p> <p><b>“HW-Who Are You” (10 marks)</b></p>

~90 minutes	<p><b>Independent study</b></p> <p><b>Review:</b></p> <p><b>PPT-SBI4U_INTRO TO SCIENTIFIC INVESTIGATION AND LAB SAFETY WHMIS</b></p> <p><b>Activity#1:</b> Brainstorming: What is Scientific Investigation and why should we need it?</p> <p><b>Activity#2:</b> List down possible hazard in Lab.</p> <p><b>Activity#3:</b> Flask Card identification challenge (Sign and Symbol of Safety from WHMIS list)</p>
<p><b>Assignments / Homework</b></p>	
<ul style="list-style-type: none"> <li>• AS /FOR ASSESSMENT <ul style="list-style-type: none"> <li>i. (Pre-Interview: conversation)</li> <li>ii. Activity on career exploration (Class discussion and participation)</li> <li>iii. Observation: during group discussion</li> <li>iv. CW-SBI4U-WHMIS Quiz</li> <li>v. HW-Who Are You</li> </ul> </li> </ul>	

## The Erindale Academy Daily Lesson Plan Unit #0 and Lesson Plan #0.1

<b>Assessment Strategies</b>					
<b>For Learning</b>		<b>As Learning</b>		<b>Of Learning</b>	
<p style="text-align: center;"><b>Student product:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Diagnostic tests</li> <li><input type="checkbox"/> Pop quizzes</li> <li><input type="checkbox"/> Class notes</li> <li><input type="checkbox"/> Practice questions</li> </ul> <p style="text-align: center;"><b>Observation:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Class discussions</b></li> </ul> <p style="text-align: center;"><b>Conversation:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Student teacher conferences</li> <li><input type="checkbox"/> Small group discussions</li> </ul>		<p style="text-align: center;"><b>Student product:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Learning logs</li> <li><input type="checkbox"/> <b>Homework</b></li> <li><input type="checkbox"/> Peer-analysis sheet</li> </ul> <p style="text-align: center;"><b>Observation:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Whole class discussions</b></li> <li><input type="checkbox"/> Group discussions</li> </ul> <p style="text-align: center;"><b>Conversation:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Student teacher conferences</li> <li><input type="checkbox"/> Small group discussions</li> <li><input type="checkbox"/> Pair work</li> </ul>		<p style="text-align: center;"><b>Student product:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Assignments</b></li> <li><input type="checkbox"/> Exam</li> <li><input type="checkbox"/> Business report</li> </ul> <p style="text-align: center;"><b>Observation:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Student-led discussion/debate</li> <li><input type="checkbox"/> Presentation</li> <li><input type="checkbox"/> Student teacher conferences</li> <li><input type="checkbox"/> Question and answer session</li> </ul> <p style="text-align: center;"><b>Conversation:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Tests</li> <li><input type="checkbox"/> Case studies</li> <li><input type="checkbox"/> Exit card</li> <li><input type="checkbox"/> Performance tasks</li> </ul>	
<b>Lesson Tools</b>					
<p><b>Direct Instruction</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Structured overview</li> <li><input type="checkbox"/> <b>Lecture</b></li> <li><input type="checkbox"/> Compare &amp; contrast</li> <li><input type="checkbox"/> Socratic method</li> <li><input type="checkbox"/> Demonstrations</li> </ul>	<p><b>Indirect Instruction</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Problem solving</li> <li><input type="checkbox"/> <b>Case studies</b></li> <li><input type="checkbox"/> Reading for meaning</li> <li><input type="checkbox"/> <b>Inquiry</b></li> <li><input type="checkbox"/> Reflective discussion</li> <li><input type="checkbox"/> Writing to inform</li> <li><input type="checkbox"/> Concept formation</li> <li><input type="checkbox"/> Concept mapping</li> <li><input type="checkbox"/> Concept attainment</li> </ul>	<p><b>Interactive Instruction</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> PowerPoint</li> <li><input type="checkbox"/> <b>Video clip</b></li> <li><input type="checkbox"/> Debates</li> <li><input type="checkbox"/> Role playing</li> <li><input type="checkbox"/> <b>Brainstorming</b></li> <li><input type="checkbox"/> Peer partner</li> <li><input type="checkbox"/> <b>Learning/analysis</b></li> <li><input type="checkbox"/> Discussion</li> <li><input type="checkbox"/> Laboratory groups</li> <li><input type="checkbox"/> Cooperative learning</li> <li><input type="checkbox"/> Groups</li> <li><input type="checkbox"/> Jigsaw</li> <li><input type="checkbox"/> Problem solving</li> <li><input type="checkbox"/> Conferencing</li> </ul>	<p><b>Independent Study</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Essays</li> <li><input type="checkbox"/> Computer assisted instruction</li> <li><input type="checkbox"/> Journals</li> <li><input type="checkbox"/> Learning logs</li> <li><input type="checkbox"/> Reports</li> <li><input type="checkbox"/> Learning activity packages</li> <li><input type="checkbox"/> Correspondence lessons</li> <li><input type="checkbox"/> Learning contracts</li> <li><input type="checkbox"/> <b>Homework</b></li> <li><input type="checkbox"/> Research projects</li> <li><input type="checkbox"/> Assigned questions</li> <li><input type="checkbox"/> Learning centers</li> </ul>	<p><b>Experiential Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Field trips</li> <li><input type="checkbox"/> Conducting</li> <li><input type="checkbox"/> Experiments</li> <li><input type="checkbox"/> Simulations</li> <li><input type="checkbox"/> Games</li> <li><input type="checkbox"/> Story telling</li> <li><input type="checkbox"/> Focused imaging</li> <li><input type="checkbox"/> Field observations</li> <li><input type="checkbox"/> Role-playing</li> <li><input type="checkbox"/> Model building</li> <li><input type="checkbox"/> Surveys</li> <li><input type="checkbox"/> <b>Case studies</b></li> </ul>	<p><b>Instructional Skills</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Explaining</b></li> <li><input type="checkbox"/> Demonstrating</li> <li><input type="checkbox"/> <b>Questioning</b></li> </ul>