

There are some curricular competencies that students will be expected to carry out in order to earn a passing grade for Life Sciences 11.

(Curricular Competencies listed here are explained below)

***Questioning and predicting**
***Planning and conducting**
***Applying and innovating**

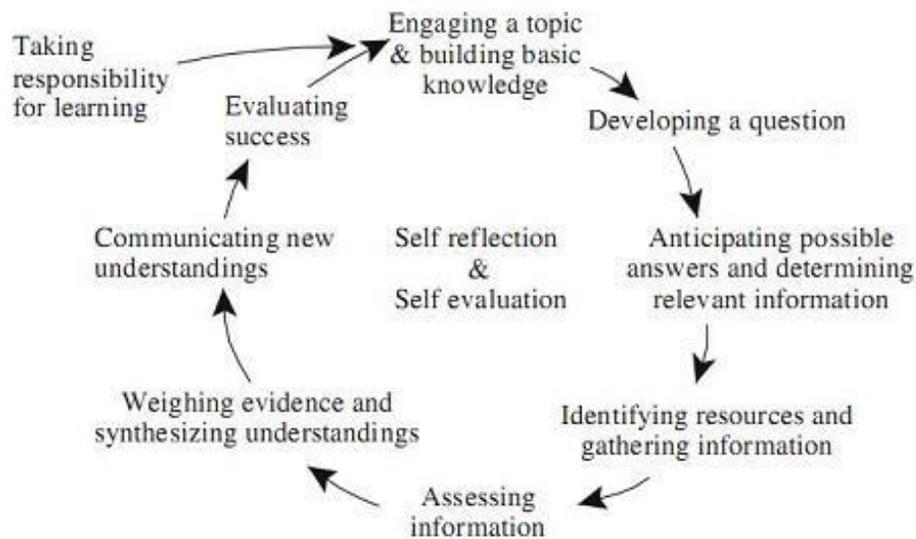
***Processing and analyzing data and information**
***Evaluating**
***Communicating**

There are three Core Concepts for this course. (Core Concepts listed here are explained below)

- 1) **Characteristics of Living things**- All living things have common characteristics
- 2) **Process of Evolution**- Living things evolve over time
- 3) **Taxonomy**- Organisms are grouped on the basis of identifiable similarities

This is an Inquiry Based Learning Course

Inquiry Based Learning (IBL) starts with you, the student, taking responsibility for what you learn starting with a question, gathering and analyzing resources and then communicating newly formulated arguments. Below is a diagrammatic outline of the IBL process.



Grading Criteria

Inquiry Based Activities	10%
Vocabulary Quizzes	40%
Problem Solving Assessment	40%
Final Problem-Solving Assessment	10%

Key to Succeeding in this Course

- *Daily Vocabulary Review
- *Don't wait till the last minute to study
- *Take note of the examples I use in class
- *Tie together concepts between the units studied

Attendance Policy

*The only absences that are recognized will be "Excused Absences" as per MyEdBC. Do not bring in a note. If your parents/guardians can write a note they can also call into the office.

*It is your responsibility to find out what notes, handouts or assignments you have missed. This is a Grade 11 class so it is time for you to take control of your learning

*If you have an excessive amount of absences in this class it can be difficult to "catch-up"

*Understand that some Inquiry Based Activities cannot be "made-up" (ie: **Plan Ahead**)

*If you are absent for a quiz you need to make sure your parents/guardians call the office to "excuse" your absence. If this is done the very next quiz mark will replace the No-Mark. This can only be used two times during the semester.

* If you are absent for an exam you will be offered the opportunity for a make-up exam if I can talk with a parent or guardian about your absence. Only one exam can be "made-up"

* The only day for make-up exams is Wednesday January 23rd, 2019 at 12:00pm in this room. This is the only day and time a make-up exam is offered and only one exam can be made up. (There is no make-up for the Final Exam)

Core Concepts Explained

Characteristics of Living Things

- **cells are the basic unit of life:**
 - comparing cell structures
 - prokaryotic and eukaryotic
 - unicellular and multicellular
 - cell specialization
 - sexual and asexual reproduction
 - cellular respiration and photosynthesis
- **viruses:**
 - basic structure and function of a virus
 - lytic and lysogenic cycles
 - effects of viruses on organisms

Process of Evolution

- **evolutionary change**
 - role of DNA in evolution as a hereditary material
 - five agents of evolutionary change

- **development of the theory of evolution**
- **models of evolution**
- **speciation**
 - divergent evolution
 - convergent evolution
 - co-evolution
- **trends in complexity**
- **artificial selection and genetic modifications**

Taxonomy

- **taxonomy principles for classifying organisms:**
 - taxons
 - phylogenetic tree and cladogram
 - dichotomous key
 - First Peoples understandings of animal body plans
 - First Peoples uses of local plants
- **binomial nomenclature**
- **unifying characteristics of the evolutionary continuum across the kingdoms:**
 - three domains
 - six kingdoms

Curricular Competencies Explained

Questioning and predicting

- Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal, local, or global interest
- Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world
- Formulate multiple hypotheses and predict multiple outcomes

Planning and conducting

- Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative)
- Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods
- Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data
- Apply the concepts of accuracy and precision to experimental procedures and data:
 - significant figures
 - uncertainty
 - scientific notation

Processing and analyzing data and information

- Experience and interpret the local environment
- Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information

- Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies
- Construct, analyze, and interpret graphs, models, and/or diagrams
- Use knowledge of scientific concepts to draw conclusions that are consistent with evidence
- Analyze cause-and-effect relationships

Evaluating

- Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions
- Describe specific ways to improve their investigation methods and the quality of the data
- Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled
- Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources
- Consider the changes in knowledge over time as tools and technologies have developed
- Connect scientific explorations to careers in science
- Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources
- Consider social, ethical, and environmental implications of the findings from their own and others' investigations
- Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems
- Assess risks in the context of personal safety and social responsibility

Applying and innovating

- Contribute to care for self, others, community, and world through individual or collaborative approaches
- Co-operatively design projects with local and/or global connections and applications
- Contribute to finding solutions to problems at a local and/or global level through inquiry
- Implement multiple strategies to solve problems in real-life, applied, and conceptual situations
- Consider the role of scientists in innovation

Communicating

- Formulate physical or mental theoretical models to describe a phenomenon
- Communicate scientific ideas, information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations
- Express and reflect on a variety of experiences, perspectives, and worldviews through place