

Life Sciences 11 - COURSE OUTLINE - Mrs. Randhawa

Welcome to Life Sciences 11

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Content

PART A:

UNIT 1: CELLS AND LIFE HISTORY

- Levels of Organization
- Classification of Living Organisms
- Timeline of Life
- Cell structure and function
- Energy Transformations in cells

UNIT 2: DNA and Genetic mutations

- Cell cycle
- DNA structure
- DNA replication
- Protein synthesis
- Mutations

PART B:

UNIT 3: EVOLUTION

- Evidence of macroevolution
- Adaptations to changing environments
- Changes in DNA
- Natural Selection
- Speciation
- Mechanisms of macroevolution

UNIT 4: MODERN APPLICATIONS

- Artificial selection and genetic modification
- Viruses

Competencies

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

PART C:

UNIT 5: CLASSIFICATION & TAXONOMY

- Taxonomic principles for classifying
- Binomial nomenclature
- First Peoples knowledge on classification
- Reproductive Cycles – sexual and asexual

UNIT 6: KINGDOMS OF LIFE

- Trends in complexity among various life forms
- Evidence for phylogenetic relationships
- First Peoples understandings of interrelationships between organisms

- 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

Assessment/Evaluation:

- Your overall mark in Life Sciences 11 is based on quizzes, group assignment, individual assignment, in class contribution, work ethic and attendance. 80% is for the tests and quizzes and 20% is for assignments.

Classroom expectations

Before the bell: Arrive on time, be seated, open your books and be ready to start learning when I start the lesson.

At the bell: I will close the door and the class will begin. If you are late, knock quietly and wait for me to let you into the classroom. Wait outside quietly and patiently. Collect your worksheets and listen to your teacher for instructions.

During the class: Always raise your hand to speak. Be courteous. Wait your turn patiently when you wish to contribute an answer or ask a question.

- Every idea and comment made by other students is always accepted with respect.
- To maximize learning and safety, cell phones, texting, other electronics are not permitted unless told to do so.

Missed classes and tests:

- You are responsible for catching up if you miss a class. Check with your teacher to ensure you have all handouts.
- It is your responsibility to complete all assignments for the next class. **Marks will not be given for assignments handed in after the work has been reviewed in class.** You are responsible for catching up on missed work if you are away.
- **Missed tests:** can only be made up if
 - You notify the teacher ahead of time that you will be away for a VALID reason
 - Your parent or guardian **emails to confirm you are sick** the day of the test and cannot attend class.
- If you miss a lab activity or you could not submit an assignment on time with a valid reason, please talk with me.
- Let your teacher know, in advance, if you will need to be absent. Ask your teacher for the information the class will receive during your absence.

If you are not understanding the subject or need some help: Speak with me right away or email me randhawa_s1@surreyschools.ca Raise your hand in class, call me over, come up to talk with me while others are working or make an appointment with me during lunchtime.

- **Consequences:** for poor behavior, late arrival for class or many absences may include, but are not limited to: behavior reflection, discussion with teacher, contact with parents/guardians, referral.

I have read and understand the above classroom contract/outline and agree to take responsibility for my own learning and respect all others in the classroom community.

Student Signature

Parent/Guardian Signature

If you have any questions, please feel free to contact me. I look forward to a successful summer learning.

Thank you,

Mrs. Randhawa

