



Science 9 Course Outline

Course: Science 9
Teacher: Mrs. Ferrajohn
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Block:	1-2	1-4	2-1
Room:	W203	W203	W203
Google Login:	pyklko	k0o6c78	1w8uvo

BRING the following to class everyday....

- **Computer & Binder:** 5 folders
- **Pencil Case:** Pens, pencils & a calculator
- **Agenda:** Record homework in it every class

DO the following in class everyday....

- **Date & organize** your notes
- Be **punctual** and ready to learn
- Use your **devices appropriately**

Welcome to Science 9!

In this course you will get the opportunity to expand your understanding of scientific concepts and develop skills and attitudes for scientific discovery and inquiry. Together, we will investigate scientific questions while building on your sense of wonder and curiosity about the world. We hope to create an active and meaningful science program that honours the *International Baccalaureate* fundamental concepts of international mindedness, intercultural awareness, communication, and holistic learning.

Description of the Course:

Unit & Related Topics	Reproductive Relationships: Asexual & Sexual Reproduction	Atoms All Around: The Periodic Table, Compounds & Electrons	Exploring Electricity: Circuits, Voltage, Current & Resistance	Sphere Sustainability: Solar Radiation & the Cycling of Matter
Proposed Timeframe	Sept. 8/11 to Nov. 16/17	Nov. 20/21 to Feb. 1/2	Feb. 5/6 to Apr. 19/20	Apr. 23/24 to June 21/22
Key Concept	Change	Systems	Relationships	Relationships
Related Concepts	Biological Transformation & Form	Patterns & Models	Energy & Transformation	Balance & Evidence
Global Context	Identities & Relationships	Scientific and Technical Innovation	Globalization & Sustainability	Globalization & Sustainability
Statement of Inquiry	Students will explore the change that occurs to various forms due to their biological transformations .	Students will explore how models of atomic structure have been derived from observable patterns and give us systems to predict chemical reactions.	Students will investigate the relationship of sustainable urban planning and how it requires the adoption of novel ways for the transformation of energy .	Students will reflect on how relationships maintain balance of natural resource consumption through conservation which can be based on evidence .
Inquiry Questions	* How are some types of asexual reproduction more advantageous than others? * Is there more genetic diversity these days because of globalization? * How close is your DNA to your sibling or friend? * Who should be able to alter genetic information?	* What is the evidence for different atomic models? * What are the patterns in the periodic table? * How can we predict the reaction of chemicals based on their structure? * How can we use our understanding of chemistry to produce new materials?	* How can we control the flow of electricity in a circuit? * How can we best meet our future energy needs? * In what ways do we depend on the generation of electricity?	* How do matter and energy move through ecosystems? * How do First Peoples view the cycling of matter and energy? * Compare the extraction of natural resources around the world. * Should all countries adopt the same technology for the usage of renewable resources?

Reflective
 Communicator
 Thinker
 Caring
 Principled
 Open-minded
 Risk-Taker
 Balanced
 Knowledgeable

Types of Assessment:

Formative Assessment	Summative Assessment
Checkpoints (Quizzes)	Projects
Exit slips	Tests
Activities	Lab Reports
Discussions	Debates
Ongoing Article Analysis	Final Article Analysis
Homework	In-class Investigations

Criteria for Assessment:

(0)	Beginning (1-2)	Developing (3-4)	Accomplished (5-6)	Exemplary (7-8)
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Criterion A: Knowledge and Understanding

- **Explain** scientific knowledge
- Apply scientific knowledge and understanding to **solve problems** set in **familiar and unfamiliar situations**.
- **Analyse** and **evaluate** information to make **scientifically supported judgments**.

Criterion B: Inquiring and Designing

- **Explain** a problem or question to be tested by a scientific investigation
- **Formulate and explain** a testable hypothesis **using correct scientific reasoning**
- **Explain** how to manipulate the variables, and **explain** how **sufficient, relevant data** will be collected
- **Design** a **logical, complete and safe method** in which I **select appropriate materials and equipment**.

Criterion C: Processing and Evaluating

- **Correctly collect, organize, transform and present** data in numerical and/ or visual forms
- **Accurately interpret** data and **explain** results **using correct scientific reasoning**
- **Evaluate** the validity of a hypothesis based on the outcome of a scientific investigation
- **Evaluate** the validity of the method based on the outcome of a scientific investigation
- **Explain** improvements or extensions to the method that would benefit the scientific investigation.

Criterion D: Reflecting on the Impacts of Science

- **Explain** the ways in which science is applied and used to address a specific problem or issue
- **Discuss and evaluate** the implications of using science and its application to solve a specific problem or issue
- **Consistently apply** scientific language to communicate understanding **clearly and precisely**
- Document sources **completely**.

Expectations:

* **If you are absent** on any given day then you are required to **keep up with the class** via the website and Google Classroom.

* **If you are absent** on the day that a **summative piece of assessment** is due, a valid note is needed and you will be allowed to complete the missed assessment upon the day that you return.