# Science 9 Course Outline

Welcome to MBSS and an exciting semester of Science 9! We will be conversing about cells, chatting about chemistry, pondering physics and exploring ecology. Be sure to bring a positive attitude, open mind and a healthy dose of respect to each class and Science 9 will be a wonderful experience!

Science 9 is built around 4 Big Ideas with an overarching goal to provide you with the opportunity to further your knowledge, skills, and attitudes related to science and science literacy. In the chart below are the required attitudes, skills and knowledge for Science 9. This chart includes statements of what students are expected to understand, know, and be able to do by the end of the semester.

|  |  |  |
| --- | --- | --- |
| **Big Ideas****(UNDERSTAND)** | **Content** **(KNOW)** | **Curricular Competencies****(DO)** |
| ***Cells are derived from other cells*** | * Asexual Reproduction
	+ Mitosis
	+ Different forms
* Sexual Reproduction
	+ Meiosis
	+ Genetic diversity
 | * **Questioning and predicting**
* **Planning and conducting**
* **Processing and analyzing data and information**
* **Evaluating**
* **Applying and innovating**
* **Communicating**
 |
| ***The electron arrangement of atoms impacts their chemical nature*** | * Element properties are organized in the periodic table
	+ Atomic number and properties of elements
* An element's properties are related to the arrangement and energy of its electrons and to its atomic size
	+ Compounds 🡪 ionic/covalent
	+ Names and formula
 |
| ***Electricity is the flow of electric charge*** | * Circuits – must be complete for electrons to flow
	+ Basic components (source, load, resistor, switch)
* Voltage, current, and resistance
	+ Ohm's Law
	+ Relative danger of current and voltage
 |
| ***The biosphere, geosphere, hydrosphere, and atmosphere are all interconnected*** | * Effects of solar radiation on the cycling of matter and energy
* Matter cycles within biotic and abiotic components of ecosystems
 |

For more detailed information about learning outcomes for this course, go to the Ministry of Education website at <https://curriculum.gov.bc.ca/curriculum/science/9>

**Classroom Expectations:**

1. Based on **mutual respect**.
* Being respectful of your fellow classmates and teacher goes a long way in ensuring that this will be a productive and enjoyable class.
	+ - Please listen when others are talking and raise your hand to provide answers and ask questions.
		- Criticism should focus on the ideas not the person.
* Use class time effectively. Behavior in the classroom should reflect a responsible attitude where the students strive to reach their full potential. Time given to work on assignments in class must be used effectively. I**nappropriate behavior will not be tolerated.**
* Respect the classroom by removing all garbage and recyclables.
1. **Show up to class prepared and on time.**
2. **Food** **and drinks** are allowed during class time unless it starts to become a problem.
3. **IPods and mp3 players** are not permitted in class. **No cell/smart phones are allowed, unless requested by the teacher.**

**Required Materials:**

Please bring the following items with you to every class:

* Positive attitude, open mind and healthy dose of respect
* Pen/**pencil**
* Lined paper

# Assessment: Evidence of Student Learning and Learning Maps

***EVERYTHING YOU DO, CREATE, AND SAY COUNTS. EVIDENCE IS COLLECTED DAILY!!!***

* Valid and reliable evaluation of student learning is gathered over time through a variety of avenues. A student's grade will be determined via triangulation between Observations, Conversations and Student Work.
* self and peer assessments
* student teacher conferences
* class discussions
* journals
* exit slips
* use of science vocabulary
* perseverance in problem solving
* class participation
* questions
* investigate problems
* performing safe lab procedures
* verbal fluency

Observations

* assignments
* quizzes
* projects
* journals
* entrance and exit slips

Student Work

Conversations with Students

* For each Big Idea both myself and the student will complete a Learning Map (example attached) to determine the student's grade. The Learning Map is working document and is continually updated based on new evidence provided by the student.
* Students will also be assigned a **work ethic** mark for each term.

**Special note on attendance:**

* While it is understandable that students will get sick through the year, have family emergencies and have appointments to attend, the original classroom experience can never be 100% duplicated. I will always do my best to help students catch up on the material that has been missed, but it is the student’s responsibility to follow up with me and their classmates for the missing work. Please ***check my webpage*** <http://msnickelscience9.weebly.com> to access material in case of an absence, and return to school with the missed material completed as best as possible.

**Extra Help:**

* It is very important to keep up in Science 9. Most students find it necessary to seek additional assistance at some point in the school year. If you are struggling with a concept, I encourage you to come see me ASAP. The longer you wait the harder it will be. Don’t fall behind! I am available most lunch hours and before/after school.

I am very much looking forward to learning with you this year!!

Ms Nickel

Email: amy.nickel@sd23.bc.ca Ms. Amy Nickel

Website: <http://msnickelscience9.weebly.com/> Science Teacher

Phone: (250) 870-5000 EXT 7235 Room 000

 Chemistry Learning Map

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | **C** | **B** | **A** |
| Atomic Theory | Includes a detailed and labelled model, major contributions and relevant experiments for Bohr.  | Includes detailed models, well explained contributions and the relevant experiments that contributed to the changes in knowledge over time. (Dalton, Thomson, and Rutherford) | Demonstrates the link/timeline between the models/theories.Describes at least one other model/theory. |
| Periodic Table | Describes what the symbols and numbers on each square tell us.Shows trends (metallic character, reactivity, electronegativity, ionization energy and atomic radius). | Describes how knowing the atomic number is helpful.Describes what the trends mean in own words.Describes the history of the periodic table. | Explains how an elements position on the periodic table can demonstrate information on the element. (Use the symbols and numbers on the squares as well as the trends to help with this). |
| Bonding | Describes what covalent and ionic bonding are and has an example of each.Shows examples of how to name the two types of compounds. | Includes detail on how the electrons are involved for both types of bonding.Includes diagrams of both types of bonding.Shows how to tell the difference between ionic and covalent compounds.Describes how to name the two types of compounds. | Discusses other types of chemical bonding and why they are important. |

### Science 9 – Parent Information

*Parents/guardians: Please complete and have your student return this sheet to Ms. Nickel or email the information directly to amy.nickel@sd23.bc.ca. Thank you!*

Student's Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Science 9 Block:

Parent/Guardian Name(s) and Contact information (Please print clearly):

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| --- | --- | --- | --- |
| **Parent/Guardian Name(s)** | **Email Address** | **Best phone number to reach you** | **Secondary phone number** |
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Other info you would like me to be aware of (allergy/medical/learning supports/past science or math successes or weakness, etc.): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Signature:

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