SCIENCE 10F: Grade 9 Science Course Outline

Credit Value: One Credit

McCreary School	**Teacher: Mr. Billett**
Course Code: 0120	bbillett@trsd.ca
Grade 9 Science	(204) 835-2083
Semester 1	Room 10

Prerequisites – Acquisition of Science 8 is recommended.

Course Description/Overview

Through the study of Science 10F, each student from kindergarten to grade 12 learns to understand, appreciate, and use science inquiry in everyday life. The general learning outcomes of understanding reproduction, atoms and elements, the characteristics of electricity, and the exploration of the universe will be covered in this course. As such we will work towards meeting the following objectives; 1. to develop in students an understanding of the interconnecting ideas and principles that transcend and unify the natural science disciplines; 2. to help students make informed decisions about further studies and careers in science and; 3. to provide students with opportunities for acquiring knowledge, skills and attitudes that contribute to personal development.

Focus and Purpose

Science education aims to increase people's understanding of science and the construction of knowledge as well as to promote scientific literacy and responsible citizenship. We can use science communication to increase science-related knowledge among adults, in particular.

Objectives

Several goals promoting scientific literacy within Canadian science education were developed as part of the Pan-Canadian Science Framework. These goals are addressed through Manitoba science curricula.

Science education will...

- *encourage students at all grades to develop a critical sense of wonder and curiosity about scientific and technological endeavours*
- *enable students to use science and technology to acquire new knowledge and solve problems, so that they may improve the quality of their own lives and the lives of others*
- *prepare students to critically address science-related societal, economic, ethical, and environmental issues*
- *provide students with a proficiency in science that creates opportunities for them to pursue progressively higher levels of study, prepares them for science-related occupations, and engages them in science-related hobbies appropriate to their interests and abilities*
- *develop in students of varying aptitudes and interests a knowledge*

Resources

- SciencePower 9 textbook

Required Materials

- Note paper (loose leaf) and a binder to keep class work
- Pencils & Pens (Blue, Black and Red)
- Pencil crayons or markers (for posters, and other projects)
- USB Memory stick

You are asked to acquire the above materials as quickly as possible and bring them with you to EVERY class. Should you not have already done so, please ensure that your Internet user agreement has been signed, thus allowing you to access the computers.

Classroom Rules and Expectations

All members of the classroom will:

- Commit to making the classroom a safe space, including respecting the opinions, ideas, and culture of all others.
- Respect the right of all others to learn in an environment that is free of distractions.
- Use only technology that is allowed in the class (no personal electronic devices permitted in class), and in a relevant and respectful manner.
- Attend class regularly, on time, and prepared for all classes.

Science 10F Topics, Summaries and Pacing Schedule (Tentative schedule that is subject to change)

September	Intro to Science	a) Course outline b) Activating your thinking c) Safety in the classroom d) Science and Science Inquiry e) Technology and Technological Problem Solving f) Societal Decision Making
	Unit 1 – The Power of Reproduction	Chapter 1: The Cell Cycle and Asexual Reproduction Chapter 2: Sexual Reproduction and Variation
October	Unit 1 – The Power of Reproduction	Chapter 3: Understanding Human Development Chapter 4: DNA and Reproduction Technologies
	Unit 2 – Atoms and Elements	Chapter 5: Properties and Changes Chapter 6: Meet the Elements Chapter 7: Models of Atomic Structure
November	Unit 2 – Atoms and Elements	Chapter 8: Chemical Bonding
	Unit 3 – Characteristics of Electricity	Chapter 9: Static Electricity Chapter 10: Electricity on the Move
December	Unit 3 – Characteristics of Electricity	Chapter 11: Practical Electricity Chapter 12: Electricity and Environment
	Unit 4 – Exploration of the Universe	Chapter 13: The Changing View from Earth Chapter 14: The Lives of Stars
January	Unit 4 – Exploration of the Universe	Chapter 15: Exploring the Cosmos Chapter 16: Earth and Space
	Preparing for exam.	Writing exam.

Note: Students will also be completing assignments that will be works on throughout the course. This will include a research assignment and several inquiry research assignments. Please refer to the tentative dues dates below.

Important Dates Science 10F – (Subject to change due to unforeseen circumstances)

September 6 – January 13 – Weekly journal entries
September – January– In class research project work.
October 20 – Group discussion 1 about research project.
October 26 – Inquiry project pair pitch
November 2 – Group discussion 2 about research project.
November 10 – Inquiry project pair pitch
November 12 – In class research response 1.
November 30 - Group discussion 1 about research project 2.
December 14 - Group discussion 2 about research project 2.
January 12 - In class research response 2.
January 16 – Hand in cumulative inquiry project.

Grade Appropriate Outcomes, Activities, and Skills

The five foundations is to develop scientifically literate students, Manitoba science curricula are built upon five foundations for scientific literacy that have been adapted from the Pan-Canadian Science Framework to address the needs of Manitoba students and include:

A. Nature of Science and Technology
B. Science, Technology, Society, and the Environment (STSE)
C. Scientific and Technological Skills and Attitudes
D. Essential Science Knowledge
E. Unifying Concepts

There are outcomes, activities, and skills that the curriculum puts emphasis on including:

A. Understanding scientific concepts and developing abilities of inquiry.
B. Learning subject matter disciplines in the context of inquiry, technology, science in personal and social perspectives, and history and nature of science.
C. Integrating all aspects of science content.
D. Studying a few fundamental science concepts.

E. Implementing inquiry as instructional strategies abilities, and ideas to be learned.
F. Activities that investigate and analyze science questions.
G. Investigations over extended periods of time.
H. Process skills and context.
I. Using multiple process skills – Manipulation cognitive, procedural.
J. Using evidence and strategies for developing or revising an explanation.
K. Science as argument and explanation.
L. Communicating science explanations.
M. Groups of students often analyzing and synthesizing data after defending conclusions.
N. Doing more investigations in order to develop understanding, ability, values of inquiry and knowledge of science content.
O. Applying the results of experiments to scientific arguments and explanations.
P. Management of ideas and information.
Q. Public communication of student ideas and work to classmates.

Each foundation outcomes, activities, and skills is described and accompanied by general learning outcomes, which further define expectations for student learning. These general learning outcomes represent the goals of science learning in Kindergarten to Grade 12.

Grade Appropriate Themes and Topics
Students will explore a vast array of themes and topics to acquire the necessary outcomes within Science 10F.

- Safety in the classroom
- Science and Science Inquiry
- Technology/Technological Problem Solving
- Societal Decision Making
- The Cell Cycle and Asexual Reproduction
- Sexual Reproduction and Variation
- Understanding Human Development
- DNA and Reproduction Technologies
- Properties and Changes
- Meet the Elements
- Models of Atomic Structure
- Chemical Bonding
- Static Electricity
- Electricity on the Move
- Practical Electricity
- Electricity and Environment
- The Changing View from Earth
- The Lives of Stars
- Exploring the Cosmos
- Earth and Space

Academic Evaluation and Assessment
Assessment will be based on a variety of activities that cater to the various learning styles of students. Individual and group research presentations, textbook exercises, class discussion, tests, quizzes, assignments, projects, daily work, and science activities will be part of the evaluation of the course. Both peer and self-assessment will be used on a number of assignments throughout the year. Rubrics will be used for the summative assessment of this course.

For each task, you will be given a set of evaluation guidelines in order to help you put forth your best work. It is your responsibility to examine the guidelines & assignment criteria in advance to ensure you have the opportunity to ask any-all questions. Remember, if you need clarification on an assignment, chances are, that a number of your peers have the same questions, so PLEASE ASK!
Late assignments will be dealt with in accordance to school policy.

Should you be absent for whatever reason, it is your responsibility to check the missed assignment folder, take responsibility for all missed work, and take down any missed notes. Regular attendance is crucial for success in this course.

Assessment will be ongoing and will include participation in daily classroom activities, homework checks, quizzes, unit tests, projects, and the final exam. Please refer to the evaluation format below.

Evaluation Methods and Specific Assessment
Students will receive formative assessments and summative assessments for each of the above mentioned topics. The work in this course will reflect the cumulative compilation of each of the units covered.

Manitoba Provincial Report Card Policy and Guidelines Evaluation
As per **section 4.3** the Manitoba Provincial Report Card Policy and Guidelines Evaluation document, a *percentage scale* is used to report overall subject grades.

Evaluation Format:

Term Work - Formally Evaluated Work (assignments, unit tests, projects) 70%

Unit tests……50%

Weekly Activities/Assignments……10%

Projects ……10%

Final Exam (A divisional exam which covers the outcomes studied in ELA 10F) 30%

I encourage you to come see me or email me at any point with your questions relating to this course. I will be available to provide extra help or answer any questions upon special arrangement. Just Ask!

Academic Integrity and Honesty

Students guilty of cheating (copying, plagiarizing, etc.) will receive a **zero** and their parents will be notified.

Incomplete Work / Late Assignments / Homework Policy

Incomplete work and late assignments may be deducted in marks, as per McCreary School's late policy, developed in accordance with the Provincial Assessment Policy.

The guidelines for late assignments are as follows:

1. Teachers will set and communicate reasonable timelines for assignments
2. Teachers will share timelines and reminders with students through various formats (ex. course outline, email, post in classroom, etc.)
3. Teachers will assist students to meet timelines – monitor progress, check-ins
4. Students who struggle will require additional support from the teacher
5. Extensions will be granted at the teacher's discretion, for valid and legitimate reasons only (ex. Illness)
6. Teachers will communicate with parents or set up parent/teacher/student conferences to discuss late / incomplete assignments
7. Teachers will make an arrangement with student to complete the work
8. Teachers will create alternative assignments for diverse learning needs

Where the above guidelines have been followed and assignments are not fully completed or handed in by the given due date, a deduction in marks will apply. Upon teacher discretion a maximum of 5% may be deducted for every day the assignment is not turned in. If the assignment is not turned in after two weeks or at the start of a new unit, the assignment will receive a mark of **zero**.

Student Support and Attendance Policy

The teacher will be available for additional student support outside of the classroom hours and it is the responsibility of the student to arrange a time with the teacher. Students will be responsible to catch up on work they miss in the case of their absence (of which the teacher must be informed in advance, where possible). Students who do not attend class regularly will be referred to the Learning to 18 Coordinator.

Use of Technology Policy

Turtle River School Division recognizes that Information and Communication Technologies (ICT) plays an important role in today's learning environment. Technology provided to both students and teachers are unique and powerful ways to enhance the way they teach/learn. Turtle River School Division's objective is to ensure student/staff members interact in a positive manner when using ICT both at school and in the community.

Successful operation of the network requires that account holders regard Turtle River file servers and computers as shared resources. It is important that members conduct themselves in a responsible manner while using the network. Refer to page 134 of TRSD Instructional policy document for more information on guidelines and consequences for inappropriate use.

There are no cell phones to be used by students during class time. Students are to keep cell phones in their lockers as per Turtle River school division policy. Please refer to TRSD Instructional policy document for more information.

Behavioural Assessment

Students will be assessed as per the guidelines from the Manitoba provincial report card, in the areas as follows:

Personal Management Skills

- Organizes material, uses class time productively, works independently, completes all work on time, persists when faced with challenges, seeks help when needed, demonstrates a strong work ethic, shows patience, demonstrates on-task behaviour, sets personal management goals

Active Participation in Learning

- Shows interest, asks questions, takes initiative, self-assesses work quality based on criteria, uses feedback to improve learning, uses criteria to provide feedback, uses a variety of media for communication, investigates questions, hypothesizes, analyzes

Social Responsibility

- Works and interacts well with others, is welcoming and positive, shares resources and equipment with others, respects school values, respects and follows classroom routines, takes an equitable share in group work, is courteous, respects the need for safety, sets personal management goals

**The course outline may be changed due to unforeseen circumstances. **

Please sign and return the following form, indicating that you have read and understand the course and classroom expectations.

Student's Name: _____

Student's Signature: _____ Date: _____

Parent's Name: _____

Parent's Signature: _____ Date: _____