

## MCCREARY SCHOOL

### COURSE OUTLINE

Science 20F

GRADE 10

Code: 0120/English

One Credit Course

Teacher: Michal Nogaj

**Prerequisites:** Grade 9 Science 10F

**Required Materials and Recommended Resources:**

Required: binder, pencils, eraser, lined paper, basic scientific calculator (students will NOT be allowed to use their device as a calculator on formal tests or exams)

Textbook: Nelson Grade 10 Science – copyright 2001

Other resources to be used as supplementary material

**Course Description and Goals**

Science 20F is the follow up course to Science 10F. As was the case for Science 10F, Science 20F is designed to expose students to the three main branches of science: chemistry, physics, and biology through a combination of lectures and hands-on activities. This allows students to choose a science elective at the 30S and/or 40S level that suits their interests. This course is mandatory as it is a prerequisite for all further science courses.

**Goals of Course**

The main goals of Science education:

- 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 of the wide variety of careers related to science, technology, and the environment

**Science 20F comprises the following 4 units:**

- Chemistry in Action (Chemistry)
- Dynamics of Ecosystems (Biology)
- In Motion (Physics)
- Weather Dynamics

## Summary of Four Main Units:

- Chemistry in Action (Chemistry) - in this unit, students will learn about how atoms combine with each other (including valence, ionic bonding, and covalent bonding), naming ionic and covalent compounds, and balancing chemical equations. Additionally, students will learn to classify chemical reactions and about the properties of acids and bases.
- Dynamics of Ecosystems (Biology) - in this unit, students will learn about the carbon, nitrogen, and oxygen cycles. They will also learn about mankind's impacts on the climate in addition to topics such as bioaccumulation and population dynamics. Lastly, students will explore ecology when they observe multiple organisms within an ecosystem (biodiversity) and how they interact with each other, and their environment on the whole.
- In Motion (Physics) - In this unit, students will explore one dimensional motion and the forces involved in motion. Highlights include velocity, acceleration, momentum, and Newtonian physics. Students will also represent motion graphically and use these graphs to calculate parameters of motion.
- Weather Dynamics - As part of this unit, students will learn about the formation and dynamics of severe weather phenomena such as tornadoes and blizzards. Students will also learn to evaluate meteorological maps and satellite imagery. Further, students will learn about climate change and the consequences of it.

## Student Evaluation

- Chapter Assignments
- Chapter Tests
- Final Exam

## Breakdown of Marks

- Coursework (tests & assignments): 70%
- Final Exam: 30%
- Coursework and exam will be marked using a key based on final answers and work shown.

## Classroom Expectations

### Attendance and Absence

- Students are expected to attend class regularly.
- Students who arrive in class 5 minutes after the bell or later will be marked as LATE
- Students who arrive with 15 minutes or less left in class will be marked as absent
- Students who are absent for class are responsible for gathering missed work and asking questions. Notes for missed work will be available on Microsoft Teams or in paper format
- All members of the classroom community are expected to be polite and respectful to all staff, students, and property in the classroom.
- **Use of Personal Devices**
  - Devices and accessories (including but not limited to cell phones, headphones, ear buds, tablets, and smart watches) must be turned off and put out of sight during teacher instruction.
  - If students cannot comply with the technology expectations, their device will be placed in a safe location until the end of class.
- Snow Days / No Bus Days
  - Due to the amount of material required to be completed during the course, students may be expected to complete homework as assigned in case of inclement weather or days where no buses run
  - Students will be expected to check Teams to see any updates regarding possible homework assignments
- Final Exam
  - All students are expected to write the final exam on the scheduled day
  - Failure to attend the final exam will result in a 0 (zero) unless there are exceptional circumstances, which may include bereavement or medical emergencies. If no notice is given for non-attendance on an exam day and no valid reason is provided within a reasonable time frame, you may not be allowed to write the exam.
  - Students are not to have devices on their person while writing the exam. Any use of these devices during an exam will result in a mark of 0 (zero)

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_

Date: \_\_\_\_\_

