Semester 1 & 2 Room: 8 Period 5 (2:17 – 3:30) Days 1, 2, 4
Period 5 (2:48 – 3:30) Day 3

Grade 8 Science

Course Code: 0120 Credit Value: none

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Prerequisites: none, although successful completion of K-6 science courses are strongly encouraged.
Required Materials and Recommended Resources:
Required: binder, pencils, eraser, lined paper
Textbook: *Hands on Science Grade 7* Jennifer Lawson; Portage and Main Press, 2004 (Teacher only)
Other resources to be used as supplementary material

Course Description and Purpose
The purpose of this course is to encourage students to discover and learn more about science, technology, society, and the environment and provide an avenue to build skills, knowledge and a positive attitude toward scientific concepts. More specific goals are listed below. With all science courses, there are main topics that are broadly stated, and then focus on specific units. This year, students will be building their skills by looking at the units of Ecosystems, the Particle Theory of Matter, The Earth's Crust, and Forces and Structures.

Goals of Course
The main goals of science education are to

- Encourage students at all grades to develop a critical sense of wonder and curiosity about scientific and technological endeavors
- 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

Summary of Main Topics
Development of scientific literacy is supported by instructional environments that engage students in the following processes:

- **Scientific inquiry**: students address questions about natural phenomena, involving broad explorations as well as focused investigations
- **Technological problem solving (design process)**: students seek answers to practical problems requiring the application of their science knowledge in various ways
- **Decision making**: students identify issues and pursue science knowledge that will inform the issues

*This Grade 8 class took the Grade 8 science course last year when they were part of a 7/8 split class. They have not yet been taught the Grade 7 science curriculum; this Grade 7 material will be covered during the 2024/2025 school year.

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Schedule (Subject to Change)	Topics covered
September	
Unit 1: Earth's Crust	Geology; rock and mineral formation; changes in landscape over time; human use of geologic resources; extraction, location, processing, and recycling of resources in Manitoba and Canada; soil as a natural resource; soil conservation; informed decisions about land use; theories of Earth's geology; role of technology in these theories; specialized careers involving the earth's crust.
October	
Unit 1: Earth's Crust	Completion of topics above
November	
Unit 1: Earth's Crust	Completion of Unit (if time is required)
Unit 2: Forces and Structures	Natural and human built structures and various forces; internal and external forces; structural strength and stability; shapes and materials used to increase strength and stability; efficiency of a structure (using mass and mass of load supported); evaluate structure designs; construct a structure of own design to be tested.
December	
Unit 2: Forces and Structures	Completion of topics above
January	
Unit 3: Particle Theory of Matter	Particle Theory of Matter; changes of state; pure substance and mixtures; characteristics of solutions; difference between heat and temperature; heat and conduction, convection, and radiation; insulators and conductors of heat; design a prototype to control transfer of heat; energy can be transformed into heat; heat as a byproduct; classifying substances (pure substance, mechanical mixture, solutions); separating parts of mixtures; solubility; concentration of solutions; saturated and unsaturated solutions; harmful effects of solutions on environment; safe methods of disposal (chemicals/solutions).
February	
Unit 3: Particle Theory of Matter	Completion of topics above
March	
Unit 3: Particle Theory of Matter	Completion of topics above
April	
Unit 4: Ecology	Investigate interactions between organisms and environment; identify biotic and abiotic components of ecosystems; analyze the cycle of matter; transfer of energy between consumer levels; implications of losing species in the transfer of energy; bioaccumulation; ecological succession; assessment of impacts of human intervention in natural processes; management and preservation of ecosystems; habitat protection; observe micro-organisms; roles of micro-organisms; micro-organisms and food production/preservation.
May	
Unit 4: Ecology	Completion of topics above
June	
Unit 4: Ecology	Completion of topics above

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Assessment

Student Evaluation

Formative Assessments:
- Participation in class activities
- Entry/exit slips

Summative Assessments:
- Assignments
- Tests/Quizzes
- Projects
- Experiments/Labs

Breakdown of Marks

Coursework (tests & assignments): 100%

Guidelines

Homework Policy

Homework will be assigned if/when:
- Students are not able to complete their assignments during class.
- Students are absent.

Incomplete Work
- Following the deadline of any assignment, the student's mark will be recorded as a zero. Upon completion of the assignment, it will be graded and recorded. At reporting periods, a final deadline will be given for the evaluations to take effect on the report card for that reporting period.

Plagiarism
- If a student plagiarizes work, they will receive a mark of zero until the assignment can be redone under supervision
- Any plagiarism will result in a serious conversation with the student, the classroom teachers, the parents/guardians, and possibly administration. For more than one offense, administration will be involved.

Extra Help
- If students need extra help, your teachers are available at lunch hour. Appointments can also be made for the morning or afterschool.

Classroom Expectations

- Attendance and Absence
  - Students are expected to attend class regularly.
  - Students who are absent for class are responsible for gathering missed work and asking questions.
- All members of the classroom community are expected to be polite and respectful to all staff, students, and property in the classroom.
  - If a student is showing inappropriate behaviour, they will receive a verbal warning; if the behaviour continues, they may be sent for a break outside of the classroom to 'reset'; if the break does not help, the student may be asked to complete the class in another location. Office referrals will be used as needed. Communication with home will also be used as needed.
- **Use of Personal Devices**
  - Cell phones are not to be used during the school day unless use has been pre-arranged with staff/administration for the purpose of a specific learning plan or for medical need. Please refer to the student handbook for further details.