



**Northern Gateway Schools  
Course Outline  
School: Mayerthorpe**

**Teacher: Josh Serediak**

**School Year: 2022-2023**

**Semester: 1/2**

**Course: Science 7**

**Text: Science in Action 7**

### **Program Vision**

The science 7 program is guided by the mindset of introducing students to unique opportunities to learn scientific concepts. Students will be immersed in many hands-on activities to further develop their understanding of scientific concepts. The overarching vision of the science 7 program is to foster a desire to learn more and expand knowledge in multiple divisions of science.

### **1. Goals and Objectives**

This course emphasizes the acquisition of scientific concepts and principles through a problem solving technique. In addition, these concepts and principles will be made relevant to the students' own experiences.

**The general goals of this course are:**

1. to develop a foundation of scientific knowledge
2. to develop an understanding of the nature of science through the acquisition of scientific enquiry skills
3. develop an understanding of the relationship between science and technology
4. develop an awareness of how science and technology impact society
5. develop and encourage lifelong interest and appreciation of science
6. increase awareness of the vast number of careers related to science

## **2. Units of Study/Timeline**

Science 7 is broken down into the following 5 units:

### **Unit 1: Interactions and Ecosystems**

- September - October

### **Unit 2: Plants for Food and Fibre**

- October/November - December

### **Unit 3: Heat and Temperature**

- January - February

### **Unit 4: Structures and Forces**

- March - April

### **Unit 5: Planet Earth**

- May - June

### **Review**

- June

### **Final Exam**

- End of June

## **3. Unit Descriptions**

### **Unit 1 – Interactions and Ecosystems**

In this unit, students will foster an understanding of the components and interactions in ecosystems as well as natural cycles and processes of change. Students investigate human impacts on ecosystems, and engage in studies that involve environmental monitoring and research.

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|--------------------------------------|------------------------|----------------------------|
| - Interactions and interdependencies | - species distribution | - endangered species       |
| - environmental monitoring           | - succession           | - extinction               |
| - environmental impacts              | - energy flow          | - environmental management |
| -nutrient cycles                     | - food chains          | - food webs                |

### **Unit 2 – Plants for Food and Fibre**

In this unit, students discover how plant products are used as a source for food and fibre, techniques for growing and breeding productive plant varieties.

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|------------------------------------|-----------------------|-----------------------|
| - needs and uses of plants         | - plant varieties     | - selective breeding  |
| - plant reproduction               | - monocultures        | - structure of plants |
| - fertilizers and soil nutrients   | - resource management | - sustainability      |
| - chemical and biological controls |                       |                       |

### **Unit 3 – Heat and Temperature**

In learning about heat, students investigate sources and uses of heat energy and consider the impact of resource usage on meeting our long-term needs.

- heat energy needs and technologies
- heat transfer
- temperature
- energy conservation
- change of state
- insulation
- thermal energy sources
- thermal energy
- particle model
- thermal expansion

### **Unit 4 – Structures and Forces**

In learning about structures, students investigate the properties of materials used under different loads and forces. They explore design, strength, stability, and construction methods both past and present of how structures meet human needs.

- structural forms
- structural stability
- forces on and within structures
- deformation
- joints
- performance requirements
- material strength
- modes of failure
- direction of forces

### **Unit 5 – Planet Earth**

In this unit, students study Earth – its surface and what lies below. What evidence we have, and how we use this evidence to develop an understanding of Earth and its changes.

- strata
- fossil formation
- mountain formation
- chronological time scale
- rock cycle
- crustal movement
- rocks and minerals
- weathering and erosion
- plate tectonics

## **5. Major Resources/Materials**

**Text - Science In Action 7.** Addison Wesley Publishing, 2001.

- Other resources include: supplementary textbooks, videos, DVD's, various websites, google classroom, youtube etc.

## **6. Student Evaluation**

1. Classroom Activities (includes: assignments, labs, projects, journals, reports)	30 %
2. Quizzes	20 %
3. Unit Exams	30 %
4. Final Exam	<u>20 %</u>
<b>5. Total</b>	<b>100%</b>

<b>Assessment for Learning</b>	<b>Assessment of Learning</b>
Formative assessment is a systematic process of collecting information or evidence about student learning and is not assigned a grade/mark for the report card.	Summative assessment is the judgment we make about the assessment of student learning based on established criteria and a mark/grade is recorded for the report card.

The purpose of assessment is to improve student learning. This means that judgments of student performance must be criterion-referenced so that descriptive feedback can be given that includes clearly expressed next steps for improvement. Tools of varying complexity are used by the teacher to facilitate this.

**Students are strongly encouraged to complete and submit all assessments of learning. Failure to do so may result in an incomplete report on student achievement.**

### **Appeals Process:**

- Students are encouraged to retain all materials pertinent to evaluation (assignment, tests, exams, research, projects, etc).
- Should a situation arise where a student is not satisfied with an assessment outcome, first discuss the matter with the teacher outside of class time. If the teacher and the student are unable to resolve the issue, then the teacher will approach another teacher to assess the assignment. (The teacher will not have prior knowledge of the student's name or the previous grade for the given assignment). If there is still an issue, a meeting will be set up between the student, teacher, parents, and administration to resolve the matter. The commencement of an appeal must occur in a timely manner; within 48 hours of receiving the marked assignment. In return, the appeal process will be completed as soon as possible.
- Please see the student agenda for more detailed appeals information.

<b>7. <u>Required Materials</u></b>
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- Lined loose leaf paper
- 3 ring binder
- pens (blue/black/red)
- pencils and erasers
- ruler (optional)
- pencil crayons/highlighters/markers (optional)
- Calculator

## 8. **Success in Science 7**

The teacher will present material and information using a variety of methods and strategies. Lectures, note taking, video, experiments, demonstrations and computer use are all part of this process. Each student is directly responsible for his/her own personal success in Science 7. The following are suggestions to help achieve that success.

- The due date for assignments and labs will be stated and posted in the classroom as well as electronically (Remind or Google Classroom). Students are required to keep track of these dates. Late assignments are discouraged. However, late assignments may be accepted up to 2 days past the due date.
- Students absent on the day of a test or quiz (which they had prior knowledge of), will be expected to complete the test upon their return to class. However, in the event of unforeseen or extenuating circumstances, the student is encouraged to discuss this with me and make alternative arrangements if necessary.
- Any student(s) who roughhouse, misuse materials, or fail to follow instructions during a lab may be asked to leave. The student may be required to make up the curricular outcome in another way (report, etc.)
- Attendance is essential to achieving success in Science 7. In addition, coming to class prepared with paper, pen, pencil, and calculator each day, will support success. Regular review of both the old and new concepts will dramatically increase the results on quizzes, tests, as well as the final exam. Our attendance policy requires that any student missing numerous classes meet with administration to ensure success is achieved.
- If you find that you are struggling with any of the material from class, please arrange to see me for extra help prior to any assessment(s).
- Parents and students are encouraged to sign up for the Remind texting service that will allow you to receive a text from the teacher reminding you of upcoming assignments, etc. At any time, please do not hesitate to contact me via email at [josh.serediak@ngps.ca](mailto:josh.serediak@ngps.ca)

## **Remind**

This service allows students and parents to get class updates via text message. We will periodically send messages to remind students of important items such as assignment due dates and upcoming quizzes and exams.

### **To subscribe:**

	Link to Download App	Phone number	Text code to phone #
Period 3	<a href="https://rmd.at/b86hh6h">rmd.at/b86hh6h</a>	(709)-800-8931	@b86hh6h
Period 4	<a href="https://rmd.at/f3e763">rmd.at/f3e763</a>	(709)-800-8931	@f3e763

### **9. Bus Days**

- Grade sevens and eights will be required to check their google classroom for assignments posted on bus days.