

Main Criteria: Forward Education

Secondary Criteria: Manitoba Curriculum Frameworks, New Brunswick Curriculum, Newfoundland and Labrador Curriculum Guides, Nova Scotia Curriculum, Prince Edward Island Curriculum, Saskatchewan Curriculum

Subjects: Mathematics, Science, Technology Education

Grades: 7, 8, Key Stage 3

Forward Education

Wildfire detection with Autonomous Vehicles

Manitoba Curriculum Frameworks

Mathematics

Grade 7 - Adopted: 2013

STRAND / COURSE / GENERAL OUTCOME	MB.7.PR.	Patterns and Relations
STRAND / SPECIFIC OUTCOME		(Patterns) Use patterns to describe the world and solve problems.
GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	7.PR.2.	Construct a table of values from a relation, graph the table of values, and analyze the graph to draw conclusions and solve problems. [C, CN, R, V]

SPECIFIC OUTCOME / ACHIEVEMENT INDICATOR 7.PR.2.2. Create a table of values using a relation, and graph the table of values (limited to discrete elements).

SPECIFIC OUTCOME / ACHIEVEMENT INDICATOR 7.PR.2.3. Sketch the graph from a table of values created for a relation, and describe the patterns found in the graph to draw conclusions (e.g., graph the relationship between n and $2n + 3$).

Manitoba Curriculum Frameworks

Mathematics

Grade 8 - Adopted: 2013

STRAND / COURSE / GENERAL OUTCOME	MB.8.PR.	Patterns and Relations
STRAND / SPECIFIC OUTCOME		(Patterns) Use patterns to describe the world and solve problems.
GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8.PR.1.	Graph and analyze two-variable linear relations. [C, ME, PS, R, T, V]

SPECIFIC OUTCOME / ACHIEVEMENT INDICATOR 8.PR.1.1. Determine the missing value in an ordered pair for an equation of a linear relation.

SPECIFIC OUTCOME / ACHIEVEMENT INDICATOR 8.PR.1.2. Create a table of values for the equation of a linear relation.

SPECIFIC OUTCOME / ACHIEVEMENT INDICATOR 8.PR.1.3. Construct a graph from the equation of a linear relation (limited to discrete data).

Manitoba Curriculum Frameworks

Science

Grade 7 - Adopted: 2006

STRAND / COURSE / GENERAL OUTCOME	MB.GLO-A.	Foundation A: Nature of Science and Technology
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STRAND / SPECIFIC OUTCOME GLO-A3. Distinguish critically between science and technology in terms of their respective contexts, goals, methods, products, and values

STRAND / SPECIFIC OUTCOME GLO-A5. Recognize that science and technology interact with and advance one another

STRAND / COURSE / GENERAL OUTCOME	MB.GLO-B.	Foundation B: Science, Technology, Society, and Environment (STSE)
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STRAND / SPECIFIC OUTCOME GLO-B1. Describe scientific and technological developments, past and present, and appreciate their impact on individuals, societies and the environment, both locally and globally.

STRAND / SPECIFIC OUTCOME GLO-B2. Recognize that scientific and technological endeavors have been and continue to be influenced by human needs and the societal context of the time

STRAND / SPECIFIC OUTCOME GLO-B5. Identify and demonstrate actions that promote a sustainable environment, society and economy, both locally and globally

STRAND / COURSE / GENERAL OUTCOME	MB.GLO-C.	Foundation C: Scientific and Technological Skills and Attitudes
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STRAND / SPECIFIC OUTCOME GLO-C3. Demonstrate appropriate problem-solving skills while seeking solutions to technological challenges

STRAND / SPECIFIC OUTCOME GLO-C4. Demonstrate appropriate critical thinking and decision-making skills when choosing a course of action based on scientific and technological information

STRAND / SPECIFIC OUTCOME GLO-C5. Demonstrate curiosity, scepticism, creativity, open-mindedness, accuracy, precision, honesty, and persistence, and appreciate their importance as scientific and technological habits of mind

STRAND / SPECIFIC OUTCOME	GLO-C6.	Employ effective communication skills and utilize information technology to gather and share scientific and technological ideas and data
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STRAND / COURSE / GENERAL OUTCOME	MB.GLO-D.	Foundation D: Essential Science Knowledge
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STRAND / SPECIFIC OUTCOME	GLO-D2.	Understand various biotic and abiotic components of ecosystems, as well as their interaction and interdependence within ecosystems and within the biosphere as a whole
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STRAND / SPECIFIC OUTCOME	GLO-D5.	Understand the composition of the Earth's atmosphere, hydrosphere, and lithosphere, as well as the processes involved within and between them
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STRAND / COURSE / GENERAL OUTCOME	MB.7-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	7-0-1.	Initiating
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	7-0-1b.	Select and justify a method to be used in finding the answer to a specific question. (GLO: C2)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	7-0-1c.	Identify practical problems to solve. (GLO: C3)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	7-0-1d.	Select and justify a method to be used in finding a solution to a practical problem. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.7-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	7-0-3.	Planning
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	7-0-3d.	Develop criteria to evaluate a prototype or consumer product. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.7-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	7-0-4.	Implementing a Plan

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

7-0-4b. Construct a prototype. (GLO: C3)

STRAND / COURSE / GENERAL OUTCOME	MB.7-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	7-0-5.	Observing, Measuring, Recording

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

7-0-5b. Test a prototype or consumer product with respect to pre-determined criteria. (GLO: C3, C5)

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

7-0-5c. Select and use tools to observe, measure, and construct. (GLO: C2, C3, C5)

STRAND / COURSE / GENERAL OUTCOME	MB.7-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	7-0-6.	Analysing and Interpreting

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

7-0-6d. Identify and make improvements to a prototype and explain the rationale for the changes. (GLO: C3, C4)

STRAND / COURSE / GENERAL OUTCOME	MB.7-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	7-0-7.	Concluding and Applying

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

7-0-7e. Identify new practical problems to solve. (GLO: C3)

STRAND / COURSE / GENERAL OUTCOME	MB.7-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	7-0-8.	Reflecting on Science and Technology

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL

7-0-8b. Describe examples of how scientific knowledge has evolved in light of new evidence, and the role of technology in this evolution. (GLO: A2, A5, B1)

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL

7-0-8d. Describe examples of how technologies have evolved over time in response to changing needs and scientific advances. (GLO: A5, B1, B2)

STRAND / COURSE / GENERAL OUTCOME	MB.7-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	7-0-9.	Demonstrating Scientific and Technological Attitudes

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL

7-0-9d. Value skepticism, accuracy, precision, and open-mindedness as scientific and technological habits of mind. (GLO: C5)

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL

7-0-9e. Be sensitive and responsible in maintaining a balance between the needs of humans and a sustainable environment. (GLO: B5)

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL

7-0-9f. Consider the cause and effects relationships of actions and decisions. (GLO: B5, C4, E3)

STRAND / COURSE / GENERAL OUTCOME	MB.7-1.	Interactions Within Ecosystems - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME

7-1-03. Identify abiotic and biotic components of ecosystems that allow particular organisms to survive. (GLO: D1, D2, E2)

STRAND / SPECIFIC OUTCOME

7-1-04. Describe ecological succession and identify signs of succession in a variety of ecosystems. (GLO: D2, E2, E3)

STRAND / SPECIFIC OUTCOME	7-1-05.	Identify and describe positive and negative examples of human interventions that have an impact on ecological succession or the makeup of ecosystems. (GLO: B5, D2, E2, E3)
STRAND / SPECIFIC OUTCOME	7-1-06.	Identify environmental, social, and economic factors that should be considered in the management and preservation of ecosystems. (GLO: B1, B5, D2, E2)
STRAND / SPECIFIC OUTCOME	7-1-07.	Propose a course of action to protect the habitat of a particular organism within an ecosystem. (GLO: B5, C3, D2, E2)
STRAND / SPECIFIC OUTCOME	7-1-10.	Analyze, using ecological pyramids, the implications of the loss of producers and consumers to the transfer of energy within an ecosystem. (GLO: C2, C8, D2, E4)

STRAND / COURSE / GENERAL OUTCOME	MB.7-2.	Particle Theory of Matter - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	7-2-07.	Differentiate between the concept of temperature and the concept of heat. (GLO: D3, D4, E4)
STRAND / SPECIFIC OUTCOME	7-2-08.	Demonstrate how heat can be transmitted through solids, liquids, and gases. (GLO: C1, D3, D4, E4)
STRAND / SPECIFIC OUTCOME	7-2-09.	Plan an experiment to identify materials that are good heat insulators and good heat conductors, and describe some uses of these materials. (GLO: B1, D3, D4)
STRAND / SPECIFIC OUTCOME	7-2-10.	Use the design process to construct a prototype that controls the transfer of heat energy. (GLO: A5, B2, C3, C4)

STRAND / COURSE / GENERAL OUTCOME	MB.7-4.	Earth's Crust - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	7-4-11.	Identify environmental, social, and economic factors that should be considered in making informed decisions about land use. (GLO: B1, B5, D5)
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Manitoba Curriculum Frameworks
Science
Grade 8 - Adopted: 2006

STRAND / COURSE / GENERAL OUTCOME	MB.GLO- A.	Foundation A: Nature of Science and Technology
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STRAND / SPECIFIC OUTCOME	GLO-A3.	Distinguish critically between science and technology in terms of their respective contexts, goals, methods, products, and values
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STRAND / SPECIFIC OUTCOME	GLO-A5.	Recognize that science and technology interact with and advance one another
STRAND / COURSE / GENERAL OUTCOME	MB.GLO-B.	Foundation B: Science, Technology, Society, and Environment (STSE)
STRAND / SPECIFIC OUTCOME	GLO-B1.	Describe scientific and technological developments, past and present, and appreciate their impact on individuals, societies and the environment, both locally and globally.
STRAND / SPECIFIC OUTCOME	GLO-B2.	Recognize that scientific and technological endeavors have been and continue to be influenced by human needs and the societal context of the time
STRAND / SPECIFIC OUTCOME	GLO-B5.	Identify and demonstrate actions that promote a sustainable environment, society and economy, both locally and globally
STRAND / COURSE / GENERAL OUTCOME	MB.GLO-C.	Foundation C: Scientific and Technological Skills and Attitudes
STRAND / SPECIFIC OUTCOME	GLO-C3.	Demonstrate appropriate problem-solving skills while seeking solutions to technological challenges
STRAND / SPECIFIC OUTCOME	GLO-C4.	Demonstrate appropriate critical thinking and decision-making skills when choosing a course of action based on scientific and technological information
STRAND / SPECIFIC OUTCOME	GLO-C5.	Demonstrate curiosity, scepticism, creativity, open-mindedness, accuracy, precision, honesty, and persistence, and appreciate their importance as scientific and technological habits of mind
STRAND / SPECIFIC OUTCOME	GLO-C6.	Employ effective communication skills and utilize information technology to gather and share scientific and technological ideas and data
STRAND / COURSE / GENERAL OUTCOME	MB.GLO-D.	Foundation D: Essential Science Knowledge
STRAND / SPECIFIC OUTCOME	GLO-D2.	Understand various biotic and abiotic components of ecosystems, as well as their interaction and interdependence within ecosystems and within the biosphere as a whole
STRAND / SPECIFIC OUTCOME	GLO-D5.	Understand the composition of the Earth's atmosphere, hydrosphere, and lithosphere, as well as the processes involved within and between them

STRAND / COURSE / GENERAL OUTCOME	MB.8-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	8-0-1.	Initiating

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

8-0-1b. Select and justify a method to be used in finding the answer to a specific question. (GLO: C2)

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

8-0-1c. Identify practical problems to solve. (GLO: C3)

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

8-0-1d. Select and justify a method to be used in finding a solution to a practical problem. (GLO: C3)

STRAND / COURSE / GENERAL OUTCOME	MB.8-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	8-0-3.	Planning

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

8-0-3d. Develop criteria to evaluate a prototype or consumer product. (GLO: C3)

STRAND / COURSE / GENERAL OUTCOME	MB.8-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	8-0-4.	Implementing a Plan

GENERAL
OUTCOME /
SPECIFIC
OUTCOME /
SKILL

8-0-4b. Construct a prototype. (GLO: C3)

STRAND / COURSE / GENERAL OUTCOME	MB.8-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	8-0-5.	Observing, Measuring, Recording

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8-0-5b.	Test a prototype or consumer product with respect to pre-determined criteria. (GLO: C3, C5)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8-0-5c.	Select and use tools to observe, measure, and construct. (GLO: C2, C3, C5)
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STRAND / COURSE / GENERAL OUTCOME	MB.8-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	8-0-6.	Analysing and Interpreting
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8-0-6d.	Identify and make improvements to a prototype and explain the rationale for the changes. (GLO: C3, C4)
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STRAND / COURSE / GENERAL OUTCOME	MB.8-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	8-0-7.	Concluding and Applying
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8-0-7e.	Identify new practical problems to solve. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.8-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	8-0-8.	Reflecting on Science and Technology
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8-0-8b.	Describe examples of how scientific knowledge has evolved in light of new evidence, and the role of technology in this evolution. (GLO: A2, A5, B1)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8-0-8d.	Describe examples of how technologies have evolved over time in response to changing needs and scientific advances. (GLO: A5, B1, B2)
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STRAND / COURSE / GENERAL OUTCOME	MB.8-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	8-0-9.	Demonstrating Scientific and Technological Attitudes

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8-0-9d.	Value skepticism, accuracy, precision, and open-mindedness as scientific and technological habits of mind. (GLO: C5)
GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8-0-9e.	Be sensitive and responsible in maintaining a balance between the needs of humans and a sustainable environment. (GLO: B5)
GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	8-0-9f.	Consider the cause and effects relationships of actions and decisions. (GLO: B5, C4, E3)

**New Brunswick Curriculum
Mathematics
Grade 7 - Adopted: 2008**

DOCUMENT/GENERAL LEARNING OUTCOME		Grade 7
CATEGORY		MATHEMATICAL PROCESSES

SECTION/SPECIFIC LEARNING OUTCOME	C.	communicate in order to learn and express their understanding of mathematics (Communications: C)
SECTION/SPECIFIC LEARNING OUTCOME	PS.	develop and apply new mathematical knowledge through problem solving (Problem Solving: PS)
SECTION/SPECIFIC LEARNING OUTCOME	R.	develop mathematical reasoning (Reasoning: R)
SECTION/SPECIFIC LEARNING OUTCOME	V.	develop visualization skills to assist in processing information, making connections and solving problems (Visualization: V).

DOCUMENT/GENERAL LEARNING OUTCOME		Grade 7
CATEGORY	PR.	Patterns & Relations (PR): Use patterns to describe the world and solve problems

SECTION/SPECIFIC LEARNING OUTCOME	PR2.	Create a table of values from a linear relation, graph the table of values, and analyze the graph to draw conclusions and solve problems. [C, CN, R, V]
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DOCUMENT/GENERAL LEARNING OUTCOME		Grade 7
CATEGORY	PR.	Patterns & Relations (PR): Represent algebraic expressions in multiple ways

SECTION/SPECIFIC LEARNING OUTCOME	PR7.	Model and solve problems that can be represented by linear equations of the form: $ax + b = c$; $ax = b$; $x/a = b$, $a \neq 0$ concretely, pictorially and symbolically, where a, b and c are whole numbers. [CN, PS, R, V]
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**New Brunswick Curriculum
Mathematics
Grade 8 - Adopted: 2009**

DOCUMENT/GENERAL LEARNING OUTCOME		Grade 8
CATEGORY		MATHEMATICAL PROCESSES

SECTION/SPECIFIC LEARNING OUTCOME	C.	communicate in order to learn and express their understanding of mathematics (Communications: C)
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SECTION/SPECIFIC LEARNING OUTCOME	PS.	develop and apply new mathematical knowledge through problem solving (Problem Solving: PS)
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SECTION/SPECIFIC LEARNING OUTCOME	R.	develop mathematical reasoning (Reasoning: R)
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SECTION/SPECIFIC LEARNING OUTCOME	V.	develop visualization skills to assist in processing information, making connections and solving problems (Visualization: V).
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DOCUMENT/GENERAL LEARNING OUTCOME		Grade 8
CATEGORY	PR.	Patterns & Relations (PR): Use patterns to describe the world and solve problems

SECTION/SPECIFIC LEARNING OUTCOME	PR1.	Graph and analyze two-variable linear relations. [C, ME, PS, R, T, V]
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**New Brunswick Curriculum
Science
Grade 7 - Adopted: 2002**

DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
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CATEGORY		Science 7 Curriculum
SECTION/SPECIFIC LEARNING OUTCOME		LIFE SCIENCE – Unit 1: Interactions within Ecosystems
UNIT/SPECIFIC LEARNING OUTCOME		Ecological Succession
SPECIFIC LEARNING OUTCOME		identify signs of ecological succession in a local ecosystem: pioneer species, climax community, primary succession, secondary succession (306-4)

SPECIFIC LEARNING OUTCOME		predict what an ecosystem will look like in the future on the basis of the characteristics of the area and the long-term changes (succession) observed in the site (208-5)
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DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
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CATEGORY		Science 7 Curriculum
SECTION/SPECIFIC LEARNING OUTCOME		LIFE SCIENCE – Unit 1: Interactions within Ecosystems
UNIT/SPECIFIC LEARNING OUTCOME		Action

SPECIFIC LEARNING OUTCOME		propose and defend a course of action to protect the local habitat of a particular organism (113-11, 211-5)
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DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
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CATEGORY		Science 7 Curriculum
SECTION/SPECIFIC LEARNING OUTCOME		PHYSICAL SCIENCE – Unit 3: Heat
UNIT/SPECIFIC LEARNING OUTCOME		Temperature and Matter

SPECIFIC LEARNING OUTCOME		explain temperature, using the concept of kinetic energy and the particle model of matter (308-2)
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DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
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CATEGORY		Science 7 Curriculum
SECTION/SPECIFIC LEARNING OUTCOME		PHYSICAL SCIENCE – Unit 3: Heat

UNIT/SPECIFIC LEARNING OUTCOME	Heat Transfer
SPECIFIC LEARNING OUTCOME	compare transmission of heat by conduction, convection, and radiation (308-5)
SPECIFIC LEARNING OUTCOME	carry out a procedure to investigate how various surfaces absorb radiant heat and control major variables (209-1)
SPECIFIC LEARNING OUTCOME	identify potential sources of error in data while investigating how various surfaces absorb radiant heat (210-10)
SPECIFIC LEARNING OUTCOME	identify, evaluate, and draw a conclusion about the relationship between colour and heat absorption in materials (210-11, 210-12)
SPECIFIC LEARNING OUTCOME	communicate results of experiments and/or investigations related to colour and heat absorption by using language and a variety of tables, charts, and/or graphs (211-2)
SPECIFIC LEARNING OUTCOME	describe how various surfaces absorb radiant heat: colour, texture (308-6)

Newfoundland and Labrador Curriculum Guides
Mathematics
Grade 7 - Adopted: 2013

COURSE / STRAND	NL.7PR.	Patterns and Relations
STRAND / GCO		Patterns: Use patterns to describe the world and to solve problems.
GCO / SCO	7PR1.	Demonstrate an understanding of oral and written patterns and their equivalent linear relations. [C, CN, R]

OUTCOME / INDICATOR 7PR1.2. Provide a context for a given linear relation that represents a pattern.

COURSE / STRAND	NL.7PR.	Patterns and Relations
STRAND / GCO		Patterns: Use patterns to describe the world and to solve problems.
GCO / SCO	7PR2.	Create a table of values from a linear relation, graph the table of values, and analyze the graph to draw conclusions and solve problems. [C, CN, PS, R, V]

OUTCOME / INDICATOR 7PR2.2. Create a table of values, using a linear relation, and graph the table of values (limited to discrete elements).

OUTCOME / INDICATOR 7PR2.3. Sketch the graph from a table of values created for a given linear relation, and describe the patterns found in the graph to draw conclusions; e.g., graph the relationship between n and $2n + 3$.

OUTCOME / INDICATOR 7PR2.5. Match a given set of linear relations to a given set of graphs.

OUTCOME / INDICATOR 7PR2.6. Match a given set of graphs to a given set of linear relations.

COURSE / STRAND	NL.7PR.	Patterns and Relations
STRAND / GCO		Variables and Equations: Represent algebraic expressions in multiple ways.
GCO / SCO	7PR3.	Demonstrate an understanding of preservation of equality by: modelling preservation of equality, concretely, pictorially and symbolically; applying preservation of equality to solve equations. [C, CN, PS, R, V]

OUTCOME / INDICATOR 7PR3.3. Solve a given problem by applying preservation of equality.

COURSE / STRAND	NL.7PR.	Patterns and Relations
STRAND / GCO		Variables and Equations: Represent algebraic expressions in multiple ways.
GCO / SCO	7PR6.	Model and solve, concretely, pictorially and symbolically, problems that can be represented by one-step linear equations of the form $x + a = b$, where a and b are integers. [CN, PS, R, V]

OUTCOME / INDICATOR 7PR6.2. Draw a visual representation of the steps required to solve a given linear equation.

COURSE / STRAND	NL.7PR.	Patterns and Relations
STRAND / GCO		Variables and Equations: Represent algebraic expressions in multiple ways.
GCO / SCO	7PR7.	Model and solve, concretely, pictorially and symbolically, problems that can be represented by linear equations of the form: $ax + b = c$; $ax - b = c$; $ax = b$; $x/a = b$, $a \neq 0$, where a, b and c are whole numbers. [CN, PS, R, V]

OUTCOME / INDICATOR 7PR7.3. Draw a visual representation of the steps used to solve a given linear equation.

Newfoundland and Labrador Curriculum Guides
Mathematics
 Grade 8 - Adopted: 2015

COURSE / STRAND	NL.8PR.	Patterns and Relations
STRAND / GCO		Patterns: Use patterns to describe the world and to solve problems.
GCO / SCO	8PR1.	Graph and analyze two-variable linear relations. [C, ME, PS, R, T, V]

OUTCOME / INDICATOR 8PR1.3. Construct a graph from the equation of a given linear relation (limited to discrete data).

COURSE / STRAND	NL.8PR.	Patterns and Relations
STRAND / GCO		Variables and Equations: Represent algebraic expressions in multiple ways.
GCO / SCO	8PR2.	Model and solve problems using linear equations of the form: $ax = b$; $x/a = b$, $a \neq 0$; $ax + b = c$; $x/a + b = c$, $a \neq 0$; $a(x+b) = c$; where a, b, and c are integers.

OUTCOME / INDICATOR 8PR2.2. Draw a visual representation of the steps used to solve a given linear equation and record each step symbolically.

OUTCOME / INDICATOR	8PR2.4.	Solve a given linear equation symbolically.
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OUTCOME / INDICATOR	8PR2.6.	Identify and correct an error in a given incorrect solution of a linear equation.
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Newfoundland and Labrador Curriculum Guides
Science
Grade 7 - Adopted: 2013

COURSE / STRAND	NL.7.1.	Interactions Within Ecosystems
STRAND / GCO	7.1.4.	Energy Flow in an Ecosystem:

GCO / SCO	7.1.4.12.	Illustrate and explain the nutrient cycle.
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COURSE / STRAND	NL.7.1.	Interactions Within Ecosystems
STRAND / GCO	7.1.5.	Ecological Succession: Students will be expected to:

GCO / SCO	7.1.5.1.	Identify changes that have occurred in a local ecosystem over time. (306-4)
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GCO / SCO	7.1.5.2.	Define succession.
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COURSE / STRAND	NL.7.1.	Interactions Within Ecosystems
STRAND / GCO	7.1.5.	Ecological Succession: Students will be expected to:
GCO / SCO	7.1.5.3.	Construct a flow chart of images to illustrate the changes that will take place in an ecosystem based on the characteristics of the area, including. (208-5, 210-2):

OUTCOME / INDICATOR	7.1.5.3.i.	Bare rock to forest (primary succession)
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OUTCOME / INDICATOR	7.1.5.3.ii.	Forest re-growth after fire (secondary succession)
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COURSE / STRAND	NL.7.1.	Interactions Within Ecosystems
STRAND / GCO	7.1.5.	Ecological Succession: Students will be expected to:

GCO / SCO	7.1.5.4.	Recognize that as succession occurs in an area, the ecosystem of the area will also change.
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GCO / SCO	7.1.5.5.	Describe how our need for a continuous supply of wood resulted in the development of silviculture practice. (112-3)
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GCO / SCO	7.1.5.6.	Make informed decisions about forest harvesting techniques, taking into account the environmental advantages and disadvantages. (113-9)
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GCO / SCO	7.1.5.8.	Identify various science- and technology-based careers related to forest management and harvesting. (112-9)
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COURSE / STRAND	NL.7.1.	Interactions Within Ecosystems
STRAND / GCO	7.1.6.	Environmental Action: Students will be expected to:

GCO / SCO 7.1.6.1. Defend a course of action to protect the local habitat of a particular organism. (113-11)

COURSE / STRAND	NL.7.1.	Interactions Within Ecosystems
STRAND / GCO	7.1.6.	Environmental Action: Students will be expected to:
GCO / SCO	7.1.6.2.	Recognize that humans have influenced the natural environment Including:

OUTCOME / INDICATOR 7.1.6.2.ii. Harvesting resources

COURSE / STRAND	NL.7.1.	Interactions Within Ecosystems
STRAND / GCO	7.1.6.	Environmental Action: Students will be expected to:
GCO / SCO	7.1.6.3.	Discuss the pros and cons of habitat conservation:

OUTCOME / INDICATOR 7.1.6.3.1 Pros

INDICATOR 7.1.6.3.1.i. Sustainability of resource

INDICATOR 7.1.6.3.1.ii Preservation of biodiversity

INDICATOR 7.1.6.3.1.ii Eco-tourism
i.

COURSE / STRAND	NL.7.1.	Interactions Within Ecosystems
STRAND / GCO	7.1.6.	Environmental Action: Students will be expected to:
GCO / SCO	7.1.6.3.	Discuss the pros and cons of habitat conservation:

OUTCOME / INDICATOR 7.1.6.3.2 Cons

INDICATOR 7.1.6.3.2.i. Artificial habitats

INDICATOR 7.1.6.3.2.ii Economic loss (job loss, etc.)

INDICATOR 7.1.6.3.2.ii Limited human use
i.

COURSE / STRAND	NL.7.1.	Interactions Within Ecosystems
STRAND / GCO	7.1.6.	Environmental Action: Students will be expected to:

GCO / SCO 7.1.6.4. Recognize that a variety of groups and individuals are interested in protecting the environment. (112-4, 112-8)

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.1.	Describing Temperature: Students will be expected to:

GCO / SCO 7.2.1.1. Relate personal activities in formal and informal settings to temperature. (109-10)

GCO / SCO 7.2.1.2. Define temperature operationally.

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.1.	Describing Temperature: Students will be expected to:
GCO / SCO	7.2.1.3.	Relate temperature to everyday experiences, including:

OUTCOME / INDICATOR 7.2.1.3.i. Daily temperature changes

OUTCOME / INDICATOR 7.2.1.3.ii. Cooking temperatures

OUTCOME / INDICATOR 7.2.1.3.iii. Refrigeration temperatures

OUTCOME / INDICATOR 7.2.1.3.iv. Average temperatures in different geographic areas

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.1.	Describing Temperature: Students will be expected to:
GCO / SCO	7.2.1.4.	Predict and identify the temperature of various familiar objects, including:

OUTCOME / INDICATOR 7.2.1.4.iii. Comfortable room temperature

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.2.	Measuring Temperature: Students will be expected to:
GCO / SCO	7.2.2.2.	Identify scales used in temperature measurement, including:

OUTCOME / INDICATOR 7.2.2.2.i. Celsius

OUTCOME / INDICATOR 7.2.2.2.ii. Fahrenheit

OUTCOME / INDICATOR 7.2.2.2.iii. Kelvin

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.2.	Measuring Temperature: Students will be expected to:

GCO / SCO 7.2.2.3. Select appropriate methods and tools in order to construct and test a thermometer. (208-8, 210-13)

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.3.	Temperature and Matter: Students will be expected to:

GCO / SCO 7.2.3.1. Define temperature using the particle theory of matter. (308-2)

GCO / SCO 7.2.3.5. Define temperature as a measure of the average kinetic energy of the particles of a substance.

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.4.	Heat Transfer: Students will be expected to:

GCO / SCO 7.2.4.1. Compare transmission of heat by conduction, convection, and radiation. (308-5)

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.4.	Heat Transfer: Students will be expected to:
GCO / SCO	7.2.4.2.	Define conduction, convection and radiation in terms of:

OUTCOME / INDICATOR 7.2.4.2.i. Particle movement

OUTCOME / INDICATOR 7.2.4.2.ii. State(s) in which it occurs

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.4.	Heat Transfer: Students will be expected to:
GCO / SCO	7.2.4.3.	Define conduction, convection and radiation in terms of:

OUTCOME / INDICATOR 7.2.4.3.i. Particle movement

OUTCOME / INDICATOR 7.2.4.3.ii. State(s) in which it occurs

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.4.	Heat Transfer: Students will be expected to:
GCO / SCO	7.2.4.4.	List common examples of the three processes of heat transfer, including:

OUTCOME / INDICATOR	7.2.4.4.i.	Conduction - cook ware, ice pack
OUTCOME / INDICATOR	7.2.4.4.ii.	Convection - air currents, heating a liquid
OUTCOME / INDICATOR	7.2.4.4.iii.	Radiation - fireplace, sunlight

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.4.	Heat Transfer: Students will be expected to:

GCO / SCO	7.2.4.5.	Design and conduct an experiment to test identified questions, state a hypothesis, identify and control major variables. (208-3, 208-5, 209-1)
GCO / SCO	7.2.4.6.	Use experimental apparatus and tools safely. (209-6)
GCO / SCO	7.2.4.7.	Organize and display data using tables and graphs. (209-4, 210-2)
GCO / SCO	7.2.4.8.	State a conclusion, based on experimental data, and explain how evidence gathered supports or refutes an initial idea. (210-11)
GCO / SCO	7.2.4.9.	Describe how various surfaces absorb radiant heat. (308-6)

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.6.	Heat Transfer - Conductors and Insulators: Students will be expected to:
GCO / SCO	7.2.6.1.	Provide examples of insulating technologies used today and in the past, including. (109-4):

OUTCOME / INDICATOR	7.2.6.1.i.	Animal fur
OUTCOME / INDICATOR	7.2.6.1.ii.	Sod
OUTCOME / INDICATOR	7.2.6.1.iii.	Fibreglass
OUTCOME / INDICATOR	7.2.6.1.iv.	Thermos

COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.6.	Heat Transfer - Conductors and Insulators: Students will be expected to:

GCO / SCO	7.2.6.2.	Distinguish between thermal conductors and insulators.
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COURSE / STRAND	NL.7.2.	Heat
STRAND / GCO	7.2.7.	Temperature Versus Heat - Specific Heat Capacity: Students will be expected to:

GCO / SCO 7.2.7.2. Distinguish between heat and temperature.

Newfoundland and Labrador Curriculum Guides
Science
Grade 8 - Adopted: 2010

COURSE / STRAND	NL.8.1.	Unit 1: Water Systems on Earth's Surface
STRAND / GCO	8.1.3.	Sources of Fresh Water

GCO / SCO 8.1.3.2. Describe how periods of climate change affect glaciers and describe the consequent effects on the environment (311-12)

Nova Scotia Curriculum
Mathematics
Grade 7 - Adopted: 2015

GENERAL LEARNING OUTCOME	NS.7.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	7.SCO.P R.	Patterns and Relations (PR)
GRADE LEVEL EXPECTATION	7.SCO.P R02.	Students will be expected to create a table of values from a linear relation, graph the table of values, and analyze the graph to draw conclusions and solve problems. [C, CN, PS, R, V]

EXPECTATION 7.SCO.P R02.05. Match a given set of linear relations to a set of graphs.

EXPECTATION 7.SCO.P R02.06. Match a given set of graphs to a given set of linear relations.

GENERAL LEARNING OUTCOME	NS.7.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	7.SCO.P R.	Patterns and Relations (PR)
GRADE LEVEL EXPECTATION	7.SCO.P R06.	Students will be expected to model and solve, concretely, pictorially, and symbolically, problems that can be represented by one-step linear equations of the form $x + a = b$, where a and b are integers. [CN, PS, R, V]

EXPECTATION 7.SCO.P R06.01. Represent a given problem with a linear equation, and solve the equation using concrete models.

EXPECTATION 7.SCO.P R06.02. Draw a visual representation of the steps required to solve a given linear equation.

EXPECTATION 7.SCO.P R06.03. Solve a given problem using a linear equation and record the process.

EXPECTATION 7.SCO.P R06.04. Verify the solution to a given linear equation using concrete materials and diagrams.

GENERAL LEARNING OUTCOME	NS.7.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	7.SCO.P R.	Patterns and Relations (PR)
GRADE LEVEL EXPECTATION	7.SCO.P R07.	Students will be expected to model and solve, concretely, pictorially, and symbolically, where a, b, and c are whole numbers, problems that can be represented by linear equations of the form: $ax + b = c$; $ax = b$; $x/a = b$, $a \neq 0$ [CN, PS, R, V]

EXPECTATION 7.SCO.P R07.01. Represent a given problem with a linear equation, and solve the equation using concrete models.

EXPECTATION 7.SCO.P R07.02. Draw a visual representation of the steps used to solve a given linear equation.

EXPECTATION 7.SCO.P R07.03. Solve a given problem using a linear equation and record the process.

EXPECTATION 7.SCO.P R07.04. Verify the solution to a given linear equation using concrete materials and diagrams.

**Nova Scotia Curriculum
Mathematics
Grade 8 - Adopted: 2015**

GENERAL LEARNING OUTCOME	NS.8.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	8.SCO.P R.	Patterns and Relations (PR)
GRADE LEVEL EXPECTATION	8.SCO.P R01.	Students will be expected to graph and analyze two-variable linear relations. [C, ME, PS, R, T, V]

EXPECTATION 8.SCO.P R01.01. Determine the missing value in an ordered pair for a given equation.

EXPECTATION 8.SCO.P R01.03. Construct a graph from the equation of a given linear relation (limited to discrete data).

GENERAL LEARNING OUTCOME	NS.8.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	8.SCO.P R.	Patterns and Relations (PR)
GRADE LEVEL EXPECTATION	8.SCO.P R02.	Students will be expected to model and solve problems, concretely, pictorially, and symbolically, where a, b, and c are integers, using linear equations of the form $ax = b$; $x/a = b$, $a \neq 0$; $ax + b = c$; $x/a + b = c$, $a \neq 0$; $a(x + b) = c$ [C, CN, PS, V]

EXPECTATION 8.SCO.P R02.01. Model a given problem with a linear equation, and solve the equation using concrete models.

EXPECTATION 8.SCO.P R02.02. Verify the solution to a given linear equation, using a variety of methods, including concrete materials, diagrams, and substitution.

EXPECTATION	8.SCO.P R02.04.	Solve a given linear equation symbolically.
EXPECTATION	8.SCO.P R02.05.	Identify and correct an error in a given incorrect solution of a linear equation.
EXPECTATION	8.SCO.P R02.07.	Solve a given problem, using a linear equation, and record the process.

**Nova Scotia Curriculum
Science
Grade 7 - Adopted: 2015**

GENERAL LEARNING OUTCOME	NS.7.GC O.	General Curriculum Outcomes
CURRICULUM OUTCOME	7.GCO.1	STSE

GRADE LEVEL EXPECTATION 7.GCO.1.1. Students will develop an understanding of the nature of science and technology, of the relationships

GENERAL LEARNING OUTCOME	NS.7.GC O.	General Curriculum Outcomes
CURRICULUM OUTCOME	7.GCO.2	SKILLS

GRADE LEVEL EXPECTATION 7.GCO.2.2. Students will develop the skills required for scientific and technological inquiry, for solving problems, for communicating scientific ideas and results, for working collaboratively, and for making informed decisions. between science and technology, and of the social and environmental contexts of science and technology.

GENERAL LEARNING OUTCOME	NS.7.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	7.SCO.P SH.	Physical Science: Heat (25%)
GRADE LEVEL EXPECTATION	7.SCO.P SH.1.	TEMPERATURE AND MATTER

EXPECTATION 7.SCO.P SH.1.4. Explain temperature, using the concept of kinetic energy and the particle model of matter (308-2)

GENERAL LEARNING OUTCOME	NS.7.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	7.SCO.P SH.	Physical Science: Heat (25%)
GRADE LEVEL EXPECTATION	7.SCO.P SH.2.	HEAT TRANSFER

EXPECTATION 7.SCO.P SH.2.1. Compare transmission of heat by conduction, convection, and radiation (308-5)

EXPECTATION 7.SCO.P SH.2.4. Investigate in a laboratory and describe in various formats how surfaces absorb radiant heat (308-6, 211-2)

GENERAL LEARNING OUTCOME	NS.7.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	7.SCO.LS.	Life Science: Interactions Within Ecosystems (25%)
GRADE LEVEL EXPECTATION	7.SCO.LS.3.	ECOLOGICAL SUCCESSION

EXPECTATION 7.SCO.LS.3.1. Identify signs of ecological succession in a local ecosystem and predict its future based on characteristics and succession (306-4, 208-5)

GENERAL LEARNING OUTCOME	NS.7.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	7.SCO.LS.	Life Science: Interactions Within Ecosystems (25%)
GRADE LEVEL EXPECTATION	7.SCO.LS.4.	ACTION

EXPECTATION 7.SCO.LS.4.1. Defend a proposal to protect a habitat and provide examples of various issues that can be addressed in multiple ways (113-11, 211-5, 113-10)

**Nova Scotia Curriculum
Science
Grade 8 - Adopted: 2015**

GENERAL LEARNING OUTCOME	NS.8.GCO.	General Curriculum Outcomes
CURRICULUM OUTCOME	8.GCO.1	STSE

GRADE LEVEL EXPECTATION 8.GCO.1.1. Students will develop an understanding of the nature of science and technology, of the relationships between science and technology, and of the social and environmental contexts of science and technology.

GENERAL LEARNING OUTCOME	NS.8.GCO.	General Curriculum Outcomes
CURRICULUM OUTCOME	8.GCO.2	SKILLS

GRADE LEVEL EXPECTATION 8.GCO.2.1. Students will develop the skills required for scientific and technological inquiry, for solving problems, for communicating scientific ideas and results, for working collaboratively, and for making informed decisions.

**Prince Edward Island Curriculum
Mathematics
Grade 7 - Adopted: 2012**

STRAND / COURSE	PE.7.PR.	Patterns and Relations (PR)
GENERAL LEARNING OUTCOME	6.SP4.	Use patterns to describe the world and solve problems.

CURRICULUM OUTCOME 7.PR2. Create a table of values from a linear relation, graph the table of values, and analyse the graph to draw conclusions and solve problems.

Mathematics
Grade 8 - Adopted: 2012

STRAND / COURSE	PE.8.PR.	Patterns and Relations (PR)
GENERAL LEARNING OUTCOME	6.SP4.	Use patterns to describe the world and solve problems.

CURRICULUM OUTCOME 8.PR1. Graph and analyse two-variable linear relations.

Prince Edward Island Curriculum
Science
Grade 7 - Adopted: 2012

STRAND / COURSE	PE.7.1.	Life Science: Interactions Within Ecosystems
GENERAL LEARNING OUTCOME	7.1.4.	Ecological Succession
CURRICULUM OUTCOME		Students will be expected to

GRADE LEVEL EXPECTATION 7.1.4.1. Identify signs of ecological succession in a local ecosystem (306-4).

GRADE LEVEL EXPECTATION 7.1.4.2. Predict what an ecosystem will look like in the future on the basis of the characteristics of the area and the long-term changes (succession) observed in the site (208-5).

STRAND / COURSE	PE.7.1.	Life Science: Interactions Within Ecosystems
GENERAL LEARNING OUTCOME	7.1.5.	Action
CURRICULUM OUTCOME		Students will be expected to

GRADE LEVEL EXPECTATION 7.1.5.1. Propose and defend a course of action to protect the local habitat of a particular organism (113-11, 211-5).

STRAND / COURSE	PE.7.3.	Physical Science: Heat
GENERAL LEARNING OUTCOME	7.3.2.	Temperature and Matter
CURRICULUM OUTCOME		Students will be expected to

GRADE LEVEL EXPECTATION 7.3.2.3. Explain temperature using the concept of kinetic energy and the particle model of matter (308-2).

STRAND / COURSE	PE.7.3.	Physical Science: Heat
GENERAL LEARNING OUTCOME	7.3.3.	Heat Transfer

CURRICULUM OUTCOME		Students will be expected to
GRADE LEVEL EXPECTATION	7.3.3.1.	Compare transmission of heat by conduction, convection, and radiation (308-5).
GRADE LEVEL EXPECTATION	7.3.3.5.	Identify potential sources of error in data while investigating how various surfaces absorb radiant heat (210-10).
GRADE LEVEL EXPECTATION	7.3.3.6.	Carry out a procedure to investigate how various surfaces absorb radiant heat and control major variables (209-1).
GRADE LEVEL EXPECTATION	7.3.3.7.	Identify, evaluate, and draw a conclusion about the relationship between colour and heat absorption in materials (210-11, 210-12).
GRADE LEVEL EXPECTATION	7.3.3.8.	Communicate results of experiments and/or investigations related to colour and heat absorption by using language and a variety of tables, charts, and/or graphs (211-2).
GRADE LEVEL EXPECTATION	7.3.3.9.	Describe how various surfaces absorb radiant heat (308-6).

**Saskatchewan Curriculum
Mathematics
Grade 7 - Adopted: 2007**

OUTCOME / COURSE	SK.P7.	Patterns and Relations
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FOCUS P7.1. Students will demonstrate an understanding of the relationships between oral and written patterns, graphs and linear relations. [C, CN, R]

**Saskatchewan Curriculum
Mathematics
Grade 8 - Adopted: 2008**

OUTCOME / COURSE	SK.P8.	Patterns and Relations
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FOCUS P8.1. Students will demonstrate understanding of linear relations concretely, pictorially (including graphs), physically, and symbolically. [CN, ME, PS, R, T, V]

**Saskatchewan Curriculum
Science
Grade 7 - Adopted: 2009**

OUTCOME / COURSE	SK.IE.	Life Science: Interactions within Ecosystems (IE)
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FOCUS IE7.2. **Observe, illustrate, and analyze living organisms within local ecosystems as part of interconnected food webs, populations, and communities. [SI]**

OUTCOME IE7.2.d. Show respect for all forms of life when examining ecosystems.

OUTCOME / COURSE	SK.IE.	Life Science: Interactions within Ecosystems (IE)
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FOCUS IE7.4. **Analyze how ecosystems change in response to natural and human influences, and propose actions to reduce the impact of human behaviour on a specific ecosystem. [DM, CP]**

OUTCOME	IE7.4.a.	Identify evidence of ecological succession in ecosystems, using the concepts of pioneer species, climax community, primary succession, and secondary succession, and by identifying changes in plant and animal life in the ecosystem.
OUTCOME	IE7.4.c.	Predict what a specific ecosystem (e.g., clear-cut forest, abandoned sports field, abandoned farm yard, abandoned rail line, ditch, driveway, or sidewalk) will look like in the future (e.g., 5, 10, and 25 years) based on characteristics of the area and long-term changes observed in similar ecosystems.
OUTCOME	IE7.4.d.	Identify and refine questions and problems related to the effects of natural or human influences on a particular ecosystem.
OUTCOME	IE7.4.g.	Be sensitive and responsible in maintaining a balance between human needs and a sustainable environment by considering both immediate and long-term effects of their course of action or stated position.

OUTCOME / COURSE	SK.HT.	Physical Science: Heat and Temperature (HT)
FOCUS	HT7.1.	Assess the impact of past and current heating and cooling technologies related to food, clothing, and shelter on self, society, and the environment. [TPS, DM, CP]

OUTCOME	HT7.1.b.	Communicate questions, ideas, intentions, plans, and results of inquiries related to heat transmission using lists, notes in point form, sentences, data tables, graphs, drawings, oral language, and other means.
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OUTCOME / COURSE	SK.HT.	Physical Science: Heat and Temperature (HT)
FOCUS	HT7.2.	Explain how understanding differences between states of matter and the effect of heat on changes in state provide evidence for the particle theory. [SI]

OUTCOME	HT7.2.f.	Trace the historical development of different scales (e.g., Kelvin, Celsius, Fahrenheit, and Rankine) and instruments used to measure temperature (e.g., liquid-in-glass thermometers, bi-metallic strips, digital thermometers, liquid crystal thermometers, thermocouples, and computer sensors) and discuss the need for standardized measurements of temperature.
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OUTCOME	HT7.2.g.	Distinguish between heat and temperature using the concept of kinetic energy and the particle model of matter.
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OUTCOME / COURSE	SK.HT.	Physical Science: Heat and Temperature (HT)
FOCUS	HT7.3.	Investigate principles and applications of heat transfer via the processes of conduction, convection, and radiation. [SI]

OUTCOME	HT7.3.a.	Demonstrate and explain how heat is transferred by the processes of conduction, convection, and radiation in solids, liquids, and gases.
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OUTCOME	HT7.3.b.	Construct a visual or dramatic representation of heat transfer via conduction in a solid.
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OUTCOME	HT7.3.c.	Model convection currents in fluids (liquid or gas) and discuss the effectiveness of the model.
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OUTCOME	HT7.3.f.	Design and carry out an experiment to determine differences in the ability of various surfaces to absorb and reflect radiant heat.
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OUTCOME	HT7.3.g.	Select appropriate methods and tools for collecting and displaying data and information related to radiant heat.
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OUTCOME	HT7.3.h.	Demonstrate safe and responsible work practices, including keeping the work area uncluttered with only appropriate materials present when investigating heat transfer via conduction, convection, and radiation.
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OUTCOME / COURSE	SK.EC.	Earth and Space Science: Earth's Crust and Resources (EC)
FOCUS	EC7.1.	Analyze societal and environmental impacts of historical and current catastrophic geological events, and scientific understanding of movements and forces within Earth's crust. [SI]
OUTCOME	EC7.1.e.	Describe societal and environmental impacts of some catastrophic geological events, including earthquakes, tsunamis, and volcanic eruptions, which have occurred on or near Earth's surface and predict the impacts of future events.
OUTCOME	EC7.1.f.	Work cooperatively with group members to research catastrophic geological events and integrate individual findings into a chronological model or time scale of major events in Earth's geological history.
OUTCOME	EC7.1.i.	Provide examples of how science and technology affect self and community through understanding, predicting, and minimizing the effects of catastrophic geological events (e.g., earthquake resistant construction, earthquake and tsunami preparedness, and minimizing climatic effects of volcanic eruptions).