

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: 5, 6, Key Stage 2

Forward Education

How Wind Turbines Capture Kinetic Energy

Manitoba Curriculum Frameworks

Mathematics

Grade 5 - Adopted: 2013

STRAND / COURSE / GENERAL OUTCOME	MB.5.N.	Number
STRAND / SPECIFIC OUTCOME		Develop number sense.
GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5.N.9.	Relate decimals to fractions (tenths, hundredths, thousandths). [CN, R, V]

SPECIFIC OUTCOME / ACHIEVEMENT INDICATOR

5.N.9.1. Write a decimal in fractional form.

SPECIFIC OUTCOME / ACHIEVEMENT INDICATOR

5.N.9.2. Write a fraction with a denominator of 10, 100, or 1000 as a decimal.

STRAND / COURSE / GENERAL OUTCOME	MB.5.N.	Number
STRAND / SPECIFIC OUTCOME		Develop number sense.
GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5.N.11.	Demonstrate an understanding of addition and subtraction of decimals (to thousandths), concretely, pictorially, and symbolically, by: using personal strategies; using the standard algorithms; using estimation; solving problems [C, CN, ME, PS, R, V]

SPECIFIC OUTCOME / ACHIEVEMENT INDICATOR

5.N.11.7. Determine the sum and difference using the standard algorithms of vertical addition and subtraction. (Numbers are arranged vertically with corresponding place value digits aligned.)

Manitoba Curriculum Frameworks

Mathematics

Grade 6 - Adopted: 2013

STRAND / COURSE / GENERAL OUTCOME	MB.6.N.	Number
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STRAND / SPECIFIC OUTCOME		Develop number sense
GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6.N.6.	Demonstrate an understanding of percent (limited to whole numbers), concretely, pictorially, and symbolically. [C, CN, PS, R, V]

SPECIFIC
OUTCOME /
ACHIEVEMENT
INDICATOR

6.N.6.5. Express a percent as a fraction and a decimal.

STRAND / COURSE / GENERAL OUTCOME	MB.6.SP.	Statistics and Probability
STRAND / SPECIFIC OUTCOME		(Data Analysis) Collect, display, and analyze data to solve problems.
GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6.SP.2.	Select, justify, and use appropriate methods of collecting data, including: questionnaires; experiments; databases; electronic media [C, PS, T]

SPECIFIC
OUTCOME /
ACHIEVEMENT
INDICATOR

6.SP.2.1. Select a method for collecting data to answer a question, and justify the choice.

Manitoba Curriculum Frameworks
Science
Grade 5 - 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 / 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
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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
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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
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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-D4.	Understand how stability, motion, forces, and energy transfers and transformations play a role in a wide range of natural and constructed contexts
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STRAND / COURSE / GENERAL OUTCOME	MB.GLO-E.	Foundation E: Unifying Concepts
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STRAND / SPECIFIC OUTCOME	GLO-E2.	Describe and appreciate how the natural and constructed world is made up of systems and how interactions take place within and among these systems
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STRAND / SPECIFIC OUTCOME	GLO-E4.	Recognize that energy, whether transmitted or transformed, is the driving force of both movement and change, and is inherent within materials and in the interactions among them
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STRAND / COURSE / GENERAL OUTCOME	MB.5-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	5-0-1.	Initiating
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-1b.	Identify various methods for finding the answer to a specific question and, with guidance, select one to implement. (GLO: C2)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-1c.	Identify practical problems to solve. (GLO: C3)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-1d.	Identify various methods to solve a practical problem and select and justify one to implement. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.5-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	5-0-3.	Planning

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-3d.	Develop criteria to evaluate a prototype or consumer product. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.5-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	5-0-4.	Implementing a Plan

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-4b.	Construct a prototype. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.5-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	5-0-5.	Observing, Measuring, Recording

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-5b.	Test a prototype or consumer product with respect to pre-determined criteria. (GLO: C3, C5)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-5c.	Select and use tools and instruments to observe, measure, and construct. (GLO: C2, C3, C5)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-5d.	Evaluate the appropriateness of units and measuring tools in practical contexts. (GLO: C2, C5)
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STRAND / COURSE / GENERAL OUTCOME	MB.5-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	5-0-6.	Analysing and Interpreting
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-6c.	Identify and make improvements to a prototype and explain the rationale for the (GLO: C3, C4)
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STRAND / COURSE / GENERAL OUTCOME	MB.5-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	5-0-7.	Concluding and Applying
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-7e.	Identify new practical problems to solve. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.5-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	5-0-8.	Reflecting on Science and Technology
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-8c.	Recognize that technology is a way of solving problems in response to human needs. (GLO: A3, B2)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-8d.	Provide examples of technologies from the past and describe how they have evolved over time. (GLO: B1)
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STRAND / COURSE / GENERAL OUTCOME	MB.5-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	5-0-9.	Demonstrating Scientific and Technological Attitudes
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	5-0-9d.	Appreciate the importance of creativity, accuracy, honesty, and perseverance as scientific and technological habits of mind. (GLO: C5)
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STRAND / COURSE / GENERAL OUTCOME	MB.5-3.	Forces and Simple Machines - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	5-3-01.	Use appropriate vocabulary related to their investigations of forces and simple machines. (GLO: C6, D4)
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STRAND / SPECIFIC OUTCOME	5-3-10.	Identify and describe types of simple machines. (GLO: D4)
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STRAND / SPECIFIC OUTCOME	5-3-12.	Investigate to identify advantages and disadvantages of using different simple machines to accomplish the same task. (GLO: B1, C2, C4, D4)
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STRAND / SPECIFIC OUTCOME	5-3-13.	Compare devices that use variations of simple machines to accomplish similar tasks. (GLO: B1, C3, C4, D4)
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STRAND / SPECIFIC OUTCOME	5-3-14.	Use the design process to construct a prototype containing a system of two or more different simple machines that move in a controlled way to perform a specific function. (GLO: C3, D4, E2)
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STRAND / COURSE / GENERAL OUTCOME	MB.5-4.	Weather - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	5-4-03.	Describe properties of air. (GLO: D3)
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**Manitoba Curriculum Frameworks
Science
Grade 6 - 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
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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.
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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
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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
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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
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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
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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-D4.	Understand how stability, motion, forces, and energy transfers and transformations play a role in a wide range of natural and constructed contexts
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STRAND / COURSE / GENERAL OUTCOME	MB.GLO-E.	Foundation E: Unifying Concepts
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STRAND / SPECIFIC OUTCOME	GLO-E2.	Describe and appreciate how the natural and constructed world is made up of systems and how interactions take place within and among these systems
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STRAND / SPECIFIC OUTCOME	GLO-E4.	Recognize that energy, whether transmitted or transformed, is the driving force of both movement and change, and is inherent within materials and in the interactions among them
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STRAND / COURSE / GENERAL OUTCOME	MB.6-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	6-0-1.	Initiating

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-1b.	Identify various methods for finding the answer to a specific question and select one to implement. (GLO: C2)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-1c.	Identify practical problems to solve. (GLO: C3)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-1d.	Identify various methods to solve a practical problem and select and justify one to implement. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.6-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	6-0-3.	Planning

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-3d.	Develop criteria to evaluate a prototype or consumer product. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.6-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	6-0-4.	Implementing a Plan

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-4b.	Construct a prototype. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.6-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	6-0-5.	Observing, Measuring, Recording

GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-5b.	Test a prototype or consumer product with respect to pre-determined criteria. (GLO: C3, C5)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-5c.	Select and use tools and instruments to observe, measure, and construct. (GLO: C2, C3, C5)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-5d.	Evaluate the appropriateness of units and measuring tools in practical contexts. (GLO: C2, C5)
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STRAND / COURSE / GENERAL OUTCOME	MB.6-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	6-0-6.	Analysing and Interpreting
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-6c.	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.6-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	6-0-7.	Concluding and Applying
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-7e.	Identify new practical problems to solve. (GLO: C3)
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STRAND / COURSE / GENERAL OUTCOME	MB.6-0.	Overall Skills and Attitudes - Specific Learning Outcomes
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STRAND / SPECIFIC OUTCOME	6-0-8.	Reflecting on Science and Technology
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-8c.	Recognize that technology is a way of solving problems in response to human needs. (GLO: A3, B2)
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GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-8d.	Provide examples of technologies from the past and describe how they have evolved over time. (GLO: B1)
STRAND / COURSE / GENERAL OUTCOME	MB.6-0.	Overall Skills and Attitudes - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	6-0-9.	Demonstrating Scientific and Technological Attitudes
GENERAL OUTCOME / SPECIFIC OUTCOME / SKILL	6-0-9d.	Appreciate the importance of creativity, accuracy, honesty, and perseverance as scientific and technological habits of mind. (GLO: C5)
STRAND / COURSE / GENERAL OUTCOME	MB.6-2.	Flight - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	6-2-15.	Use the design process to construct a prototype that can fly and meet specific performance criteria. (GLO: C3, D4)
STRAND / COURSE / GENERAL OUTCOME	MB.6-3.	Electricity - Specific Learning Outcomes
STRAND / SPECIFIC OUTCOME	6-3-05.	List electrical devices used at home, at school, and in the community, and identify the human needs that they fulfill. (GLO: B1, B2, D4)
STRAND / SPECIFIC OUTCOME	6-3-13.	Explore motors and generators to determine that electromagnets transform electricity into motion and motion, into electricity. (GLO: A5, D4, E2, E4)
STRAND / SPECIFIC OUTCOME	6-3-14.	Identify forms of energy that may result from the transformation of electrical energy, and recognize that energy can only be changed from one form into another, not created or destroyed. (GLO: D4, E4)
STRAND / SPECIFIC OUTCOME	6-3-15.	Identify the two major sources of electrical energy, and provide examples of each. (GLO: B1, D4, E4)
STRAND / SPECIFIC OUTCOME	6-3-16.	Identify renewable and non-renewable sources of electrical energy, and discuss advantages and disadvantages of each. (GLO: B5, E4)
STRAND / COURSE / GENERAL OUTCOME	MB.6-4.	The Solar System - Specific Learning Outcomes

STRAND /
SPECIFIC
OUTCOME

6-4-01. Use appropriate vocabulary related to their investigations of Earth and space. (GLO: C6, D6)

New Brunswick Curriculum
Mathematics
Grade 5 - Adopted: 2009

DOCUMENT/GENERAL LEARNING OUTCOME		Grade 5
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

T. select and use technologies as tools for learning and solving problems (Technology: T)

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 5
CATEGORY	N.	Number (N): Develop number sense

SECTION/SPECIFIC LEARNING OUTCOME

N9. Relate decimals to fractions (to thousandths). [CN, R, V]

New Brunswick Curriculum
Mathematics
Grade 6 - Adopted: 2010

DOCUMENT/GENERAL LEARNING OUTCOME		Grade 6
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	T.	select and use technologies as tools for learning and solving problems (Technology: T)
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 6
CATEGORY	SP.	Statistics and Probability (SP): Collect, display and analyze data to solve problems

SECTION/SPECIFIC LEARNING OUTCOME	SP2.	Select, justify and use appropriate methods of collecting data, including: questionnaires; experiments; databases; electronic media. [C, PS, T]
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**New Brunswick Curriculum
Science
Grade 5 - Adopted: 2002**

DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
CATEGORY		Science 5 Curriculum
SECTION/SPECIFIC LEARNING OUTCOME		Unit 3 – Physical Science: Forces and Simple Machines
UNIT/SPECIFIC LEARNING OUTCOME		Simple Machines: An Introduction

SPECIFIC LEARNING OUTCOME		use simple machines to reduce effort or increase the distance an object moves (205-2)
SPECIFIC LEARNING OUTCOME		compare the force needed to lift or move a load manually with the effort required to lift it using a simple machine (303-17)
SPECIFIC LEARNING OUTCOME		identify problems that consider the amount of effort needed to lift or move heavy objects, using the knowledge they gained through the study of forces (206-9)

DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
CATEGORY		Science 5 Curriculum
SECTION/SPECIFIC LEARNING OUTCOME		Unit 3 – Physical Science: Forces and Simple Machines
UNIT/SPECIFIC LEARNING OUTCOME		Simple Machines–Pulleys, Systems of Machines
SPECIFIC LEARNING OUTCOME		design a system of machines to solve a task (204-7)
SPECIFIC LEARNING OUTCOME		communicate questions, ideas, and intentions; listen to others; and suggest improvements to the systems of machines designed by students in the class (207-1, 206-6)
SPECIFIC LEARNING OUTCOME		describe examples of how simple machines have improved living conditions (107-8)
SPECIFIC LEARNING OUTCOME		identify examples of machines that have been used in the past and have developed over time, using information sources such as books, software packages, and the Internet (205-8, 105-5)

DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
CATEGORY		Science 5 Curriculum
SECTION/SPECIFIC LEARNING OUTCOME		Unit 4 – Earth and Space Science: Weather
UNIT/SPECIFIC LEARNING OUTCOME		Properties of Air
SPECIFIC LEARNING OUTCOME		describe situations which demonstrate air takes up space, has weight, and expands when heated (300-14)
SPECIFIC LEARNING OUTCOME		draw a conclusion, based on evidence gathered through research and observation, about the patterns of air and/or water flow that result when two air or water masses of different temperature meet (206-5)

DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
CATEGORY		Science 5 Curriculum

SECTION/SPECIFIC LEARNING OUTCOME		Unit 4 – Earth and Space Science: Weather
UNIT/SPECIFIC LEARNING OUTCOME		Movement of Air and Water

SPECIFIC LEARNING OUTCOME

identify patterns in indoor and outdoor air movement (302-10)

New Brunswick Curriculum
Science
Grade 6 - Adopted: 2002

DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
CATEGORY		Science Grade 6 Curriculum
SECTION/SPECIFIC LEARNING OUTCOME		PHYSICAL SCIENCE: ELECTRICITY
UNIT/SPECIFIC LEARNING OUTCOME		Electromagnets and their Applications

SPECIFIC LEARNING OUTCOME

describe how knowledge of electromagnets has led to the development of many electrical devices that use them (106-3)

DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
CATEGORY		Science Grade 6 Curriculum
SECTION/SPECIFIC LEARNING OUTCOME		PHYSICAL SCIENCE: ELECTRICITY
UNIT/SPECIFIC LEARNING OUTCOME		Uses for Electricity

SPECIFIC LEARNING OUTCOME

demonstrate how electricity in circuits can produce light, heat, sound, motion, and magnetic effects (303-26)

SPECIFIC LEARNING OUTCOME

describe how knowledge of electricity has led to many new inventions that have changed the way we live, and describe ways in which we have become increasingly dependent on electricity over the years (107-9, 106-4)

DOCUMENT/GENERAL LEARNING OUTCOME		Atlantic Canada Science Curriculum (Specific curriculum outcomes)
CATEGORY		Science Grade 6 Curriculum

SECTION/SPECIFIC LEARNING OUTCOME		PHYSICAL SCIENCE: ELECTRICITY
UNIT/SPECIFIC LEARNING OUTCOME		Sources of Electricity
SPECIFIC LEARNING OUTCOME		describe how knowledge that magnets can produce electric current led to the invention of electrical generators (106-4)
SPECIFIC LEARNING OUTCOME		identify and investigate various methods of generating electricity (past, present and future), and describe some ways in which these methods affect the environment (303-28, 105-3, 108-8)
SPECIFIC LEARNING OUTCOME		identify and explain sources of electricity as renewable or nonrenewable (303-29)

Newfoundland and Labrador Curriculum Guides
Mathematics
Grade 5 - Adopted: 2015

COURSE / STRAND	NL.5N.	Number
STRAND / GCO		Number: Develop number sense.
GCO / SCO	5N9.	Relate decimals to fractions and fractions to decimals (to thousandths). [CN, R, V]
OUTCOME / INDICATOR	5N9.1.	Express orally and in written form, a given decimal as a fraction with a denominator of 10, 100 or 1 000.
OUTCOME / INDICATOR	5N9.2.	Express orally and in written form, a given fraction with a denominator of 10, 100 or 1 000 as a decimal.

COURSE / STRAND	NL.5SP.	Statistics and Probability
STRAND / GCO		Data Analysis: Collect, display and analyze data to solve problems.
GCO / SCO	5SP1.	Differentiate between firsthand and second-hand data. [C, R, T, V]
OUTCOME / INDICATOR	5SP1.1.	Explain the difference between first-hand and secondhand data.

Newfoundland and Labrador Curriculum Guides
Mathematics
Grade 6 - Adopted: 2015

COURSE / STRAND	NL.6N.	Number
STRAND / GCO		Number: Develop number sense.
GCO / SCO	6N6.	Demonstrate an understanding of percent (limited to whole numbers), concretely, pictorially and symbolically. [C, CN, PS, R, V]
OUTCOME / INDICATOR	6N6.6.	Express a given percent as a fraction and a decimal.

COURSE / STRAND	NL.6SP.	Statistics and Probability
STRAND / GCO		Data Analysis: Collect, display and analyze data to solve problems.
GCO / SCO	6SP2.	Select, justify and use appropriate methods of collecting data, including: questionnaires; experiments; databases; electronic media. [C, CN, PS, R, T]

OUTCOME / INDICATOR 6SP2.2. Explain when it is appropriate to use a database as a source of data.

OUTCOME / INDICATOR 6SP2.5. Select a method for collecting data to answer a given question, and justify the choice.

Newfoundland and Labrador Curriculum Guides

Science

Grade 5 - Adopted: 2017

COURSE / STRAND	NL.5.GCO.	General Curriculum Outcomes
STRAND / GCO	5.GCO.1	Science, Technology, Society, and the Environment – 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.

GCO / SCO 5.GCO.1.1. Demonstrate that science and technology use specific processes to investigate the natural and constructed world or to seek solutions to practical problems

GCO / SCO 5.GCO.1.3. Describe ways that science and technology work together in investigating questions and problems and in meeting specific needs

GCO / SCO 5.GCO.1.4. Describe applications of science and technology that have developed in response to human and environmental needs

GCO / SCO 5.GCO.1.5. Describe positive and negative effects that result from applications of science and technology in their own lives, the lives of others, and the environment

COURSE / STRAND	NL.5.GCO.	General Curriculum Outcomes
STRAND / GCO	5.GCO.3	Knowledge – Students will construct knowledge and understandings of concepts in life science, physical science, and Earth and space science, and apply these understandings to interpret, integrate, and extend their knowledge.

GCO / SCO 5.GCO.3.1. Describe and compare characteristics and properties of living things, objects, and materials

GCO / SCO 5.GCO.3.4. Describe forces, motion, and energy and relate them to phenomena in their observable environment

COURSE / STRAND	NL.5.GCO.	General Curriculum Outcomes
STRAND / GCO	5.GCO.4	Attitudes – Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment.

GCO / SCO 5.GCO.4.1. Appreciate the role and contribution of science and technology in their understanding of the world

GCO / SCO	5.GCO.4.2.	Realize that the applications of science and technology can have both intended and unintended effects
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GCO / SCO	5.GCO.4.4.	Show interest and curiosity about objects and events within different environments
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COURSE / STRAND	NL.5.SCO	Specific Curriculum Outcomes
STRAND / GCO	5.SCO.i.	Unit i: Integrated Skills
GCO / SCO		Initiating and Planning

OUTCOME / INDICATOR	5.SCO.i.7.0.	Identify appropriate tools, instruments, and materials to complete investigations [GCO 2]
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COURSE / STRAND	NL.5.SCO	Specific Curriculum Outcomes
STRAND / GCO	5.SCO.i.	Unit i: Integrated Skills
GCO / SCO		Performing and Recording

OUTCOME / INDICATOR	5.SCO.i.9.0.	Select and use tools [GCO 2]
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OUTCOME / INDICATOR	5.SCO.i.1.0.0.	Follow procedures [GCO 2]
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OUTCOME / INDICATOR	5.SCO.i.1.1.0.	Select and use tools for measuring [GCO 2]
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OUTCOME / INDICATOR	5.SCO.i.1.5.0.	Identify and use a variety of sources and technologies to gather relevant information [GCO 2]
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OUTCOME / INDICATOR	5.SCO.i.1.6.0.	Construct and use devices for a specific purpose [GCO 2]
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COURSE / STRAND	NL.5.SCO	Specific Curriculum Outcomes
STRAND / GCO	5.SCO.i.	Unit i: Integrated Skills
GCO / SCO		Analyzing and Interpreting

OUTCOME / INDICATOR	5.SCO.i.2.2.0.	Suggest improvements to a design or constructed object [GCO 2]
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COURSE / STRAND	NL.5.SCO	Specific Curriculum Outcomes
STRAND / GCO	5.SCO.1.	Unit 1: Weather
GCO / SCO		What Are the Properties of Air?

OUTCOME / INDICATOR	5.SCO.1.32.0.	Explore and describe situations demonstrating properties of air [GCO 3]
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COURSE / STRAND	NL.5.SCO	Specific Curriculum Outcomes
STRAND / GCO	5.SCO.1.	Unit 1: Weather
GCO / SCO		What Makes Air Move?

OUTCOME / INDICATOR 5.SCO.1. Identify patterns in indoor and outdoor air movement [GCO 3]
34.0.

COURSE / STRAND	NL.5.SCO	Specific Curriculum Outcomes
STRAND / GCO	5.SCO.2.	Unit 2: Forces and Simple Machines
GCO / SCO		What Is a Simple Machine?

OUTCOME / INDICATOR 5.SCO.2. Describe examples of technologies that have been developed to improve living conditions [GCO 1]
49.0.

OUTCOME / INDICATOR 5.SCO.2. Demonstrate that specific terminology is used in science and technology contexts [GCO 1]
29.0.

COURSE / STRAND	NL.5.SCO	Specific Curriculum Outcomes
STRAND / GCO	5.SCO.2.	Unit 2: Forces and Simple Machines
GCO / SCO		What Is a Force Advantage?

OUTCOME / INDICATOR 5.SCO.2. Investigate and compare the force needed to lift a load manually with that required to lift it using a simple machine [GCO 3]
50.0.

COURSE / STRAND	NL.5.SCO	Specific Curriculum Outcomes
STRAND / GCO	5.SCO.2.	Unit 2: Forces and Simple Machines
GCO / SCO		How Have Simple Machines Changed over Time?

OUTCOME / INDICATOR 5.SCO.2. Identify examples of scientific knowledge that have developed as a result of the gradual accumulation of evidence [GCO 1]
55.0.

COURSE / STRAND	NL.5.SCO	Specific Curriculum Outcomes
STRAND / GCO	5.SCO.3.	Unit 3: Properties and Changes of Materials
GCO / SCO		How Does Using Materials Affect Our Environment?

OUTCOME / INDICATOR 5.SCO.3. Describe the impact of school and community on natural resources [GCO 1]
66.0.

Newfoundland and Labrador Curriculum Guides

Science

Grade 6 - Adopted: 2018

COURSE / STRAND	NL.6.GCO.	General Curriculum Outcomes
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STRAND / GCO	6.GCO.1	Science, Technology, Society, and the Environment – 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.
GCO / SCO	6.GCO.1.1.	Demonstrate that science and technology use specific processes to investigate the natural and constructed world or to seek solutions to practical problems
GCO / SCO	6.GCO.1.3.	Describe ways that science and technology work together in investigating questions and problems and in meeting specific needs
GCO / SCO	6.GCO.1.4.	Describe applications of science and technology that have developed in response to human and environmental needs
GCO / SCO	6.GCO.1.5.	Describe positive and negative effects that result from applications of science and technology in their own lives, the lives of others, and the environment
COURSE / STRAND	NL.6.GCO.	General Curriculum Outcomes
STRAND / GCO	6.GCO.3	Knowledge – Students will construct knowledge and understandings of concepts in life science, physical science, and Earth and space science, and apply these understandings to interpret, integrate, and extend their knowledge.
GCO / SCO	6.GCO.3.1.	Describe and compare characteristics and properties of living things, objects, and materials
GCO / SCO	6.GCO.3.2.	Describe and predict causes, effects, and patterns related to change in living and non-living things
GCO / SCO	6.GCO.3.4.	Describe forces, motion, and energy and relate them to phenomena in their observable environment
COURSE / STRAND	NL.6.GCO.	General Curriculum Outcomes
STRAND / GCO	6.GCO.4.	Attitudes – Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment.
GCO / SCO	6.GCO.4.1.	Appreciate the role and contribution of science and technology in their understanding of the world
GCO / SCO	6.GCO.4.2.	Realize that the applications of science and technology can have both intended and unintended effects
GCO / SCO	6.GCO.4.8.	Appreciate the importance of accuracy and honesty
COURSE / STRAND	NL.6.SCO	Specific Curriculum Outcomes
STRAND / GCO	6.SCO.i.	Unit i: Integrated Skills
GCO / SCO		Initiating and Planning
OUTCOME / INDICATOR	6.SCO.i.8.0.	Identify appropriate tools, instruments, and materials to complete investigations [GCO 2]

COURSE / STRAND	NL.6.SCO	Specific Curriculum Outcomes
STRAND / GCO	6.SCO.i.	Unit i: Integrated Skills
GCO / SCO		Performing and Recording

OUTCOME / INDICATOR 6.SCO.i.9 .0. Carry out procedures to explore a given problem and to ensure a fair test, controlling major variables [GCO 2]

OUTCOME / INDICATOR 6.SCO.i.1 0.0. Select and use tools [GCO 2]

OUTCOME / INDICATOR 6.SCO.i.1 1.0. Follow procedures [GCO 2]

OUTCOME / INDICATOR 6.SCO.i.1 4.0. Identify and use a variety of sources and technologies to gather relevant information [GCO 2]

OUTCOME / INDICATOR 6.SCO.i.1 6.0. Construct and use devices for a specific purpose [GCO 2]

COURSE / STRAND	NL.6.SCO	Specific Curriculum Outcomes
STRAND / GCO	6.SCO.i.	Unit i: Integrated Skills
GCO / SCO		Analyzing and Interpreting

OUTCOME / INDICATOR 6.SCO.i.2 2.0. Suggest improvements to a design or constructed object [GCO 2]

COURSE / STRAND	NL.6.SCO	Specific Curriculum Outcomes
STRAND / GCO	6.SCO.3.	Unit 3: Electricity
GCO / SCO		How Can We Use Electrical Energy to Create Other Forms of Energy?

OUTCOME / INDICATOR 6.SCO.3. 58.0. Demonstrate how electricity in circuits can produce light, heat, sound, motion, and magnetic effects [GCO 3]

OUTCOME / INDICATOR 6.SCO.3. 1.0. Propose questions to investigate and practical problems to solve [GCO 2]

COURSE / STRAND	NL.6.SCO	Specific Curriculum Outcomes
STRAND / GCO	6.SCO.3.	Unit 3: Electricity
GCO / SCO		How Can We Change the Strength of an Electromagnet?

OUTCOME / INDICATOR 6.SCO.3. 58.0. Demonstrate how electricity in circuits can produce light, heat, sound, motion, and magnetic effects [GCO 3]

COURSE / STRAND	NL.6.SCO	Specific Curriculum Outcomes
STRAND / GCO	6.SCO.3.	Unit 3: Electricity

GCO / SCO		How Is Most Electricity Generated?
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OUTCOME / INDICATOR 6.SCO.3. Identify various methods by which electricity can be generated [GCO 3] 60.0.

OUTCOME / INDICATOR 6.SCO.3. Describe examples of scientific questions and technological problems that have been addressed differently at 61.0. different times [GCO 1]

OUTCOME / INDICATOR 6.SCO.3. Describe intended and unintended effects of a scientific or technological development [GCO 1] 62.0.

COURSE / STRAND	NL.6.SCO	Specific Curriculum Outcomes
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STRAND / GCO	6.SCO.3.	Unit 3: Electricity
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GCO / SCO		What Sources of Electricity Are Renewable or Non-Renewable?
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OUTCOME / INDICATOR 6.SCO.3. Identify and explain sources of electricity as renewable or non-renewable [GCO 3] 63.0.

**Nova Scotia Curriculum
Mathematics
Grade 5 - Adopted: 2015**

GENERAL LEARNING OUTCOME	NS.5.GC O.	General Curriculum Outcomes
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CURRICULUM OUTCOME 5.GCO.7. Collect, display, and analyze data to solve problems

GENERAL LEARNING OUTCOME	NS.5.SCO	Specific Curriculum Outcomes
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CURRICULUM OUTCOME	5.SCO.N	Number (N)
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GRADE LEVEL EXPECTATION	5.SCO.N 09.	Students will be expected to relate decimals to fractions and fractions to decimals (to thousandths). [CN, R, V]
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EXPECTATION 5.SCO.N Express, orally and symbolically, a given fraction with a denominator of 10, 100, or 1000 as a decimal 09.01.

EXPECTATION 5.SCO.N Read decimals as fractions (e.g., 0.45 is read as zero and forty-five hundredths) 09.02.

EXPECTATION 5.SCO.N Express, orally and symbolically, a given decimal in fraction form 09.03.

EXPECTATION 5.SCO.N Represent the fractions $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{3}{4}$ as decimals using base-ten blocks, grids, and number lines 09.04.

**Nova Scotia Curriculum
Mathematics
Grade 6 - Adopted: 2014**

GENERAL LEARNING OUTCOME	NS.6.GC O.	General Curriculum Outcomes
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CURRICULUM OUTCOME 6.GCO.7. Students will be expected to collect, display, and analyze data to solve problems.

GENERAL LEARNING OUTCOME	NS.6.SCO .	Specific Curriculum Outcomes
CURRICULUM OUTCOME	6.SCO.N .	Number (N)
GRADE LEVEL EXPECTATION	6.SCO.N 06.	Students will be expected to demonstrate an understanding of percent (limited to whole numbers) concretely, pictorially, and symbolically. [C, CN, PS, R, V]

EXPECTATION 6.SCO.N 06.05. Express a given percent as a fraction and a decimal.

GENERAL LEARNING OUTCOME	NS.6.SCO .	Specific Curriculum Outcomes
CURRICULUM OUTCOME	6.SCO.S P.	Statistics and Probability
GRADE LEVEL EXPECTATION	6.SCO.S P02.	Students will be expected to select, justify, and use appropriate methods of collecting data, including questionnaires, experiments, databases, and electronic media. [C, PS, T]

EXPECTATION 6.SCO.S P02.01. Select a method for collecting data to answer a given question, and justify the choice.

EXPECTATION 6.SCO.S P02.05. Gather data for a given question by using electronic media, including selecting data from databases.

**Nova Scotia Curriculum
Science
Grade 5 - Adopted: 2015**

GENERAL LEARNING OUTCOME	NS.5.GC O.	General Curriculum Outcomes
CURRICULUM OUTCOME	5.GCO.1 .	STSE/Knowledge

GRADE LEVEL EXPECTATION 5.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. (STSE)

GRADE LEVEL EXPECTATION 5.GCO.1. 3. Students will construct knowledge and understandings of concepts in life science, physical science, and Earth and space science, and apply these understandings to interpret, integrate, and extend their knowledge. (Knowledge)

GENERAL LEARNING OUTCOME	NS.5.GC O.	General Curriculum Outcomes
CURRICULUM OUTCOME	5.GCO.2 .	Skills

GRADE LEVEL EXPECTATION 5.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.

GENERAL LEARNING OUTCOME	NS.5.GCO.	General Curriculum Outcomes
CURRICULUM OUTCOME	5.GCO.3	Attitudes

GRADE LEVEL EXPECTATION 5.GCO.3.4. Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment.

GENERAL LEARNING OUTCOME	NS.5.SCO.	Specific Curriculum Outcomes
CURRICULUM OUTCOME	5.SCO.ESS.	Earth and Space Science: Weather
GRADE LEVEL EXPECTATION	5.SCO.ESS.3.	PROPERTIES OF AIR

EXPECTATION 5.SCO.ESS.3.1. Describe situations demonstrating that air takes up space, has mass, and expands when heated (300-14)

GENERAL LEARNING OUTCOME	NS.5.SCO.	Specific Curriculum Outcomes
CURRICULUM OUTCOME	5.SCO.PSF.	Physical Science: Forces and Simple Machines
GRADE LEVEL EXPECTATION	5.SCO.PSF.4.	SIMPLE MACHINES: PULLEYS, SYSTEMS OF MACHINES

EXPECTATION 5.SCO.PSF.4.2. Design a system of machines to solve a task (204-7)

**Nova Scotia Curriculum
Science
Grade 6 - Adopted: 2015**

GENERAL LEARNING OUTCOME	NS.6.GCO.	General Curriculum Outcomes
CURRICULUM OUTCOME	6.GCO.1	STSE/Knowledge

GRADE LEVEL EXPECTATION 6.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. (STSE)

GRADE LEVEL EXPECTATION 6.GCO.1.3. Students will construct knowledge and understandings of concepts in life science, physical science, and Earth and space science, and apply these understandings to interpret, integrate, and extend their knowledge. (Knowledge)

GENERAL LEARNING OUTCOME	NS.6.GCO.	General Curriculum Outcomes
CURRICULUM OUTCOME	6.GCO.2	Skills

GRADE LEVEL EXPECTATION 6.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.

GENERAL LEARNING OUTCOME	NS.6.GC O.	General Curriculum Outcomes
CURRICULUM OUTCOME	6.GCO.3	Attitudes

GRADE LEVEL EXPECTATION 6.GCO.3.4. Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment.

GENERAL LEARNING OUTCOME	NS.6.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	6.SCO.P SE.	Physical Science: Electricity
GRADE LEVEL EXPECTATION	6.SCO.P SE.1.	USES FOR ELECTRICITY

EXPECTATION 6.SCO.P SE.1.1. Demonstrate how electricity in circuits can produce light, heat, sound motion, and magnetic effects (303-26)

EXPECTATION 6.SCO.P SE.1.2. Describe how electricity has led to inventions and discuss electrical safety features at work and at play (107-9, 106-4, 108-2, 303-31)

GENERAL LEARNING OUTCOME	NS.6.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	6.SCO.P SE.	Physical Science: Electricity
GRADE LEVEL EXPECTATION	6.SCO.P SE.4.	ELECTROMAGNETS AND ELECTRIC GENERATORS

EXPECTATION 6.SCO.P SE.4.1. Investigate and describe the relationship between electricity and magnetism using electromagnets and electric generators (204-1, 303-27, 303-22)

GENERAL LEARNING OUTCOME	NS.6.SCO	Specific Curriculum Outcomes
CURRICULUM OUTCOME	6.SCO.P SE.	Physical Science: Electricity
GRADE LEVEL EXPECTATION	6.SCO.P SE.5.	CONSUMPTION AND CONSERVATION

EXPECTATION 6.SCO.P SE.5.1. Explain various methods by which electricity is generated including renewable and non-renewable (105-3, 303-28, 303-29)

**Prince Edward Island Curriculum
Mathematics
Grade 5 - Adopted: 2012**

STRAND / COURSE	PE.5.N.	Number (N): Develop number sense.
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GENERAL LEARNING OUTCOME 5.N9. Relate decimals to fractions (to thousandths).

Prince Edward Island Curriculum

Science

Grade 5 - Adopted: 2012

STRAND / COURSE	PE.5.3.	Physical Science: Forces and Simple Machines
GENERAL LEARNING OUTCOME	5.3.3.	Simple Machines: An Introduction
CURRICULUM OUTCOME		Students will be expected to

GRADE LEVEL EXPECTATION 5.3.3.1. Use simple machines to reduce effort or increase the distance an object moves (205-2).

GRADE LEVEL EXPECTATION 5.3.3.2. Compare the force needed to lift or move a load manually with the effort required to lift it using a simple machine (303-17).

GRADE LEVEL EXPECTATION 5.3.3.3. Identify problems that consider a large amount of effort needed to lift or move heavy objects, using the knowledge they gained through the study of forces (206-9).

STRAND / COURSE	PE.5.4.	Earth and Space Science: Weather
GENERAL LEARNING OUTCOME	5.4.3.	Properties of Air
CURRICULUM OUTCOME		Students will be expected to

GRADE LEVEL EXPECTATION 5.4.3.2. Draw a conclusion, based on evidence gathered through research and observation, about the patterns of air and/or water flow that result when two air or water masses of different temperature meet (206-5).

STRAND / COURSE	PE.5.4.	Earth and Space Science: Weather
GENERAL LEARNING OUTCOME	5.4.4.	Movement of Air and Water
CURRICULUM OUTCOME		Students will be expected to

GRADE LEVEL EXPECTATION 5.4.4.1. Identify patterns in indoor and outdoor air movement (302-10).

Prince Edward Island Curriculum

Science

Grade 6 - Adopted: 2012

STRAND / COURSE	PE.6.2.	Physical Science: Electricity
GENERAL LEARNING OUTCOME	6.2.4.	Electromagnets and their Applications
CURRICULUM OUTCOME		Students will be expected to

GRADE LEVEL EXPECTATION 6.2.4.3. Describe how knowledge of electromagnets has led to the development of many electrical devices that use them (106-3).

STRAND / COURSE	PE.6.2.	Physical Science: Electricity
GENERAL LEARNING OUTCOME	6.2.5.	Uses for Electricity
CURRICULUM OUTCOME		Students will be expected to

GRADE LEVEL EXPECTATION 6.2.5.1. Demonstrate how electricity in circuits can produce light, heat, sound, motion, and magnetic effects (303-26).

GRADE LEVEL EXPECTATION 6.2.5.3. Describe how knowledge of electricity has led to many new inventions that have changed the way we live, and describe ways in which we have become increasingly dependent on electricity over the years (107-9, 106-4).

STRAND / COURSE	PE.6.2.	Physical Science: Electricity
GENERAL LEARNING OUTCOME	6.2.6.	Sources of Electricity
CURRICULUM OUTCOME		Students will be expected to

GRADE LEVEL EXPECTATION 6.2.6.1. Describe how knowledge that magnets can produce electric current led to the invention of electrical generators (106-4).

GRADE LEVEL EXPECTATION 6.2.6.2. Identify and investigate various methods of generating electricity (past, present, and future), and describe some ways in which these methods affect the environment (303-28, 105-3, 108-8).

GRADE LEVEL EXPECTATION 6.2.6.3. Identify and explain sources of electricity as renewable or nonrenewable (303-29).

**Saskatchewan Curriculum
Mathematics
Grade 5 - Adopted: 2008**

OUTCOME / COURSE	SK.N5.	Number Strand
FOCUS	N5.6.	Demonstrate understanding of decimals to thousandths by: describing and representing, relating to fractions, comparing and ordering.[C, CN, R, V]

OUTCOME N5.6.c. Recognize and generate equivalent forms (decimal or fraction) of fractions and decimals found in situations relevant to one's life, family, or community.

OUTCOME N5.6.f. Make and test conjectures about the relationship of equality of quantities written in decimal and fractional form (e.g., 0.7 and 107) and verify concretely, pictorially, or logically.

OUTCOME N5.6.g. Use and explain personal strategies for writing decimals as fractions.

OUTCOME N5.6.h. Use and explain personal strategies for writing fractions with a denominator of 10, 100, or 1000 as a decimal.

**Saskatchewan Curriculum
Mathematics
Grade 6 - Adopted: 2009**

OUTCOME / COURSE	SK.SP.6.	Statistics and Probability
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FOCUS SP6.1. Extend understanding of data analysis to include: line graphs; graphs of discrete data; data collection through questionnaires, experiments, databases, and electronic media; interpolation and extrapolation. [C, CN, PS, R, V, T]

**Saskatchewan Curriculum
Science
Grade 5 - Adopted: 2011**

OUTCOME / COURSE	SK.FM.	Physical Science: Forces and Simple Machines (FM)
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FOCUS	FM5.2.	Investigate characteristics of simple machines, including levers, wheels and axles, pulleys, inclined planes, screws, and wedges, for moving and lifting loads. [SI, TPS]
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OUTCOME FM5.2.a. Pose and refine testable questions about the operation of simple machines.

OUTCOME FM5.2.b. Demonstrate how simple machines (e.g., hammer, screwdriver, pliers, bottle opener, ramp, splitting wedges, and scissors) act to reduce effort, increase the distance a load moves, and/or change the direction of an applied force.

OUTCOME FM5.2.c. Select and safely use tools and materials in a manner that ensures personal safety and the safety of others when investigating the characteristics of simple machines.

OUTCOME FM5.2.k. Design and construct a prototype of a simple machine which is meant to accomplish a student-identified task.

OUTCOME FM5.2.m. Create a representation of the characteristics and operating principles of each type of simple machine.

OUTCOME FM5.2.n. Recognize that scientific processes and ideas help explain how and why simple machines operate.

OUTCOME FM5.2.o. Pose new questions to investigate about the characteristics of simple machines.

OUTCOME / COURSE	SK.FM.	Physical Science: Forces and Simple Machines (FM)
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FOCUS	FM5.3.	Assess how natural and man-made forces and simple machines affect individuals, society, and the environment. [CP, DM, SI]
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OUTCOME FM5.3.a. Provide examples of simple and complex machines used at home, in school, and throughout their community.

OUTCOME FM5.3.b. Compare technologies developed and/or used by various cultures, past and present, which represent applications of simple machines.

OUTCOME FM5.3.k. Analyze technologies that are based on principles of simple machines in sports and recreation (e.g., teeter-totter, water slide, gymnastics wedge, balance board, and roller coaster).

OUTCOME FM5.3.l. Analyze the ways in which various combinations of simple machines can be combined to create complex machines.

OUTCOME FM5.3.m. Imagine machines that could be developed to simplify tasks within their lives, including fanciful devices such as Rube Goldberg machines.

OUTCOME / COURSE	SK.WE.	Earth and Space Science: Weather (WE)
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FOCUS	WE5.1.	Measure and represent local weather, including temperature, wind speed and direction, amount of sunlight, precipitation, relative humidity, and cloud cover. [CP, SI, TPS]
OUTCOME	WE5.1.g.	Construct a wind rose to determine the predominant wind direction in a region over a given time period.
OUTCOME	WE5.1.l.	Pose new questions about local weather conditions based on what was learned.
OUTCOME / COURSE	SK.WE.	Earth and Space Science: Weather (WE)
FOCUS	WE5.2.	Investigate local, national, and global weather conditions, including the role of air movement and solar energy transfer. [SI]

OUTCOME	WE5.2.b.	Demonstrate properties of air, in that air takes up space, has weight, expands and rises when heated, exerts pressure, and moves from areas of high pressure to areas of low pressure.
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**Saskatchewan Curriculum
Science
Grade 6 - Adopted: 2009**

OUTCOME / COURSE	SK.EL.	Physical Science: Understanding Electricity (EL)
FOCUS	EL6.1.	Assess personal, societal, economic, and environmental impacts of electricity use in Saskatchewan and propose actions to reduce those impacts. [CP, DM]

OUTCOME	EL6.1.a.	Provide examples of the types of energy sources used to provide heat and light to homes in the past and describe ways in which electricity-based technologies have changed the way people work, live, and interact with the environment in Saskatchewan.
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OUTCOME	EL6.1.b.	Describe how electrical energy is generated from hydroelectric, coal, natural gas, nuclear, geothermal, biomass, solar, and wind sources and categorize these resources as renewable or non-renewable.
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OUTCOME	EL6.1.c.	Locate and categorize by type the large-scale electrical energy generation facilities in Saskatchewan and explain how electrical energy is transmitted from those facilities to locations throughout the province.
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OUTCOME / COURSE	SK.EL.	Physical Science: Understanding Electricity (EL)
FOCUS	EL6.3.	Explain and model the properties of simple series and parallel circuits. [SI, TPS]

OUTCOME	EL6.3.g.	Construct simple circuits to demonstrate how electrical energy can be controlled to produce light, heat, sound, motion, and magnetic effects.
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OUTCOME / COURSE	SK.FL.	Physical Science: Principles of Flight (FL)
FOCUS	FL6.3.	Design a working prototype of a flying object that meets specified performance criteria. [TPS]

OUTCOME	FL6.3.b.	Construct a prototype of a flying object that meets student-specified performance and aesthetic criteria.
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OUTCOME	FL6.3.c.	Work collaboratively with classmates to define criteria for judging the performance and aesthetics of a prototype of a flying object.
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OUTCOME	FL6.3.d.	Select and carefully use appropriate tools in manipulating materials and in building prototypes.
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OUTCOME	FL6.3.e.	Work collaboratively to collect relevant observations and data to evaluate the performance of a prototype of an object that will fly.
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OUTCOME	FL6.3.f.	Demonstrate and explain the importance of selecting appropriate processes for investigating scientific questions and solving technological problems (e.g., explain why it is important to change one variable while keeping others constant in designing and testing prototypes of flying objects).
OUTCOME	FL6.3.g.	Analyze personally collected data and suggest improvements to a prototype design.
OUTCOME	FL6.3.h.	Communicate procedures and results of prototype design, construction, testing, and evaluation in a technical design report.
OUTCOME	FL6.3.i.	Identify new questions or problems about flight that arise through the prototype design process.
OUTCOME	FL6.3.j.	Propose designs for futuristic flying devices that meet a particular student-identified need.