

Main Criteria: Forward Education
Secondary Criteria: Ontario Curriculum
Subjects: Mathematics, Science, Technology Education
Grades: 5, 6, Key Stage 2

Forward Education

How Wind Turbines Capture Kinetic Energy

Ontario Curriculum
Mathematics
 Grade 5 - Adopted: 2020

STRAND / COURSE		Ontario Mathematics Curriculum Expectations – Grade 5
STRAND / OVERALL EXPECTATION	B.	NUMBER
STAGE / SKILLS	B1.	demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life
SUB-ORGANIZER / SPECIFIC EXPECTATION		Fractions, Decimals, and Percents

EXPECTATION B1.7. describe relationships and show equivalences among fractions, decimal numbers up to hundredths, and whole number percents, using appropriate tools and drawings, in various contexts

STRAND / COURSE		Ontario Mathematics Curriculum Expectations – Grade 5
STRAND / OVERALL EXPECTATION	B.	NUMBER
STAGE / SKILLS	B1.	demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life
SUB-ORGANIZER / SPECIFIC EXPECTATION		Addition and Subtraction

EXPECTATION B2.4. represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 100 000, and of decimal numbers up to hundredths, using appropriate tools, strategies, and algorithms

Ontario Curriculum
Mathematics
 Grade 6 - Adopted: 2020

STRAND / COURSE		Ontario Mathematics Curriculum Expectations – Grade 6
STRAND / OVERALL EXPECTATION	B.	NUMBER
STAGE / SKILLS	B1.	demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life
SUB-ORGANIZER / SPECIFIC EXPECTATION		Fractions, Decimals, and Percents

EXPECTATION B1.6. describe relationships and show equivalences among fractions and decimal numbers up to thousandths, using appropriate tools and drawings, in various contexts

STRAND / COURSE		Ontario Mathematics Curriculum Expectations – Grade 6
STRAND / OVERALL EXPECTATION	B.	NUMBER
STAGE / SKILLS	B2.	use knowledge of numbers and operations to solve mathematical problems encountered in everyday life
SUB-ORGANIZER / SPECIFIC EXPECTATION		Addition and Subtraction

EXPECTATION B2.4. represent and solve problems involving the addition and subtraction of whole numbers and decimal numbers, using estimation and algorithms

**Ontario Curriculum
Science
Grade 5 - Adopted: 2022**

STRAND / COURSE		Science and Technology Grade 5
STRAND / OVERALL EXPECTATION	STRAND A:	STEM Skills and Connections - Throughout Grade 5, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:
STAGE / SKILLS	A1.	STEM Investigation and Communication Skills: use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures

SUB-ORGANIZER / SPECIFIC EXPECTATION A1.3. use an engineering design process and associated skills to design, build, and test devices, models, structures, and/or systems

SUB-ORGANIZER / SPECIFIC EXPECTATION A1.5. communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes

STRAND / COURSE		Science and Technology Grade 5
STRAND / OVERALL EXPECTATION	STRAND A:	STEM Skills and Connections - Throughout Grade 5, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:
STAGE / SKILLS	A2.	Coding and Emerging Technologies: use coding in investigations and to model concepts, and assess the impact of coding and of emerging technologies on everyday life and in STEM-related fields

SUB-ORGANIZER / SPECIFIC EXPECTATION A2.1. write and execute code in investigations and when modelling concepts, with a focus on using different methods to store and process data for a variety of purposes

SUB-ORGANIZER / SPECIFIC EXPECTATION A2.2. identify and describe impacts of coding and of emerging technologies on everyday life, including skilled trades

STRAND / COURSE		Science and Technology Grade 5
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STRAND / OVERALL EXPECTATION	STRAND A:	STEM Skills and Connections - Throughout Grade 5, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:
STAGE / SKILLS	A3.	Applications, Connections, and Contributions: demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences

SUB-ORGANIZER / SPECIFIC EXPECTATION A3.2. investigate how science and technology can be used with other subject areas to address real-world problems

STRAND / COURSE		Science and Technology Grade 5
STRAND / OVERALL EXPECTATION	STRAND E:	Earth and Space Systems Conservation of Energy and Resources By the end of Grade 5, students will:
STAGE / SKILLS	E1.	Relating Science and Technology to Our Changing World: assess effects of energy and resource use on society and the environment, and suggest options for conserving energy and resources

SUB-ORGANIZER / SPECIFIC EXPECTATION E1.2. evaluate effects of various technologies on energy consumption, and describe ways in which individuals can use technology to reduce energy consumption

STRAND / COURSE		Science and Technology Grade 5
STRAND / OVERALL EXPECTATION	STRAND E:	Earth and Space Systems Conservation of Energy and Resources By the end of Grade 5, students will:
STAGE / SKILLS	E2.	Exploring and Understanding Concepts: demonstrate an understanding of the conservation of energy, and the forms, sources, and uses of energy and resources

SUB-ORGANIZER / SPECIFIC EXPECTATION E2.1. identify a variety of forms of energy, and describe how each form is used in everyday life

SUB-ORGANIZER / SPECIFIC EXPECTATION E2.3. describe how energy is stored as potential energy and transformed in a given device or system

SUB-ORGANIZER / SPECIFIC EXPECTATION E2.5. identify renewable and non-renewable sources of energy

**Ontario Curriculum
Science
Grade 6 - Adopted: 2022**

STRAND / COURSE		Science and Technology Grade 6
STRAND / OVERALL EXPECTATION	STRAND A:	STEM Skills and Connections - Throughout Grade 6, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:

STAGE / SKILLS	A1.	STEM Investigation and Communication Skills: use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures
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SUB-ORGANIZER / SPECIFIC EXPECTATION	A1.3.	use an engineering design process and associated skills to design, build, and test devices, models, structures, and/or systems
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SUB-ORGANIZER / SPECIFIC EXPECTATION	A1.5.	communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes
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STRAND / COURSE		Science and Technology Grade 6
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STRAND / OVERALL EXPECTATION	STRAND A:	STEM Skills and Connections - Throughout Grade 6, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:
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STAGE / SKILLS	A2.	Coding and Emerging Technologies: use coding in investigations and to model concepts, and assess the impact of coding and of emerging technologies on everyday life and in STEM-related fields
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SUB-ORGANIZER / SPECIFIC EXPECTATION	A2.1.	write and execute code in investigations and when modelling concepts, with a focus on obtaining input in different ways for a variety of purposes
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SUB-ORGANIZER / SPECIFIC EXPECTATION	A2.2.	identify and describe impacts of coding and of emerging technologies on everyday life, including skilled trades
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STRAND / COURSE		Science and Technology Grade 6
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STRAND / OVERALL EXPECTATION	STRAND A:	STEM Skills and Connections - Throughout Grade 6, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:
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STAGE / SKILLS	A3.	Applications, Connections, and Contributions: demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences
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SUB-ORGANIZER / SPECIFIC EXPECTATION	A3.2.	investigate how science and technology can be used with other subject areas to address realworld problems
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STRAND / COURSE		Science and Technology Grade 6
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STRAND / OVERALL EXPECTATION	STRAND C:	Matter and Energy - Electrical Phenomena, Energy, and Devices By the end of Grade 6, students will:
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STAGE / SKILLS	C1.	Relating Science and Technology to Our Changing World: evaluate the impact of the use and generation of electrical energy on society and the environment, and suggest ways to use electrical energy responsibly
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SUB-ORGANIZER / SPECIFIC EXPECTATION	C1.1.	assess the short- and long-term impacts of electrical energy generation technologies in Canada on society and the environment, including impacts on First Nations, Métis, and Inuit communities, and on climate change
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STRAND / COURSE		Science and Technology Grade 6
STRAND / OVERALL EXPECTATION	STRAND C:	Matter and Energy - Electrical Phenomena, Energy, and Devices By the end of Grade 6, students will:
STAGE / SKILLS	C2.	Exploring and Understanding Concepts: demonstrate an understanding of the principles of electrical energy and its transformation into and from other forms of energy

SUB-
ORGANIZER /
SPECIFIC
EXPECTATION

C2.4.

describe how technologies transform various forms of energy into electrical energy

SUB-
ORGANIZER /
SPECIFIC
EXPECTATION

C2.5.

describe ways in which electrical energy is transformed into other forms of energy