Main Criteria: Forward Education

Secondary Criteria: Ontario Curriculum

Subjects: Mathematics, Science, Technology Education

Grades: 5, 6, Key Stage 2

Forward Education

Smart Farming with Automated Watering

Ontario Curriculum

Mathematics

Grade **5** - Adopted: **2020**

STRAND / COURSE		Ontario Mathematics Curriculum Expectations – Grade 5
STRAND / OVERALL EXPECTATION	C.	ALGEBRA
STAGE / SKILLS	C2.	demonstrate an understanding of variables, expressions, equalities, and inequalities, and apply this understanding in various contexts
SUB-ORGANIZER / SPECIFIC EXPECTATION		Equalities and Inequalities
EXPECTATION	C2.3.	solve equations that involve whole numbers up to 100 in various contexts, and verify solutions

STRAND / COURSE		Ontario Mathematics Curriculum Expectations – Grade 5
STRAND / OVERALL EXPECTATION	D.	DATA
STAGE / SKILLS	D1.	manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life
SUB-ORGANIZER / SPECIFIC EXPECTATION		Data Collection and Organization
EXPECTATION	D1.2.	collect data, using appropriate sampling techniques as needed, to answer questions of interest about a population, and organize the data in relative-frequency tables

STRAND / COURSE		Ontario Mathematics Curriculum Expectations – Grade 5
STRAND / OVERALL EXPECTATION	D.	DATA
STAGE / SKILLS	D1.	manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life
SUB-ORGANIZER / SPECIFIC EXPECTATION		Data Visualization
EXPECTATION	D1.4.	create an infographic about a data set, representing the data in appropriate ways, including in relative-frequency tables and stacked-bar graphs, and incorporating any other relevant information that helps to tell a story about the data

Ontario Curriculum

Mathematics

Grade **6** - Adopted: **2020**

STRAND / COURSE		Ontario Mathematics Curriculum Expectations – Grade 6
STRAND / OVERALL EXPECTATION	C.	ALGEBRA
STAGE / SKILLS	C2.	demonstrate an understanding of variables, expressions, equalities, and inequalities, and apply this understanding in various contexts
SUB-ORGANIZER / SPECIFIC EXPECTATION		Equalities and Inequalities
EXPECTATION	C2.3.	solve equations that involve multiple terms and whole numbers in various contexts, and verify solutions

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

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 C:**	**Matter and Energy - Properties of and Changes in Matter By the end of Grade 5, students will:**
STAGE / SKILLS	**C1.**	**Relating Science and Technology to Our Changing World: assess the impacts on society and the environment of various processes and materials used in the manufacture of common products, and ways to mitigate negative impacts**
SUB-ORGANIZER / SPECIFIC EXPECTATION	C1.2.	assess how the use of specific materials in the manufacture of common products affects the environment, and identify actions that society and individuals can take to mitigate negative impacts

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	E1.1.	analyse long-term impacts of human uses of energy and natural resources, on society and the environment, including climate change, and suggest ways to mitigate these impacts
SUB-ORGANIZER / SPECIFIC EXPECTATION	E1.3.	analyse how First Nations, Métis, and Inuit communities use their knowledges and ways of knowing to conserve energy and resources

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**

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 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	**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 obtaining input in different ways 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 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	**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 realworld problems

STRAND / COURSE		**Science and Technology Grade 6**
STRAND / OVERALL EXPECTATION	**STRAND B:**	**Life Systems - Biodiversity By the end of Grade 6, students will:**
STAGE / SKILLS	**B1.**	**Relating Science and Technology to Our Changing World: assess the importance of biodiversity, and describe ways of protecting biodiversity**
SUB-ORGANIZER / SPECIFIC EXPECTATION	B1.2.	analyse a local issue related to biodiversity while considering different perspectives; plan a course of action in response to the issue; and act on their plan

STRAND / COURSE		**Science and Technology Grade 6**

STRAND / OVERALL EXPECTATION	STRAND B:	Life Systems - Biodiversity By the end of Grade 6, students will:
STAGE / SKILLS	**B2.**	**Exploring and Understanding Concepts: demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans**
SUB-ORGANIZER / SPECIFIC EXPECTATION	B2.8.	describe the importance of biodiversity in supporting agriculture, including Indigenous agriculture around the world