

**Main Criteria:** Forward  
**Secondary Criteria:** The Ontario Curriculum  
**Subjects:** Mathematics, Science, Technology Education  
**Grades:** 5, 6, 7, 8, Key Stage 2, Key Stage 3

## Forward

### Solar Water Disinfection (SODIS)

**The Ontario Curriculum**  
**Mathematics**  
Grade 7 - Adopted: 2020

<b>STRAND / COURSE</b>		<b>Ontario Mathematics Curriculum Expectations – Grade 7</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>E.</b>	<b>SPATIAL SENSE</b>
<b>STAGE / SKILLS</b>	<b>E2.</b>	<b>compare, estimate, and determine measurements in various contexts</b>
<b>SUB-ORGANIZER / SPECIFIC EXPECTATION</b>		<b>Volume and Surface Area</b>

EXPECTATION	E2.7.	show that the volume of a prism or cylinder can be determined by multiplying the area of its base by its height, and apply this relationship to find the area of the base, volume, and height of prisms and cylinders when given two of the three measurements
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**The Ontario Curriculum**  
**Science**  
Grade 5 - Adopted: 2022

<b>STRAND / COURSE</b>		<b>Science and Technology Grade 5</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>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:</b>
<b>STAGE / SKILLS</b>	<b>A1.</b>	<b>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</b>

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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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 5</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>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:</b>
<b>STAGE / SKILLS</b>	<b>A2.</b>	<b>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</b>

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
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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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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 5</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>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:</b>
<b>STAGE / SKILLS</b>	<b>A3.</b>	<b>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</b>

SUB-ORGANIZER / SPECIFIC EXPECTATION	A3.2.	investigate how science and technology can be used with other subject areas to address real-world problems
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The Ontario Curriculum  
Science  
Grade 6 - Adopted: 2022

<b>STRAND / COURSE</b>		<b>Science and Technology Grade 6</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>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:</b>
<b>STAGE / SKILLS</b>	<b>A1.</b>	<b>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</b>

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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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 6</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>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:</b>
<b>STAGE / SKILLS</b>	<b>A2.</b>	<b>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</b>

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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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 6</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>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:</b>
<b>STAGE / SKILLS</b>	<b>A3.</b>	<b>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</b>

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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**The Ontario Curriculum**  
**Science**  
Grade 7 - Adopted: 2022

<b>STRAND / COURSE</b>		<b>Science and Technology Grade 7</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>STEM Skills and Connections - Throughout Grade 7, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:</b>
<b>STAGE / SKILLS</b>	<b>A1.</b>	<b>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</b>

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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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 7</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>STEM Skills and Connections - Throughout Grade 7, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:</b>
<b>STAGE / SKILLS</b>	<b>A2.</b>	<b>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</b>

SUB-ORGANIZER / SPECIFIC EXPECTATION	A2.1.	write and execute code in investigations and when modelling concepts, with a focus on planning and designing programs
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SUB-ORGANIZER / SPECIFIC EXPECTATION	A2.2.	identify and describe impacts of coding and of emerging technologies, such as artificial intelligence systems, on everyday life, including skilled trades
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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 7</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>STEM Skills and Connections - Throughout Grade 7, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:</b>
<b>STAGE / SKILLS</b>	<b>A3.</b>	<b>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</b>

SUB-ORGANIZER / SPECIFIC EXPECTATION	A3.2.	investigate how science and technology can be used with other subject areas to address real-world problems
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The Ontario Curriculum  
Science  
Grade 8 - Adopted: 2022

<b>STRAND / COURSE</b>		<b>Science and Technology Grade 8</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>STEM Skills and Connections - Throughout Grade 8, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:</b>
<b>STAGE / SKILLS</b>	<b>A1.</b>	<b>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</b>

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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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 8</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>STEM Skills and Connections - Throughout Grade 8, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:</b>
<b>STAGE / SKILLS</b>	<b>A2.</b>	<b>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</b>

SUB-ORGANIZER / SPECIFIC EXPECTATION	A2.1.	write and execute code in investigations and when modelling concepts, with a focus on automating large systems in action
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SUB-ORGANIZER / SPECIFIC EXPECTATION	A2.2.	identify and describe impacts of coding and of emerging technologies, such as artificial intelligence systems, on everyday life, including skilled trades
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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 8</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND A:</b>	<b>STEM Skills and Connections - Throughout Grade 8, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:</b>
<b>STAGE / SKILLS</b>	<b>A3.</b>	<b>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</b>

SUB-ORGANIZER / SPECIFIC EXPECTATION	A3.2.	investigate how science and technology can be used with other subject areas to address real-world problems
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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 8</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND E:</b>	<b>Earth and Space Systems - Water Systems - By the end of Grade 8, students will:</b>
<b>STAGE / SKILLS</b>	<b>E1.</b>	<b>Relating Science and Technology to Our Changing World: assess the impact of human activities and technologies on the sustainability of water resources</b>

SUB-ORGANIZER / SPECIFIC EXPECTATION	E1.1.	assess the social and environmental impact of the scarcity of fresh water, and propose a plan of action to help address fresh water sustainability issues
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SUB-ORGANIZER / SPECIFIC EXPECTATION	E1.2.	demonstrate an understanding of First Nations, Métis, and Inuit knowledges and values about water, connections to water, and ways of managing water resources sustainably
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SUB-ORGANIZER / SPECIFIC EXPECTATION	E1.3.	assess the impact of scientific discoveries and technological innovations on local and global water systems
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<b>STRAND / COURSE</b>		<b>Science and Technology Grade 8</b>
<b>STRAND / OVERALL EXPECTATION</b>	<b>STRAND E:</b>	<b>Earth and Space Systems - Water Systems - By the end of Grade 8, students will:</b>
<b>STAGE / SKILLS</b>	<b>E2.</b>	<b>Exploring and Understanding Concepts: demonstrate an understanding of the characteristics of Earth's water systems and of factors that affect these systems</b>

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SUB-  
ORGANIZER /  
SPECIFIC  
EXPECTATION

E2.6.

describe various indicators of water quality, and explain the impact of human activity on those indicators

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SUB-  
ORGANIZER /  
SPECIFIC  
EXPECTATION

E2.7.

explain how municipalities process water and manage water usage