

Grade 8

Ontario Science Curriculum

The new Ontario science and technology curriculum is organized into five strands. Strand A is an overarching strand that focuses on STEM skills and connections. Strands B to E are Life Systems, Matter and Energy, Structures and Mechanisms, Earth and Space Systems

Expectations	Key Concepts		
A. STEM Skills and Connections			
<ol style="list-style-type: none"> 1. use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures 2. 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 3. demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences 	<i>scientific research</i> <i>experiment</i>	<i>engineering design</i> <i>innovation</i>	<i>coding</i> <i>data</i> <i>prototype</i>
B. Life Systems - Cells			
<ol style="list-style-type: none"> 1. assess developments in cell biology and their impact on individuals, society, and the environment 2. demonstrate an understanding of the basic structure and function of plant and animal cells and cell processes 	<i>bacteria</i> <i>cell membrane</i> <i>cell reproduction</i> <i>cell specialization</i> <i>cell wall</i> <i>chloroplast</i> <i>chromosomes</i>	<i>concentration</i> <i>cytoplasm</i> <i>diffusion</i> <i>gradient</i> <i>magnification</i> <i>micro-organism</i> <i>multi-cellular</i> <i>nucleus</i>	<i>organ system</i> <i>organism</i> <i>organelles</i> <i>osmosis</i> <i>permeable membrane</i> <i>tissue</i> <i>unicellular</i>
C. Matter and Energy - Fluids			
<ol style="list-style-type: none"> 1. analyze uses of various technologies that rely on the properties of fluids, and assess the impact of these technologies on society and the environment 2. demonstrate an understanding of basic fluid mechanics, including the properties and uses of fluids 	<i>block and tackle</i> <i>efficiency</i> <i>effort force</i> <i>force</i> <i>friction</i> <i>fulcrum</i> <i>gear</i> <i>gear ratio</i>	<i>hydraulic</i> <i>lever</i> <i>linkage</i> <i>load force</i> <i>machine</i> <i>mechanical</i> <i>advantage</i> <i>mechanism</i>	<i>piston</i> <i>pneumatic</i> <i>pressure</i> <i>pulley</i> <i>velocity</i> <i>velocity ratio</i> <i>wheel and axle</i>
D. Structures and Mechanisms – Systems in Action			
<ol style="list-style-type: none"> 1. assess the social and environmental impacts of various systems, and evaluate improvements to the systems or alternative ways of meeting the same needs 2. demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation 	<i>Archimedes' Principle</i> <i>Bernoulli's Principle</i> <i>buoyant force</i> <i>compression</i> <i>density</i>	<i>fair test</i> <i>flow rate</i> <i>fluid</i> <i>fluid mechanics</i> <i>gas</i> <i>hydraulic devices</i> <i>hydraulics</i> <i>hydrometer</i>	<i>incompressibility</i> <i>laminar flow</i> <i>liquid</i> <i>particle theory</i> <i>pneumatic devices</i> <i>pneumatics pressure</i> <i>viscosity</i>
E. Earth and Space Systems - Water Systems			
<ol style="list-style-type: none"> 1. assess the impact of human activities and technologies on the sustainability of water resources 2. demonstrate an understanding of the characteristics of Earth's water systems and of factors that affect these systems 	<i>atmosphere</i> <i>climate</i> <i>continental divide</i> <i>ecosystems</i> <i>fresh water</i> <i>geological features</i> <i>glacier</i>	<i>groundwater</i> <i>Great Lakes</i> <i>marine</i> <i>ocean currents</i> <i>polar ice caps</i> <i>precipitation</i> <i>salinity</i>	<i>salt water</i> <i>sustainability</i> <i>tides</i> <i>water cycle</i> <i>water table</i> <i>watershed</i>

Adapted from *The Ontario curriculum, grades 1-8: Science and technology (2022)*.
<https://www.dcp.edu.gov.on.ca/en/curriculum/science-technology/grades/grade-8/strands>