

Ontario Science And Technology Curriculum

This teacher resource offers a detailed introduction to the Hands-On Science and Technology program (guiding principles, implementation guidelines, an overview of the science skills that grade 1 students use and develop) and a classroom assessment plan complete with record-keeping templates. It also includes connections to the Achievement Levels as outlined in The Ontario Curriculum Grades 1-8 Science and Technology (2007). This resource has four instructional units: Unit 1: Needs and Characteristics of Living Things Unit 2: Materials, Objects, and Everyday Structures Unit 3: Energy in Our Lives Unit 4: Understanding Earth and Space Systems Each unit is divided into lessons that focus on specific curricular expectations. Each lesson has the curriculum expectation(s) listed materials lists activity descriptions assessment suggestions activity sheet(s) and graphic organizer(s)

This book offers a meso-level description of demographics, science education, and science teacher education. Representing all 13 Canadian jurisdictions, the book provides local insights that serve as the basis for exploring the Canadian system as a whole and function as a common starting point from which to identify causal relationships that may be associated with Canada’s successes. The book highlights commonalities, consistencies, and distinctions across the provinces and territories in a thematic analysis of the 13 jurisdiction-specific chapters. Although the analysis indicates a network of policy and practice issues warranting further consideration, the diverse nature of Canadian science education makes simple identification of causal relationships elusive. Canada has a reputation for strong science achievement. However, there is currently limited literature on science education in Canada at the general level or in specific areas such as Canadian science curriculum or science teacher education. This book fills that gap by presenting a thorough description of science education at the provincial/territorial level, as well as a more holistic description of pressing issues for Canadian science education.

The Ontario Curriculum, Grades 1-8: Science and Technology, 1998

Ontario Curriculum Framework Science and Technology, Grades 1-9

Ontario Curriculum Science and Technology Unit

The Ontario Curriculum - Exemplars: Grades 3 and 4

Science and Technology

Science and TechnologyThe Ontario Curriculum Grades 1-8The Ontario Curriculum, Grades 1-8Science and technologyThe Ontario Curriculum Exemplars, Grades 1-8Science and technologyThe Ontario Curriculum, Grades 1-8Science and TechnologyThe Ontario Curriculum Exemplars, Grades 7 and 8Science and technologyThe Ontario curriculumgrades 1-8. Science and technologyThe Ontario Curriculum, Exemplars, Grades 1 and 2. Science and TechnologyImplementing the Ontario Curriculum Grades 1-8Science and TechnologyScience and TechnologyThe Ontario Curriculum, Grades 1-8The Ontario Curriculum - Exemplars: Grades 5 and 6The Ontario Curriculum - Exemplars: Grades 3 and 4The Ontario Curriculum, Exemplars, Grades 7 and 8. Science and TechnologyHands-On Science and Technology, Grade 2Portage & Main Press

In advocating an action-oriented and issues-based curriculum, this book takes the position that a major, but shamefully neglected, goal of science and technology education is to equip students with the knowledge, skills, attitudes and values to confront the complex and often ill-defined socioscientific issues they encounter in daily life as citizens in an increasingly technology-dominated world carefully, critically, confidently and responsibly. In outlining proposals for addressing socioscientific issues through a curriculum organized in terms of four increasingly sophisticated levels of consideration, the author adopts a highly critical and politicized stance towards the norms and values that underpin both scientific and technological development and contemporary scientific, engineering and medical practice, criticizes mainstream STS and STSE education for adopting a superficial, politically naïve and, hence, educationally ineffective approach to consideration of socioscientific issues, takes the view that environmental problems are social problems occasioned by the values that underpin the ways in which we choose to live, and urges teachers to encourage students to reach their own views through debate and argument about where they stand on major socioscientific issues, including the moral-ethical issues they often raise. More controversially, the author argues that if students are to become responsible and politically active citizens, the curriculum needs to provide opportunities for them to experience and learn from sociopolitical action. The relative merits of direct and indirect action are addressed, notions of learning about action, learning through action and learning from action are developed, and a case is made for compiling a user-friendly database reflecting on both successful and less successful action-oriented curriculum initiatives. Finally, the book considers some of the important teacher education issues raised by this radically new approach to teaching and learning science and technology. The book is intended primarily for teachers and student teachers of science, technology and environmental education, graduate students and researchers in education, teacher educators, curriculum developers and those responsible for educational policy. The author is Emeritus Professor of Science Education at the Ontario Institute for Studies in Education (University of Toronto), Adjunct Professor of Science Education at the University of Auckland and Visiting Professor of Science Education at the University of Hong Kong. His research interests include considerations in the history, philosophy and sociology of science and their implications for science and technology education, STSE education and the politicization of both students and teachers, science curriculum history, multicultural and antiracist education, and teacher education via action research.

Nelson Science & Technology 8

Grade four

The Ontario curriculum

Man, Science, and Technology

Integrating Science, Technology, Engineering, and Mathematics

This teacher resource offers a detailed introduction to the Hands-On Science and Technology program (guiding principles, implementation guidelines, an overview of the science skills that grade 5 students use and develop) and a classroom assessment plan complete with record-keeping templates. It also includes connections to the Achievement Levels as outlined in The Ontario Curriculum Grades 1-8 Science and Technology (2007). This resource has four instructional units. Unit 1: Human Organ Systems Unit 2: Forces Acting on Structures and Mechanisms Unit 3: Properties of and Changes in Matter Unit 4: Conservation of Energy and Resources Each unit is divided into lessons that focus on specific curricular expectations. Each lesson has curriculum expectation(s) lists materials lists activity descriptions assessment suggestions activity sheet(s) and graphic organizer(s)

Presents a multifaceted model of understanding, which is based on the premise that people can demonstrate understanding in a variety of ways.

Hands-On Science and Technology, Grade 4

Wildlife as a Teaching Tool, Integrating Cultural, Historical, and Environmental Perspectives in the Ontario Science and Technology Curriculum

The Ontario Curriculum, Grades 1-8

OECTA Teacher Resources, Life Systems

The Ontario Curriculum Exemplars, Grades 7 and 8

Developed for the Ontario curriculum 1-8 Science & Technology.

In the past decades wide-ranging research on effective integration of technology in instruction have been conducted by various educators and researchers with the hope that the affordances of technology might be leveraged to improve the teaching and learning process. However, in order to put the technology in optimum use, knowledge about how and in what way technology can enhance the instruction is also essential. A number of theories and models have been proposed in harnessing the technology in everyday lessons. Among these attempts Technological and Pedagogical Content Knowledge (TPACK) framework introduced by Mishra and Koehler has emerged as a representation of the complex relationships between technology, pedagogy and content knowledge. The TPACK framework extends the concept of Shulman's pedagogical content knowledge (PCK) which defines the need for knowledge about the content and pedagogical skills in teaching activities. Since then the framework has been embraced by the educational technology practitioners, instructional designers, and educators. TPACK research received increasing attention from education and training community covering diverse range of subjects and academic disciplines and significant progress has been made in recent years. This book attempts to bring the practitioners and researchers to present current directions, trends and approaches, convey experience and findings, and share reflection and vision to improve science teaching and learning with the use of TPACK framework. A wide array of topics will be covered in this book including applications in teacher training, designing courses, professional development and impact on learning, intervention strategies and other complex educational issues. Information contained in this book will provide knowledge growth and insights into effective educational strategies in integration of technology with the use of TPACK as a theoretical and developmental tool. The book will be of special interest to international readers including educators, teacher trainers, school administrators, curriculum designers, policy makers, and researchers and complement the existing literature and published works.

From Theory to Co-Practice

Ontario Curriculum Framework, Science and Technology, Grades 1-9 : a Consultative Draft

The Ontario Curriculum Grades 1-8

The Ontario Curriculum, Exemplars, Grades 1 and 2. Science and Technology

Issues, Reflections, and Ways Forward

Hands-On Science and Technology, Grade 4 Ontario Edition Project Editor Jennifer Lawson This teacher resource offers a detailed introduction to the Hands-On Science and Technology program (guiding principles, implementation guidelines, an overview of the science skills that grade 4 students use and develop) and a classroom assessment plan complete with record-keeping templates. It also includes connections to the Achievement Levels as outlined in The Ontario Curriculum Grades 1-8 Science and Technology (2007). This resource has four instructional units: Unit 1: Habitats and Communities Unit 2: Pulleys and Gears Unit 3: Light and Sound Unit 4: Rocks and Minerals Each unit is divided into lessons that focus on specific curricular expectations. Each lesson has curriculum expectation(s) lists materials lists activity descriptions assessment suggestions activity sheet(s) and graphic organizer(s)

This teacher resource offers a detailed introduction to the Hands-On Science and Technology program (guiding principles, implementation guidelines, an overview of the science skills that grade 6 students use and develop) and a classroom assessment plan complete with record-keeping templates. It also includes connections to the Achievement Levels as outlined in The Ontario Curriculum Grades 1-8 Science and Technology (2007). This resource has four instructional units. Unit 1: Biodiversity Unit 2: Flight Unit 3: Electricity and Electrical Devices Unit 4: Space Each unit is divided into lessons that focus on specific curricular expectations. Each lesson has curriculum expectation(s) lists materials lists activity descriptions assessment suggestions activity sheet(s) and graphic organizer(s)

Hands-On Science and Technology, Grade 5

Implementing the Ontario Curriculum Grades 1-8

Science and Technology Activities Resource

A Consultative Draft

Hands-On Science and Technology, Grade 1

This teacher resource offers a detailed introduction to the Hands-On Science and Technology program (guiding principles, implementation guidelines, an overview of the science skills that grade 3 students use and develop) and a classroom assessment plan complete with record-keeping templates. It also includes connections to the Achievement Levels as outlined in The Ontario Curriculum Grades 1-8 Science and Technology (2007). This resource has four instructional units: Unit 1: Growth and Changes in Plants Unit 2: Strong and Stable Structures Unit 3: Forces Causing Movement Unit 4: Soils in the Environment Each unit is divided into lessons that focus on specific curricular expectations. Each lesson has curriculum expectation(s) lists materials lists activity descriptions assessment suggestions activity sheet(s) and graphic organizer(s)

Co-Teaching in Higher Education, edited by Daniel Jarvis and Mumbi Kariuki, brings together an international group of educators and scholars to examine the theoretical frameworks and practical experiences relating to co-planning, co-teaching, and co-assessing at the post-secondary level. Co-teaching practices at the elementary and secondary school levels have been widely documented. This collection explores topics that will enable post-secondary instructors to maximize their courses' potential including undergraduate projects, graduate level co-teaching, pair and group co-teaching, co-taught single-subject courses, and innovative cross-curricular experiments. Contributors share their insights addressing key factors such as logistics, resources, administrative support, Ministry initiatives, and academic freedom. Jarvis and Kariuki have created an indispensable resource that provides the reader with an informed perspective on the realities of creating and sustaining rich co-teaching experiences at the university level.

Science Education in Canada

A Health and Safety Reference for Science and Technology Curriculum : Grades 1-8

Hands-On Science and Technology, Grade 2

Consistencies, Commonalities, and Distinctions

An Inquiry Approach

Hands-On Science and Technology: An Inquiry Approach is filled with a year's worth of classroom-tested activity-based lesson plans. The grade 1 book is divided into four units based on the current Ontario curriculum for science and technology. Needs and Characteristics of Living Things Materials, Objects, and Everyday Structures Energy in Our Lives Understanding Earth and Space Systems This new edition includes many familiar great features for both teachers and students: curriculum correlation charts; background information on the science and technology topics; complete, easy-to-follow lesson plans; reproducible student materials; materials lists; and hands-on, student-centred activities. Useful new features include: the components of an inquiry-based scientific and technological approach Indigenous knowledge and perspective embedded in lesson plans a four-part instructional process--activate, action, consolidate and debrief, and enhance an emphasis on technology, sustainability, and differentiated instruction a fully developed assessment plan that includes opportunities for assessment for, as, and of learning a focus on real-life technological problem solving learning centres that focus on multiple intelligences and universal design for learning (UDL) land-based learning activities a bank of science related images

Hands-On Science and Technology: An Inquiry Approach is filled with a year's worth of classroom-tested activity-based lesson plans. The grade 6 book is divided into four units based on the current Ontario curriculum for science and technology. Biodiversity Flight Electricity and Electrical Devices Space This new edition includes many familiar great features for both teachers and students: curriculum correlation charts; background information on the science and technology topics; complete, easy-to-follow lesson plans; reproducible student materials; materials lists; and hands-on, student-centred activities. Useful new features include: the components of an inquiry-based scientific and technological approach Indigenous knowledge and perspective embedded in lesson plans a four-part instructional process--activate, action, consolidate and debrief, and enhance an emphasis on technology, sustainability, and differentiated instruction a fully developed assessment plan that includes opportunities for assessment for, as, and of learning a focus on real-life technological problem solving learning centres that focus on multiple intelligences and universal design for learning (UDL) land-based learning activities a bank of science related images.

Multiple Perspectives

The Ontario Curriculum - Exemplars: Grades 5 and 6

Co-Teaching in Higher Education

The Ontario Curriculum Exemplars, Grades 1-8

New Directions in Technological Pedagogical Content Knowledge Research

How can curriculum integration of school science with the related disciplines of technology, engineering and mathematics (STEM) enhance students' skills and their ability to link what they learn in school with the world outside the classroom? Featuring actual case studies of teachers' attempts to integrate their curriculum, their reasons for doing so, how they did it, and their reflections on the outcomes, this book encourages science educators to consider the purposes and potential outcomes of this approach and raises important questions about the place of science in the school curriculum. It takes an honest approach to real issues that arise in curriculum integration in a range of education contexts at the elementary and middle school levels. The clear documentation and critical analysis of the contribution of science in curriculum integration—its implementation and its strengths and weaknesses—will assist teachers, science educators, and researchers to understand how this approach can work to engage students and improve their learning, as well as how it does not happen easily, and how various factors can facilitate or hinder successful integration.

"Hands-On Science and Technology: An Inquiry Approach" is filled with a year's worth of classroom-tested activity-based lesson plans. The grade 3 book is divided into four units based on the current Ontario curriculum for science and technology, Growth and Changes in Plants, Strong and Stable Structures, Forces Causing Movement, Soils in the Environment. This new edition includes many familiar great features for both teachers and students: curriculum correlation charts; background information on the science and technology topics; complete, easy-to-follow lesson plans; reproducible student materials; materials lists; and hands-on, student-centred activities. Useful new features include: the components of an inquiry-based scientific and technological approach Indigenous knowledge and perspective embedded in lesson plans a four-part instructional process--activate, action, consolidate and debrief, and enhance an emphasis on technology, sustainability, and differentiated instruction a fully developed assessment plan that includes opportunities for assessment for, as, and of learning, a focus on real-life technological problem solving, learning centres that focus on multiple intelligences and universal design for learning (UDL), land-based learning activities, a bank of science related images.

Grades 1-12 Science Curriculum

Philosophical Foundations

Understanding by Design

The Ontario Curriculum, Grades 1-8, Science and Technology

This teacher resource offers a detailed introduction to the Hands-On Science and Technology program (guiding principles, implementation guidelines, an overview of the science skills that grade 2 students use and develop) and a classroom assessment plan complete with record-keeping templates. It also includes connections to the Achievement Levels as outlined in The Ontario Curriculum Grades 1-8 Science and Technology (2007). This resource has four instructional units: Unit 1: Growth and Changes in Animals Unit 2: Movement Unit 3: Properties of Liquids and Solids Unit 4: Air and Water in the Environment Each unit is divided into lessons which focus on specific curricular expectations. Each lesson has curriculum expectation(s) lists materials lists activity descriptions assessment suggestions activity sheet(s) and graphic organizer(s)

Hands-On Science and Technology: An Inquiry Approach is filled with a year's worth of classroom-tested activity-based lesson plans. The grade 4 book is divided into four units based on the current Ontario curriculum for science and technology: Habitats and Communities Pulleys and Gears, Light and Sound, Rocks and Minerals This new edition includes many familiar great features for both teachers and students: curriculum correlation charts; background information on the science and technology topics; complete, easy-to-follow lesson plans; reproducible student materials; materials lists; and hands-on, student-centred activities. Useful new features include: the components of an inquiry-based scientific and technological approach Indigenous knowledge and perspective embedded in lesson plans a four-part instructional process--activate, action, consolidate and debrief, and enhance an emphasis on technology, sustainability, and differentiated instruction a fully developed assessment plan that includes opportunities for assessment for, as, and of learning a focus on real-life technological problem solving learning centres that focus on multiple intelligences and universal design for learning (UDL) land-based learning activities, a bank of science related images.

Hands-On Science and Technology, Grade 6

Science and technology

Looking to the Future

Be Safe!

Assessment of Science & Technology Achievement Project, Working Paper #4