



Ontario Curriculum Connections in Science & Technology

"Trying to understand how the world works is what children do naturally, and it is what you need to take advantage of when teaching science [and technology]. Just remember: Avoid being the knowledge of authority. ... Instead, cultivate a sense of excitement for exploring and inquiring about our world and for generating and testing possible explanations."

Jeffrey W. Bloom, *Creating a Classroom Community of Young Scientists*, 2nd ed. (2006), p.4



One of the major goals of The Ontario Curriculum, Grades 1-8: Science & Technology, 2007 is "...to develop the skills, strategies, and habits of mind required for scientific inquiry and technological problem solving." (p. 3)

(To access the complete Ontario Curriculum, Grades 1-8: Science & Technology, 2007 click on the following link:

<http://www.edu.gov.on.ca/eng/curriculum/elementary/scientec.html>)

Regardless of grade and regardless of strand or topic, the skills of investigation and communication are to be major emphases of the science and technology program. Our students are expected to learn these skills that are essential in developing scientific and technological literacy.

Science fair projects are a powerful way to address the curriculum, as students must apply the skills involved in scientific inquiry and technological problem-solving to complete such a project.

The skills include:

- initiating & planning
- performing and recording
- analyzing and interpreting
- communicating

Additional Curriculum Support:

In the curriculum, the skills of investigation and communication are divided into three main areas. Each of these areas is further defined through developmental skills continua. These continua support the teacher in fostering the development of student skill levels.

- [scientific inquiry / experimentation skills](#)
- [scientific inquiry / research skills](#)
- [technological problem-solving skills](#)

(Clicking on the skill areas connects with the appropriate continuum. Refer to pages 12-18 of the curriculum.)

As students plan, implement and present their science fair projects, teachers are encouraged to use the continua to plan next steps in further developing the skill levels of their students.

Sample developmental skills continua for Experimentation.

Beginning → Exploring → Emerging → Competent → Proficient			
Initiating and Planning			
The student:			
asks questions that demonstrate curiosity about the world around him or her	asks questions that can be answered through tests/experimentation, and chooses one to investigate	asks questions that can be answered through tests/experimentation, and formulates a specific question to investigate	asks questions that arise from practical problems and issues, and formulates a specific question to investigate
with support, follows the steps in a simple, teacher-prepared procedure for a test/experiment	follows the steps in a simple, teacher-prepared procedure for a test/experiment	creates, from a variety of possible methods, a plan to find an answer to the question he or she has formulated	plans for safe experimentation, showing some awareness of variables to be considered
recognizes when a test is fair or unfair	recognizes when a test is fair or unfair	with support, builds fair testing elements into plans for an experimental procedure designed to answer the question he or she has formulated	builds fair testing elements into plans for an experimental procedure designed to answer the question he or she has formulated
makes "guesses" about possible outcomes of simple procedures	with support, makes simple predictions about the outcome of the procedure prepared by the teacher	makes predictions, based on personal experience, about the results of the investigation	makes predictions, based on prior knowledge from explorations and investigations, about the results of the investigation