

**You will be amazed to realize how much science, technology and mathematics you use each day in your work!**

**How the Forum identified these competencies**

- Business and education representatives were invited to participate in consultations and workshops to develop a profile of science literacy for the world of work. This list of competencies is a culmination of their efforts, vision and passion in making the role of science, technology and mathematics in the workplace better understood.

**How these competencies fit with the goals of education**

- The competencies are already found in general educational goal statements. This document draws attention to education for the world of work, one of many legitimate roles for education.

**How they fit with the Employability Skills Profile**

- The *Employability Skills Profile* outlines the foundation skills for employability and self employment. *Science Literacy for the World of Work* is a companion document, listing competencies specific to science, technology and mathematics.

**How business-education partnerships can foster science literacy at work**

- Forum members invite you to discover and demonstrate your own examples of where these science, technology and mathematics competencies are used in the workplaces in your community.

**The Business and Education Forum on Science, Technology and Mathematics**

**Mission**

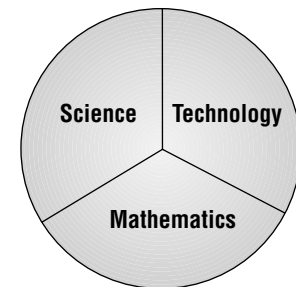
To act as catalyst to engage business, educational and governmental organizations in helping young people to experience and embrace the excitement of science, technology and mathematics so that they can successfully contribute to and enjoy an innovative Canadian society.

**Member Organizations**

- |  |   |
|--|---|
| Alberta Education  | Let's Talk Science                                    |
| Association of Canadian Community Colleges                   | McGraw-Hill Ryerson Limited/Chenelière                |
| AECL   | Merck Frosst Canada Inc.                              |
| Automotive Parts Manufacturers Association of Canada         | National Defence                                      |
| Bank of Montreal   | New Brunswick Department of Education                 |
| Bell Canada  | Noranda Inc.  |
| Blanco Mialhe Associates                                     | Nortel (Northern Telecom)                             |
| Canada Post Corporation                                      | NOVA Corporation                                      |
| Canadian Microelectronics Corporation                        | Ontario Ministry of Education and Training            |
| Center for Applied Academics (British Columbia)              | Ontario Science Centre                                |
| Chrysler Canada Ltd.   | PARTNERS: Ottawa-Carleton Learning Foundation, Ottawa |
| Connaught Laboratories Limited                               | Carleton Research Institute, Telecommunications       |
| Crain-Drummond Inc.  | Research Institute of Ontario                         |
| Dufferin-Peel Roman Catholic Separate School Board (Ontario) | Petro-Canada  |
| Gennum Corporation   | Royal Bank of Canada                                  |
| Hewlett-Packard (Canada) Ltd.                                | Shad International                                    |
| Human Resources Development Canada                           | Shell Canada Limited                                  |
| Husky Oil  | Software Human Resources Council                      |
| Imasco Limited   | Syncrude Canada Ltd.                                  |
| Imperial Oil Limited   | TELUS Corporation                                     |
| INCO Limited   | TransAlta Corporation                                 |
| Industry Canada  | TransCanada Pipelines Limited                         |
|  | York University                                       |

**Science Literacy for the World of Work**

Scientific, Technological and Mathematical Competencies for an Innovative, Productive and Competitive Workforce



The competencies outlined in this document reflect the science literacy that people need to fully participate in the world of work.

The Business and Education Forum on Science, Technology and Mathematics encourages all partners in science, technology and mathematics education to work together in fostering these skills among students of all ages through motivating, relevant and stimulating learning activities.



# Science Literacy for the World of Work

## Scientific, Technological and Mathematical Competencies for an Innovative, Productive and Competitive Workforce

### A SOUND FOOTING

*The foundation to use science, technology and mathematics as a way of knowing, communicating and making decisions*

#### **Attitudes and Behaviours**

- Value science, technology and mathematics as ways of thinking, gaining and sharing knowledge, and problem solving

#### **Critical-Thinking Skills**

- Be logical and critical when searching for the best possible solution
- Differentiate among cause, effect and correlation
- Evaluate arguments based on facts and how these facts relate to one another

#### **Communication Skills**

- Make scientific, technological or mathematical information understandable
- Share information and learn from others

### A BASIC UNDERSTANDING

*The competencies needed to understand how science, technology and mathematics are used in the world of work*

#### **Science, Technology and Work**

- Understand key scientific concepts such as matter, energy, information, system, scale, change, and model and how they apply to the world of work
- Understand how technology changes the workplace and business environment over time

#### **Numeracy**

- Decide what needs to be measured, and select the proper procedures and tools for the task
- Estimate, predict, check, and validate calculations

#### **Health, Safety and Environment**

- Recognize substances, circumstances and actions that may be hazardous to people and the environment, and act appropriately

### AN ABILITY TO APPLY

*The competencies needed to make science, technology and mathematics work for you*

#### **Problem Solving**

- Understand the underlying scientific, mathematical and technological features of a problem
- Diagnose problems and apply creative problem-solving methods
- Select and use appropriate technology for a task

#### **Participating in Projects and Tasks Independently or as Part of a Team**

- Plan and design a project or task from start to finish with others
- Develop a plan, seek feedback, test and review it, make revisions and implement
- Work to agreed quality standards and specifications

#### **Information Technology**

- Seek, create, manage and organize information effectively, using appropriate technology



**The Conference Board of Canada**

255 Smyth Road, Ottawa, ON K1H 8M7 Canada

Telephone: (613) 526-3280

Fax: (613) 526-4857

Internet: <http://www.conferenceboard.ca/nbec>

*Information for Sound Decisions Since 1954*

This document was developed by the Business and Education Forum on Science, Technology and Mathematics, a program of the National Business and Education Centre, The Conference Board of Canada.

This document can be used as a companion to the *Employability Skills Profile*, a document that examines the critical academic, personal management and teamwork skills required of the Canadian workforce.