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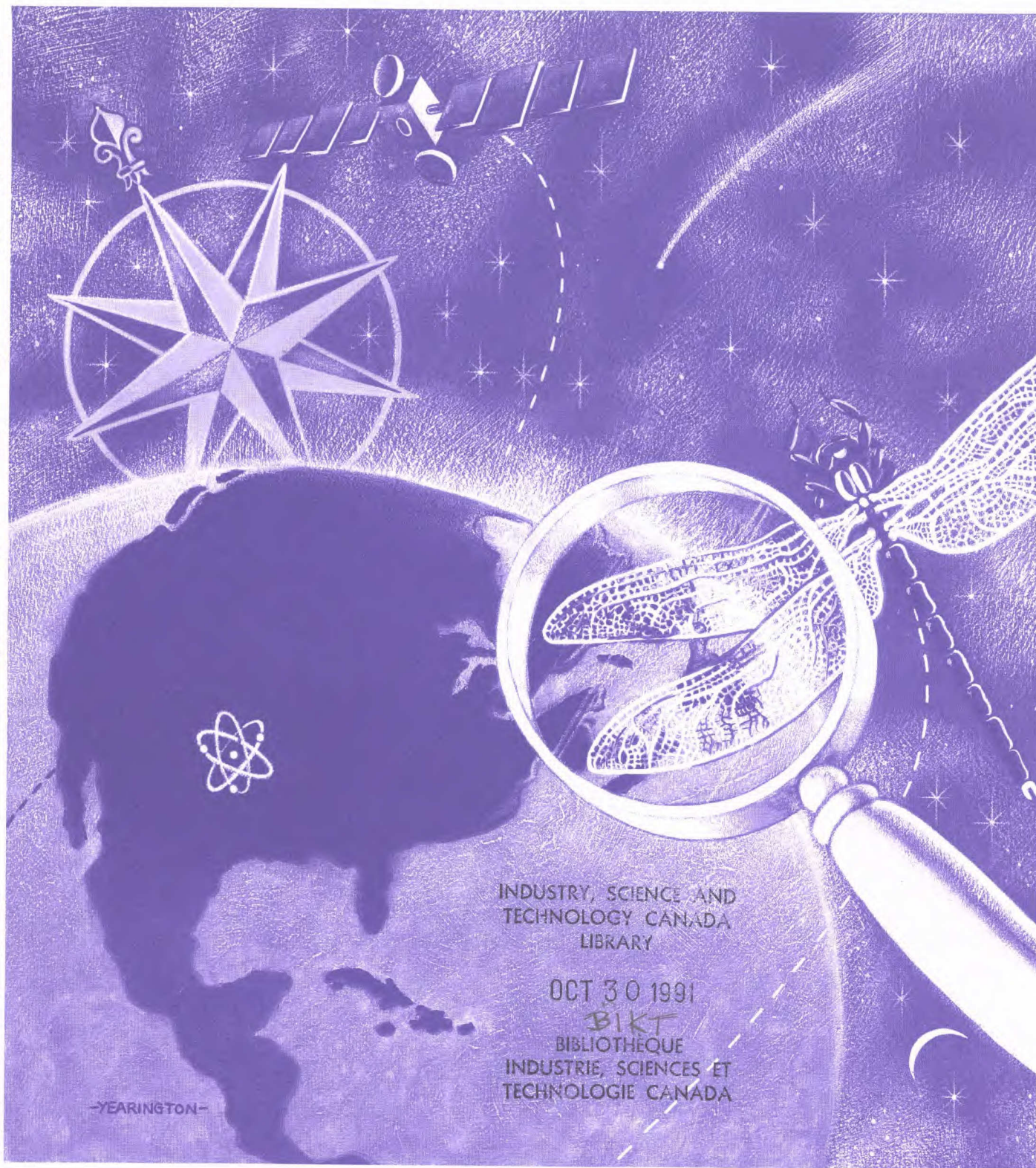
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SCIENCE CULTURE

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INTRODUCTION

Science and technology — the sound of something happening. Developments in science and technology are occurring every day, changing our lives in amazing ways. Whether in medicine, communications, education, transportation or the environment, science and technology offer the opportunity to improve our lives. However, for many Canadians, the words are unfamiliar, intimidating or irrelevant. Yet what science and technology really offer is an open door: a chance to discover something new.

Explorations in Science Culture is a step through that door. It is an inventory of sources, resources and bright ideas on how to bring the excitement and potential of science and technology to Canadians, particularly young people. *Explorations* includes videos, workshops, science camps, magazines, exhibits and planetarium shows — as well as introductions to the major organizations involved in developing Canada's science culture.

All the activities in this publication have been funded through Science Culture Canada, a \$2.5-million federal program designed to increase public awareness of science and technology. Competitions for funding are held twice a year. *Explorations in Science Culture* covers those groups and projects that have received funding between 1988 and 1990. For information about the program or an application form, please contact:

Science Culture Canada
Science Branch
Supply and Services Canada
12C1, Phase III, Place du Portage
Hull, Quebec
K1A 0S5
TEL: (819) 956-1772

Science Culture Canada is administered by Supply and Services Canada, under the direction of a Management Committee chaired by Industry, Science and Technology Canada (ISTC). It is part of a major public awareness effort led by the federal government, through ISTC, to increase understanding of the importance of science and technology to Canada's international competitiveness and economic prosperity.

This effort includes advertising, teacher awareness projects, a travelling exhibit program and National Science and Technology Week. It is aimed primarily at young people, to show that science, technology and engineering are exciting, relevant and rewarding career options. This initiative has the full co-operation and participation of all provincial and territorial governments, scientific and engineering societies, the academic community and private sector organizations.

For information about these activities, please contact:
Public Awareness Campaign Secretariat
Industry, Science and Technology Canada
8th Floor, West Tower
235 Queen Street
Ottawa, Ontario
K1A 0H5

KEY ORGANIZATIONS

- * Agence de recherche et de développement de l'aérospatiale amateur
- * Agence Science-Press
- * Association canadienne-française pour l'avancement des sciences
- * Association des communicateurs scientifiques du Québec
Association for the Promotion and Advancement of Science Education
- Atlantic Provinces Council on the Sciences
- Canadian Centre for Creative Technology
- Canadian Science News Service
- Canadian Science Writers' Association
- Canadian Student Pugwash
- Centre écologique de Port-au-Saumon
- * Conseil de développement du loisir scientifique
Fort Whyte Centre for Environmental Education
Huntsman Marine Science Centre
Nomad Scientists
Quidi Vidi Rennies River Development Foundation
Royal Canadian Institute
Science Information Sources
Science Institute of the Northwest Territories
Science North
Société linnéenne du Québec
- * Société pour la promotion des sciences et de la technologie
Women Inventors Project
Young Naturalist Foundation
Youth Science Foundation
Yukon Science Institute

* Services offered only in French.

Agence de recherche et de développement de l'aérospatiale amateur

The goal of the Agence de recherche et de développement de l'aérospatiale amateur (ARDAA) is to introduce young people to the adventure of space. Games, imagination and practical experiments help young people learn to work together to solve problems associated with the conquest of air and space. The intent is to stimulate the interest of youngsters in aerospace technology and science careers.

The agency offers four activities and educational programs, one for each season of the year, to develop the interest of primary and secondary school students. Two of these programs, *La mission spatiale simulée internationale* and *La mission spatiale simulée régionale*, simulate space travel for would-be astronauts. *La kermesse des aîrs* features a mini-rocket competition and demonstrations of miniature flying aircraft built during the agency's summer camp. The camp, *S.T.A.G.E. Aérospatial*, caters to 10 to 14 year-olds from Quebec and elsewhere. Campers undergo space flight simulations and build and fly models. A *Centre aérospatial amateur*, which opened in June 1991, will now permit the agency to operate permanently on a year-round basis.

Contact:
ARDAA
330 montée Lesage
Rosemère, Quebec
J7E 4H4
TEL: (514) 965-9119
FAX: (514) 621-1525,
(514) 965-1376

Agence Science-Presse

"Scientific information for the general public should be present in all media." Agence Science-Presse has been meeting this challenge since 1978. Through its various publications, the agency keeps Canada's Francophones abreast of the results of scientific research.

Fifty-two times a year, the magazines *Hebdo-Science/Médias écrits* and *Hebdo-Science/Radio* reach 160 media outlets, mainly regional weeklies, association journals and newsletters, and radio stations. Each week, these magazines include popular articles on science in Canada and a dozen national and international news capsules. The agency also prepares the "Actualités scientifiques" section of the monthly magazine *Québec Science*. In addition, it publishes the monthly magazine *Je me petit-débrouille*, which stimulates the interest of some 60 000 youngsters between 7 and 14 years of age. Schools have found this publication to be a useful teaching tool. There is also a collection of 15 books and many activity books and comic strip albums. Lastly, the agency produced the television series *Les Débrouillards*, which has been broadcast on Radio-Canada since September 1990.

Agence Science-Presse informs the public of the importance of science and technology and uses everyday language to encourage young people to consider a scientific career.

Contact:
Agence Science-Presse
3995 rue Sainte-Catherine est
Montreal, Quebec
H1W 2G7
TEL: (514) 522-1304
FAX: (514) 522-1761

Association canadienne-française pour l'avancement des sciences

L'Association canadienne-française pour l'avancement des sciences (ACFAS) has encouraged advances in science and diffusion of science information in Canada since 1923. Francophone scientists founded ACFAS in order to pool their knowledge in the best possible way. The organization, which is well known among researchers, also promotes higher education.

In addition to disseminating research documents, the association participates in colloquia and many other activities. The ACFAS annual meeting, *Congrès de l'ACFAS*, is well known throughout Canada and represents the greatest assembly of French-speaking scientists in the world. It provides researchers and interested members of the public with information on recent scientific developments in universities and research centres. In addition, ACFAS' journal, *Interface*, covers all the sciences and publicizes Canadian discoveries in layman's language. In order to promote scientists and encourage young people to follow in their footsteps, ACFAS is developing a youth program.

Through its many public activities and publications, ACFAS promotes a science culture and stimulates interest in many scientific disciplines.

Contact:
ACFAS
2730 chemin de la Côte-Sainte-Catherine
Montreal, Quebec
H3T 1B7
TEL: (514) 342-1411
FAX: (514) 342-9552

Association des communicateurs scientifiques du Québec

The goal of the Association des communicateurs scientifiques du Québec (ACSQ) is to increase the dissemination of scientific and technical information to the general public. The association consists of journalists, information officers and museologists, who act as a link to the scientific community.

The association organizes an annual colloquium to stimulate public interest in scientific developments and to address the key role played by the media. It publishes a newsletter, *L'omniscient*, organizes training sessions on scientific communications for young people, and publishes an annual directory of scientific communicators, a very useful tool for members and organizations.

Through its many discussions and other activities, the ACSQ invites the public to reflect on world problems.

Contact:
ACSQ
3575 boulevard Saint-Laurent, suite 705
Montreal, Quebec
H2X 2T7
TEL: (514) 845-3636
FAX: (514) 845-3041

Association for the Promotion and Advancement of Science Education

Since 1984, the Association for the Promotion and Advancement of Science Education (APASE) has been providing programs to help adults teach children about science and technology. Programs are aimed primarily at improving science education in elementary schools. APASE reaches children by providing information and teaching assistance to teachers, parents and youth-group leaders.

The *PRISM* newsletter is a key tool for communicating with APASE's target audience. It provides teaching techniques, science facts, recommended references and hands-on science activities. In discussing Canadian science and technology, the newsletter shows its relevance to daily life, and portrays scientists and engineers as interesting and approachable people. Each issue focuses on a different topic and features related science activities suitable for use with elementary school children. *PRISM* is an excellent reference for educators.

APASE also runs workshops that train adults to use its materials. These include the *Engineering for Children Project*, which teaches problem solving and simple scientific principles related to engineering, and the *Environment and You Project*, which deals with the interrelations of people and the natural world. The information presented is always straightforward, relevant and easy to understand.

APASE also visits elementary classrooms throughout British Columbia with environmental education programs on freshwater resources, forests and energy conservation.

APASE strives to encourage positive attitudes towards science and technology in children and the adults who have the strongest influence on them.

Contact:
APASE
3466 West Broadway
Vancouver, British Columbia
V6R 2B3
TEL: (604) 737-2736
FAX: (604) 737-2798

Atlantic Provinces Council on the Sciences

The Atlantic Provinces Council on the Sciences (APICS) was developed to maintain and strengthen linkages among universities, government and industry in the Atlantic region. Since its inception in 1962, APICS has focused on science education at the university level. More recently, APICS has broadened its mandate to include activities aimed at improving the quality of science education in secondary schools.

APICS provides a variety of activities to stimulate interest in science. Its ten standing committees cover a broad spectrum of science topics from physics to aquaculture. Committees hold annual events such as conferences and lectures by scientists, and undertake other special projects. For example, the Mathematics and Statistics Committee produced a video titled *The Ten Equations that Changed the World*.

In addition, the APICS Education Committee runs a science education conference for secondary school science teachers. This conference updates teachers on exciting areas opening in science, presents current and future directions in science education and promotes better communication among science teachers at all levels. Past conferences have been highly successful, with such guest speakers as well-known scientist Dr. David Suzuki and Dr. Larkin Kerwin, a former president of the National Research Council.

APICS also administers the *APICS/Northern Telecom Science Teaching Award* for outstanding science teaching at both the high school and university levels. Recently, APICS presented medals and certificates to 150 students for projects receiving honourable mention at regional science fairs. Another 20 students from the St. John's Science Olympics competition were also recognized for their efforts.

APICS reaches a wide audience with its bi-monthly newsletter, *Atlantic Science*, which contains information on research and science-related issues in Atlantic Canada. *Atlantic Science* is distributed free of charge to school libraries, university professors, educational administrators, government officials and other interested individuals within and outside the Atlantic region.

APICS has been promoting interest in science throughout Atlantic Canada since 1962. Programs and events cater to students, educators, scientists and the general public.

Contact:
APICS
Memorial University of Newfoundland
P.O. Box 4200
St. John's, Newfoundland
A1C 5S7
TEL: (709) 737-8918
FAX: (709) 737-4095

Canadian Centre for Creative Technology

The Canadian Centre for Creative Technology is a proven leader in linking business and technology with education. The centre aims to create a supportive, challenging, and exciting environment where young people can realize their full potential and develop their entrepreneurial spirit.

Currently, the centre's main activity is the *Shad Valley Summer Program*. Part courses and part co-operative work program, *Shad Valley* is a motivational learning experience aimed at harnessing some of Canada's young scientific talent. It is designed for outstanding students in grades 11 and 12 as well as first-year CEGEP students in Quebec. Each campus has a staff of four university professors, covering mathematics, computer science, engineering and entrepreneurship, as well as six graduate student teaching assistants. Students learn about everything from bio-engineering and electronics to marketing and business planning. Afterwards, they join the work force, working up to six weeks for a high-tech company. The centre is supported by more than 200 corporate and government sponsors.

Shad Valley began in the summer of 1981 in Aurora, Ontario, with 45 students. Since then, it has expanded to encompass 400 students at eight different locations across Canada. The program is offered at the following universities: British Columbia, Calgary, Manitoba, Waterloo, Carleton, Sherbrooke, New Brunswick and Acadia. (The Sherbrooke program operates in French.) A program entitled *Monkey Business* operates like a mini-Shad Valley for students in grades 8 and 9. For details on this project, see page 96.

In addition, the centre runs the *National Institute* and *National Awards* programs. The *National Institute* is a one-week program on information and communications technology for top educators from kindergarten to college. The *National Awards* recognize outstanding achievement in presenting information and communications technology in the classroom. Other activities include publishing a quarterly magazine, *Aurora*, and operating electronic communications networks.

Contact:
Canadian Centre for Creative Technology
8 Young Street East
Waterloo, Ontario
N2J 2L3
TEL: (519) 884-8844
FAX: (519) 884-8191

Canadian Science News Service

A recent study by the University of Calgary found that one half to three quarters of the science stories appearing in the Canadian media originate from the United States. It also demonstrated that Canadians were not very science-literate.

The Canadian Science News Service (CSNS) is working to remedy the situation. Since 1982, it has provided a weekly camera-ready news sheet on Canadian research and development free of charge to small weekly and community newspapers, daily newspapers, university newspapers, schools and libraries across Canada. Articles encompass all areas of science and technology, including the physical and technological sciences, medicine, the biological and environmental sciences, engineering, and the social sciences.

By providing a market for science stories by freelancers, the service helps to train science writers. CSNS stories are also used in some journalism and other university courses.

Contact:
Canadian Science News Service
Rm. H-02, University College
University of Toronto
Toronto, Ontario
M5S 1A1
TEL: (416) 595-7153
FAX: (416) 595-7153

Canadian Science Writers' Association

Public understanding of science is dependent on both scientists and science journalists, among others. The Canadian Science Writers' Association recognizes the need and the responsibility to make science more accessible to general audiences. Formed in 1970, it encourages excellence and accuracy in science reporting. It strives to raise the standards for science journalism and to improve communication among science writers and scientists in all fields.

To meet these goals, the association has established a variety of programs. Its *Science Journalism Awards* annually honour excellence in science writing and broadcasting. Its newsletter, *Science Link*, promotes high standards in science reporting. An annual directory of the association's members — which is distributed free to Canadian publishers, government departments and agencies — outlines their skills and experience.

Professional development programs such as workshops, seminars, and annual conferences are also offered. Conference sessions cover a range of issues appealing to science writers, public relations persons, journalism students, scientists and those interested in science policy. These programs help participants develop their skills, as well as establish contacts in the scientific community.

Contact:

Canadian Science Writers' Association
24 Ryerson Avenue, Suite 209
Toronto, Ontario
M5T 2P3
TEL: (416) 361-1427
FAX: (416) 860-0826

Canadian Student Pugwash

In 1957, two of the greatest minds of this century, Bertrand Russell and Albert Einstein, brought together some of the world's major scientists to discuss the threat of nuclear weapons. This historical event, which took place in the small town of Pugwash, Nova Scotia, marked the birth of the international Pugwash movement. Canadian Student Pugwash grew out of this movement.

Canadian Student Pugwash provides a forum through which the social and ethical implications of science and technology are presented and debated. It encourages discussion of topics ranging from medicine, chemistry and physics to international security and the environment. By encouraging students from all disciplines, scientists and the general public to explore these issues, the organization aims to promote the responsible use of science or technology.

Since 1979, Canadian Student Pugwash has established a network of 35 local groups at university campuses across the country. The national office in Ottawa co-ordinates all activities, which include publishing the quarterly magazine *Pugwash Papers* and the *Science, Technology and Society Yearbook*, organizing regional workshops, and staging national conferences.

There are currently 15 countries that have student Pugwash groups, with Canada being one of the most active. An *International Student/Young Pugwash Conference* is held every two years. 1992 promises to be a special year, as the conference will be hosted in Pugwash, Nova Scotia, the city where the global movement originated.

In keeping with the spirit of Einstein's challenge, "We need to learn to think in a new way," Canadian Student Pugwash provides youth with the knowledge to become responsible decision makers of the future.

Contact:
Canadian Student Pugwash
902-151 Slater Street
Ottawa, Ontario
K1P 5H3
TEL: (613) 234-3622
FAX: (613) 238-1677

Centre écologique de Port-au-Saumon

The Centre écologique de Port-au-Saumon is a special place for the study of a vast variety of natural land, sea and underwater habitats. Located in the Charlevoix region, the centre is run by a group of scientists and others committed to introducing the public to the natural and environmental sciences.

Each summer the *Natural Sciences Festival* attracts over 4 000 visitors from across Canada. Through a variety of activities and exhibits, they can see birds of prey, admire the richness and beauty of marine invertebrates in special pools and observe a number of natural phenomena on an ecological trail along the shoreline. The centre's *Garden of the Four Winds*, the largest private garden in Canada, has more than 1 000 varieties of plant life. Natural science and astronomy camps help youngsters between 8 and 16 years of age to understand and respect the world around them. Nature visits lasting several days enable schools to study particular topics, including birds, whales and marine ecology. In the spring and fall, the centre also offers programs for the elderly.

The Centre écologique de Port-au-Saumon encourages both adults and children to become ambassadors for protection of the environment.

Contact:
Centre écologique de Port-au-Saumon
337 route 138
Saint-Fidèle, Quebec
G0T 1T0
TEL: (418) 434-2209
FAX: (418) 434-2559

Conseil de développement du loisir scientifique

The Conseil de développement du loisir scientifique (CDLS) is a very prominent Quebec organization that stimulates the interest of young people in science. In 1979, the CDLS set up an autonomous regional structure of Conseils de loisir scientifique régionaux to allow for better dissemination of information across the province. The pleasure of discovery and research thus became available to more budding scientists.

Each year the *Expo-sciences pan québécoise* is the culmination of 12 regional science exhibitions across the province in which over 1 200 participants between the ages of 12 and 20 help familiarize the public with various aspects of science. The exhibition brings together some 150 of these participants and serves as a springboard to *Expo-sciences pan canadienne* and *Expo-sciences internationale*, events that enable young people to discover new cultural and scientific horizons.

In addition, the Club des Petits Débrouillards reaches almost 20 000 young people through its monthly magazine *Je me petit-débrouille*, as well as through meetings, day camps, and appearances by personalities well-known to club members, children from 6 to 12 years of age.

The CDLS encourages the creation of ingenious and amusing projects, makes science accessible and promotes the development of a new generation of scientists in Quebec.

Contact:
CDLS
4545 avenue Pierre-de-Coubertin
P.O. Box 1000, Station M
Montreal, Quebec
H1V 3R2
TEL: (514) 252-3027
FAX: (514) 251-3152

Fort Whyte Centre for Environmental Education

Manitobans can experience the richness of the natural world by paying a visit to the Fort Whyte Centre for Environmental Education. Situated on 74 hectares, with diverse habitats, the centre has encouraged greater public interest in the environment since it opened in 1983. It places a special emphasis on educating school children and youth groups.

Visitors begin their adventure at the Interpretive Building, which can accommodate up to 150 school children a day. The building houses a waterfowl display room, freshwater aquarium, theatre, library, gift shop and a "touch museum." Exhibits include a fully operational glassed-in beehive. The centre also provides education programs based on Manitoba's science curriculum. These vary according to age groups and season, with many being offered in French. Visitors can learn about ecology by strolling through the waterfowl gardens. This series of trails features each major wetland habitat in Manitoba — from the prairie pothole to the coastal tundra. Recreation activities such as ice fishing and dog sledding in winter, and maple sugaring in spring, are always well attended.

The centre provides an outdoor living laboratory where science comes to life. Projected attendance for 1991 is 110 000.

Contact:

Fort Whyte Centre for Environmental Education
Box 124, 1961 McCreary Road
Winnipeg, Manitoba
R3Y 1G5
TEL: (204) 895-7001
FAX: (204) 895-4700

Huntsman Marine Science Centre

The Huntsman Marine Science Centre was established in 1969 as a university field station dedicated to offering senior undergraduate and graduate students and faculty members opportunities to study marine science. Over the past 20 years, the institution has become a unique facility in Canada, offering not only academic and research programs but also significant public education activities.

The centre promotes public awareness of Canada's marine and coastal environment through field trips, in-class presentations, outreach programs, seminars and professional development workshops. It has also produced a series of educational posters, which cover topics such as phytoplankton, icebergs, deep-sea fishes, underwater technology (aquanauts), aquaculture and ocean pollution. The poster series, entitled *Sea trek/Pleine mer*, was distributed to schools throughout Canada and around the world, making its way to Britain, Finland and the South Pacific.

The opening of a branch office in Montreal has allowed the centre to expose more school children and teachers to the wonders of the ocean and the achievements of Canadian marine scientists. The in-class presentation program developed through the Montreal office visited over 10 000 students and teachers in more than 70 schools in the region between October 1990 and April 1991. The office also distributed resource materials and "edu-kits" for classroom use.

In collaboration with the Atlantic Reference Centre, the centre's Aquarium/Museum has developed a successful public display on unusual and little-known deep-sea marine life of Atlantic Canada.

The centre has earned a reputation for excellence in marine science education and research. Located off the picturesque coast of New Brunswick, it attracts visitors from all over Canada, the United States and abroad. Many programs and materials are offered in both official languages.

Contact:
Huntsman Marine Science Centre
Brandy Cove Road
St. Andrews, New Brunswick
E0G 2X0
TEL: (506) 529-8895
FAX: (506) 529-4337

Nomad Scientists

The Nomad Scientists are a group of educators dedicated to spreading the wonder of science and nature. True to their name, they travel the country, exciting imaginations and helping to make science fun. But make no mistake, they are no mad scientists! The Nomads act as “curiosity catalysts” to help the school, the home and the community become more science literate. Although their main focus is children aged 4-10, Nomad Scientists have reached people from all walks of life: in isolated rural communities, senior citizen homes, hospitals and institutes for disabled persons.

The Nomads were founded in Montreal in 1985 by science educators as an outreach initiative of the Lacolle Centre at Concordia University. The Nomads teach science through theatrical shows and lively chemistry and physics demonstrations. Travelling science and nature presentations include: insects and crawly creatures, the tropical rain forest, environmental pollution, marine life, plants and animals, and prehistoric life. Children are given the opportunity to touch interesting specimens and to ask questions. The Nomads also organize field trips that allow children to explore the natural world.

When not performing, the Nomads are busy researching and writing material for educators such as *Link Science: A Hands-On Approach to the Environment*, published in 1990. This book is designed for educators of children aged 5-12, and is distributed across North America and in the United Kingdom.

The environment is a major focus of most Nomad activities. The group was recognized by the Montreal Gazette in April 1991 at the 50 Plus Conference of the Environment, where they received an award for their innovative approach to promoting environmental awareness among children.

The Nomad approach to science is discovery — learning through personal involvement and sharing: learning together. Future plans include establishing a Nomad tribe in British Columbia. Nomad services are bilingual.

Contact:
Nomad Scientists
Lacolle Centre
Concordia University
7141 Sherbrooke St. West
Montreal, Quebec
H4B 1R6
TEL: (514) 848-4955

Quidi Vidi Rennies River Development Foundation

Nestled in the heart of St. John's, the Quidi Vidi/Rennies river system is truly a unique urban resource. A trail system providing access to an abundance of wildlife extends from the headwaters in Pippy Park through Quidi Vidi Lake to the ocean. City dwellers can see trout spawning in the fall or waterfowl nesting in the spring.

Since 1984, the Quidi Vidi Rennies River Development Foundation has created programs to conserve and enhance these open spaces and freshwater resources. In 1986, the foundation launched a 10-year master plan to restore and enhance the river. Construction of the Newfoundland Freshwater Resource Centre was a major component of this plan.

The Newfoundland Freshwater Resource Centre celebrated its official opening on July 2, 1991. Designed to promote the importance of conserving freshwater environments in the province, it provides educational programs on freshwater ecology and the history, use and management of natural river systems. Programs for students from kindergarten to grade 12 focus on how science and technology are used to understand natural systems and to address environmental issues. The centre also features the only public fluvarium (an under-the-stream viewing window) in North America. Other permanent exhibits include aquariums, interpretive displays, a discovery room for children, and a demonstration fish hatchery. Workshops, conferences, and training programs are also offered.

With its great variety of displays, exhibits and programs, the centre will appeal to all ages. It is open year round and is fully accessible to disabled persons.

Contact:
Quidi Vidi Rennies River Development Foundation
Box 5, Nagles Place
Pippy Park
St. John's, Newfoundland
A1B 2Z2
TEL: (709) 754-3474
FAX: (709) 754-5947

Royal Canadian Institute

Since 1849, the Royal Canadian Institute has provided a forum for Canadian scientists to present and discuss their ideas. In recent years, it has expanded its mandate to include a range of science and technology programs for the public.

The institute presents an annual series of free public lectures, which cover a variety of scientific topics. The lectures are delivered by Canadian scientists renowned in their fields. It has also produced two series of radio programs on science and technology using speakers from the lectures. Topics have ranged from Alzheimer's disease to extra-terrestrial life. The programs, which originally aired on Toronto's CJRT-FM, have been heard on stations across Canada, including university campus stations. Two-minute "fillers" based on the series will be sent to radio stations in the fall of 1991.

The *Sandford Fleming Medal* is also awarded annually by the institute to Canadians who have made an outstanding contribution to public understanding of science. Previous winners include science writers and broadcasters, such as David Suzuki and Jay Ingram, and Annabel Slaight, President of the Young Naturalist Foundation.

In addition, the institute sponsors the *Royal Canadian Youth Science Academy* which was founded in 1989. A council composed of students directs activities with the assistance of the institute and the Toronto Board of Education. Activities include seminars, excursions to laboratories, a bulletin board service for those with access to a computer and modem, and a newsletter.

The institute also provides a regular column for *The Crucible*, the Ontario Science Teachers Association journal. The column contains articles on Canadian science and ways of introducing it into the classroom.

The institute is constantly seeking new ways to develop public interest in science and technology.

Contact:
Royal Canadian Institute
Suite 312
720 Spadina Avenue
Toronto, Ontario
M5T 2T9
TEL: (416) 928-2096

Science Information Sources

Science Information Sources (SIS) is a media referral service designed to improve communication between scientific researchers and the media. Originally developed by the Canadian Science Writers' Association, the service functions as a hot-line for Canadian journalists to obtain relevant information on new science developments from Canadian researchers.

The service emerged out of concern about the dominance of foreign science news in the Canadian media. Since its inception in 1984, SIS has established a free, bilingual, national telephone service open to anyone needing information on a particular scientific issue. The resource bank currently holds information on 2 000 Canadian scientists. When an enquiry is made, SIS selects the scientist best capable of answering. For controversial issues, names of scientists reflecting various views are given. A computerized system minimizes waiting time for a response.

Contact:
Canadian Science Writers' Association
24 Ryerson Avenue, Suite 209
Toronto, Ontario
M5T 2P3
TEL: (416) 361-1427
FAX: (416) 860-0826

Science Institute of the Northwest Territories

"The best way to ensure that northerners benefit from science is to ensure that they participate." The Science Institute of the Northwest Territories was founded with this belief. Since 1984, it has been developing activities in the Northwest Territories to promote the value of science and technology and to stimulate the interest of young people in science.

A major focus of the institute's activities is the promotion of science fairs. The *Dial-an-expert* service allows students to contact a scientist for advice on designing a science project. The institute has also produced *Science Alive!*, a resource book that contains northern-oriented science activities. In addition, a how-to kit entitled *Why do Walrus Turn Pink?* helps teachers and students to organize and participate in science fairs. The institute continues to support the growing science fair movement by maintaining liaison with the national Youth Science Foundation.

Another project involves reaching northern communities through radio. From September 1988 to June 1989, the institute contributed a daily item of science news to CKNM, an FM station in the western territories. Each item was broadcast in English, then translated and re-broadcast in seven native languages. The items were later picked up by the CBC. These broadcasts enabled a broad audience to receive scientific information.

The institute recognizes the need for raising science literacy in the North and strives to meet this challenge.

Contact:
Science Institute of the Northwest Territories
P.O. Box 1617
Yellowknife, Northwest Territories
X1A 2P2
TEL: (403) 873-7592
FAX: (403) 873-0227

Science North

Science North science centre provides stimulating learning opportunities and experiences throughout Northern Ontario. Programs involve people in the relationships among science, technology and everyday life, with a northern emphasis. The centre is a popular attraction for out-of town visitors.

Science North is well-known for its unique methods of promoting science and technology. An example is its *Energy Education Program*, which features interactive exhibits on energy sources and uses. Visitors can experiment with solar, wind and hydro power. The centre has also developed an energy challenge for high school students throughout Northern Ontario. School teams will identify an environmental or energy issue in their school or community and then develop a plan to implement a solution.

To increase the involvement of young women in science and technology pursuits, Science North offered the *Young Women Inventors* workshop series from January 24 to April 13, 1991. Fourteen girls in grades 7 and 8 from the Sudbury region participated. They attended workshops on themes associated with inventing, from the idea process and design to manufacturing, patents and marketing. The girls were actively involved with inventing and fabricating their own ideas. The series was so successful, it may be offered in 1992 as a co-ed program.

Another new project is Science North's *Kinder Kids* program, which is geared to making young children and their parents comfortable with science from an early age. The program has already reached 60 children between the ages of four and seven. Children spend 1 1/2 hour sessions exploring everything from bubbles to windsocks. This week-long program has been offered in Timmins, North Bay, Sault Ste. Marie, and Thunder Bay. Science North also reaches out to older children, ages 8-12, through its *Discovery Camp* project (see page 96).

Since its grand opening in June 1984, the centre has been drawing over 270 000 visitors yearly. The *Big Nickel Mine* and *Path of Discovery* tours are also popular tourist attractions. Programs are bilingual.

Contact:
Science North
100 Ramsey Lake Road
Sudbury, Ontario
P3E 5S9
TEL: (705) 522-3701
FAX: (705) 522-4954

Société linnéenne du Québec

The Société linnéenne du Québec works to conserve nature by disseminating information on the natural sciences and the environment. A major player in this field throughout Quebec, the société encourages the participation of schools and the general public in the preservation of species and ecosystems.

The Société linnéenne has four major interpretation programs at natural sites along the St. Lawrence. The Cap Tourmente National Wildlife Area is the site of a migratory gathering of snow geese. On land and water, naturalists provide visitors with information on the floral and ornithological wealth of this huge natural park. The Point-Noire coastal station is a land base where the public is made aware of the precarious situation of beluga whales and the importance of creating a marine park. Two bilingual programs for families and children are offered by the Quebec Aquarium, which has 3 000 specimens: *Faites le phocus*, on seals, and *Laurent s'en va-t-en mer*, on protection of the St. Lawrence. The société also provides programs at the Domaine Joly de Lotbinière, an historic site with magnificent gardens and special access to the river. In addition, the société offers river trips and develops educational kits and many bilingual educational publications.

The société is committed to teaching respect for and preservation of the environment.

Contact:
Société linnéenne du Québec
1675 avenue du Parc
Sainte-Foy, Québec
G1W 4S3
TEL: (418) 683-2432
FAX: (418) 683-2893

Société pour la promotion des sciences et de la technologie

"The population of Quebec lacks opportunities to become familiar with science and technology." In response to this statement, the Société pour la promotion des sciences et de la technologie (SPST) offers scientific education programs. Better known as the Semaine des sciences, this network of partners — associations, representatives of industry and others — works to raise the awareness of scientific endeavours with the general public to increase Canada's competitiveness.

The SPST's *Quinzaine des sciences* is a series of science visits, presentations and demonstrations held across Quebec for two weeks each year. The events, which involve representatives of nine regions, are intended to interest young and old in regional and national scientific achievements. Over 180 000 individuals are reached through the Quinzaine's many diverse activities. Over the years, some 250 partners from all across Quebec, among them the media and institutions, have helped members of the SPST disseminate information and publicize events.

The SPST enables young people and others to enjoy science while becoming better informed.

Contact:

Société pour la promotion des sciences et de la technologie
84 rue Notre-Dame ouest, suite 800
Montreal, Quebec
H2Y 1S6
TEL: (514) 873-1544
FAX: (514) 873-7402

Women Inventors Project

What do Scotchguard™, the Melitta™ drip coffee-maker, and the board game Balderdash™ have in common? They were all conceived by women. Bringing a good idea to light, however, is not an easy task. It takes confidence, persistence, and a firm belief in your abilities. For women, the odds are even greater: over the past 200 years, only 1.5 percent of all patents have been issued to women.

The Women Inventors Project strives to knock down the barriers to inventing while dispelling gender stereotypes. The project offers information, advice and encouragement to women, as they strive to market their creations.

Since 1986, the Women Inventors Project has provided services to women of all ages. Achievements include workshops for teachers and students, a video entitled *What If? Women Inventors and Entrepreneurs*, and a newsletter containing information for and advice from women inventors. The project has also produced educational materials such as *The Book for Women Who Invent or Want To*, *The Daughters of Invention Handbook*, and *Inventing Women: Profiles of Women Inventors*. It is also responsible for the first exhibit of inventions by Canadian women. *The Women of Invention* exhibit is currently travelling across Canada under the sponsorship of the National Museum of Science and Technology.

The Women Inventors Project has given presentations throughout North America and has received international recognition for its achievements, including a gold medal from the United Nations' World Intellectual Property Organization. As the name suggests, the Women Inventors Project is aimed towards women entrepreneurs. Yet it provides useful information for all creative minds, regardless of age or gender.

Contact:
Women Inventors Project
22 King Street South, Suite 500
Waterloo, Ontario
N2J 1N8
TEL: (519) 746-3443
FAX: (519) 747-2644

Young Naturalist Foundation

The Young Naturalist Foundation captures the excitement of science and nature and brings it home to children. Everything the foundation produces encourages kids to explore, to be creative and to care about the world around them. It makes learning fun and challenging.

Better known as OWL, the Young Naturalist Foundation was established in Toronto in 1975. It reaches children through a variety of venues, including best-selling books such as *Dr. Zed's Science Surprises* and *I Didn't Know That*. OWL, a nature and science discovery magazine for ages 8-12, and *Chickadee*, a companion magazine for younger children, have won numerous awards for excellence (see page 49). Recent awards include the 1990 Golden Lamp Honor Award, presented to OWL magazine by the Educational Press Association of America, and the Sandford Fleming Award for Outstanding Achievement in Promoting Understanding of Science.

OWL has also turned to television to broaden its audience. OWL TV, the nature and science series for 8-12 year olds, has received rave reviews. Formerly broadcast on the CBC and educational networks in Canada, it can now be seen on the CTV network. Another venture, the *OWL Centre for Children's Film and Television*, strives to increase the quality and quantity of Canadian children's programming. Fans can look forward to exciting future projects, including a game show that focuses on inventions and creative problem solving. *Lights On!* promises to be a hit among children 8 to 12.

OWL continues to produce high quality and entertaining material, making its distinctive mark in communicating the wonders of science to children.

Contact:
Young Naturalist Foundation
56 The Esplanade, Suite 213
Toronto, Ontario
M5E 1A7
TEL: (416) 863-1661
FAX: (416) 868-6009

Youth Science Foundation

The Youth Science Foundation has a mission to promote an understanding and appreciation of science in every young Canadian. Recently, the foundation has focused greater attention on raising science literacy among young people and attracting them, especially women, into science and technology careers. Its activities also enable participants to strengthen their communication skills as they learn about science.

The foundation has been the guiding force behind the science fair movement in Canada since its incorporation in 1966, when it became the successor to the Canadian Science Fairs Council. Science fairs now involve over 500 000 students and over 8 000 volunteers as organizers and judges. In 1991, 383 students representing 297 projects attended the annual *Canada-Wide Science Fair*, which was held in Vancouver.

Another popular program is the *National Science Olympics*, team-oriented competitions that stimulate creative thinking among 14-19 year-olds. Great success has also been met with the *Young Scientists of Canada*. Divided into three age groups: junior (10-15), high school (16-18) and university (19-24), this program supports the formation of school and community science clubs.

The foundation also runs national student exchanges. For example, every year, two students are sent to the Stockholm International Youth Science Seminar held in connection with the Nobel Prize festivities. In addition, the foundation distributes a number of publications for teachers and promotional items including buttons, stickers and science fair certificates.

Through its many programs and activities, the foundation strives to reach all young Canadians from ages 3 to 24. All services are available in English and in French.

Contact:
Youth Science Foundation
904-151 Slater Street
Ottawa, Ontario
K1P 5H3
TEL: (613) 238-1671
FAX: (613) 238-1677

Yukon Science Institute

The Yukon Science Institute (YSI) plays a key role in bridging the gap between the public and the scientific community in the North. The only organization of its kind in the Yukon, the institute strives to raise public awareness of science and technology. It also promotes scientific and technological research in the territory and encourages Yukoners to become more involved in this research.

The YSI provides a variety of programs. For example, it offers a regular radio show on the CBC. *Something Scientific* airs weekly, informing Yukoners on topics that range from the colour of lakes to snow geese to arctic dinosaurs. The institute also puts out a weekly newspaper column in the *Yukon News*; "Sourdough Scientist" covers a range of northern and general science topics and is circulated to every community in the territory.

Six times each winter, prominent scientists are invited as guest speakers for the institute's major lecture series. These lectures are open to the public free of charge. In 1990, the series attracted nearly 300 people per lecture. The scientific community also takes part in another YSI activity, the weekly *Lunch-Time Seminar Series*. YSI also sponsors the annual *Yukon Regional Science Fair*. Interest in this event is steadily increasing, with 240 students from 22 schools throughout the territory and northern British Columbia participating in 1990. In addition, grade 11 and 12 students participated in the institute's job shadowing program, which matches students with scientists of different specialties, including botany, archaeology and hydrology.

The institute has been bringing Yukoners and science closer together since 1985.

Contact:
Yukon Science Institute
c/o Yukon College
P.O. Box 2799
Whitehorse, Yukon
Y1A 5K4
TEL: (403) 668-8878
FAX: (403) 668-8814



VIDEOS, FILMS AND TELEVISION PROGRAMS

Breakthrough
Conservation Strategy Connections
The Cutting Edge
Funfair Physics
Human Faces of Science and Technology
The Lake that Fell to Earth
The Living Flow
Messages In Stone
Oxygen: What A Gas!
Quebec International Science Film Festival
* Science amateurs
Secrets of Ice
Space Pioneers
The Spacewatch Club
Women In Science

Additional Videos, Films and Television Series

Evolution In Action
Geology of Atlantic Canada Video Series: Oil and Gas Story
Humanity, Science and Culture
Lights On!
Northern Lights: Science and Mythology
The Other Side of Mount Royal
Questions
Reading You Loud and Clear: Marconi in Canada
Tomorrow, Today

* Available only in French.

Breakthrough

Breakthrough is a weekly television series that presents recent discoveries in science and technology. Much quality research is currently under way in Canada, yet most Canadians are unaware of the exciting breakthroughs being made. The series contains 13 episodes that cover a total of 64 different stories. Each half hour show explores the world of high-tech and demonstrates how scientific advances affect the lives of ordinary people. Topics range from recycling plastic to robotics

to why the sun makes some people sneeze. Hosted by Lorraine Graves, the show is of interest to all ages. As a result of positive audience response, the Open Learning Agency of British Columbia is marketing video copies of the series for educational use within the province. The series is also being dubbed into Spanish for the South American market.

Developed by Pearl Productions, *Breakthrough* first aired on the CBC network in

1990. It was also shown on the Knowledge Network in British Columbia, ACCESS Network in Alberta and the Saskatchewan Communications Network.

Contact:
Pearl Productions Ltd.
6731 Steveston Highway
Richmond, British Columbia
V7E 2L2
TEL: (604) 272-5224

Conservation Strategy Connections

In 1980, the United Nations Environmental Program launched the World Conservation Strategy. The strategy underlines the need to conserve the earth's resources by balancing economic development with environmental conservation.

Conservation Strategy Connections is a 13-minute video aimed at students in grades 7, 8, and 9 as well as community education groups. It illustrates the strategy by examining a unique wildlife study in Alberta on the decline of mountain caribou. The video revolves around a board game entitled The Conservation Strategy Game. Game players represent key industries and government decision makers whose activities affect caribou survival. These players are challenged to develop a caribou conservation strategy taking into account concern for protection of wildlife habitats and resource development such as oil and gas, forestry and agriculture. This approach involves the audience in the development of conservation strategies and allows viewers to appreciate the great impact that science and technology have on economic and social development in contemporary society.

Print modules complementing the video have also been developed for use in science and social studies programs. They provide the teacher with a lesson plan that will help establish an understanding of conservation strategies and sustainable development.

Conservation Strategy Connections was developed by the Friends of Environmental Education Society of Alberta.

Contact:
Friends of Environmental Education Society of Alberta
9914-76 Avenue
Edmonton, Alberta
T6K 1K8
TEL: (403) 439-0243
FAX: (403) 432-1203

The Cutting Edge

The *Cutting Edge* is a five-part video series which takes a look at scientific research, the resulting technology, and how Canadian society has benefited from it. Although based on research and technology developments in Alberta, the programs demonstrate innovative research conducted by Canadians throughout the country. These half-hour television programs come in a magazine format. Each show covers state-of-the art research from disciplines in the natural sciences, health sciences, social sciences

and humanities, engineering and computing sciences, and sport sciences. Part one of the series, The Mechanics of Movement, received an Award of Merit from the Association for Media Technology in Education in Canada in June 1989.

The *Cutting Edge* was developed by the Department of Communications Media at the University of Calgary. The series was first broadcast on ACCESS Network in 1989 and has since been re-broadcast due to popular demand. Although aimed at a

general adult audience, high school students will find the content interesting and understandable.

Contact:
Department of Communications
Media

The University of Calgary
2500 University Drive N.W.
Calgary, Alberta
T2N 1N4
TEL: (403) 220-3709
FAX: (403) 282-4497

Funfair Physics

Few children are aware of the physics involved when enjoying the pleasures of a swing set. The application of physics to situations in the physical environment is not something students do naturally. Friday Street Productions meets the challenge of linking physics to the real world with a series of six-minute videos entitled *Funfair Physics*. The series examines amusement park rides and demonstrates the forces at work that make them operate. Each of the ten segments takes a different ride and correlates the physical sensations a participant feels with the mathematical calculations underlying that experience. The series is an innovative way to stimulate interest in and understanding of physics.

Friday Street Productions specializes in educational programming. The short video segments are designed to complement and enhance existing curriculum units on mechanics in secondary school. They are also an ideal length to be used as fillers on educational broadcasting networks.

Contact:
Friday Street Productions
1272 May Street
Victoria, British Columbia
V8V 2T2
TEL: (604) 380-6656
FAX: (604) 380-6670

Human Faces of Science and Technology

Science and technology are often viewed as cold and impersonal pursuits. *Human Faces of Science and Technology*, a half-hour documentary program, was developed to humanize the subject. The program focuses on the people who carry out research in a range of areas including medicine, agriculture, biotechnology and energy, and those

who benefit from this research. It provides information on how science and technology operate in society, exploring scientific and technological developments from Alberta, Saskatchewan and Manitoba.

Human Faces of Science and Technology is a co-production of ACCESS Network and the Alberta, Saskatchewan

and Manitoba Research Councils. The program was broadcast on ACCESS Network in Alberta.

Contact:
ACCESS Network
Program Services
295 Midpark Way S.E.
Calgary, Alberta
T2X 2A8
TEL: (403) 256-1100

The Lake that Fell to Earth (The New Quebec Crater)

In the middle of the tundra, the deepest freshwater lake in North America has curious characteristics. It is in fact the best-preserved crater produced by a meteorite. *The Lake that Fell to Earth* is a video documentary which answers the many questions raised by this phenomenon. Lasting 58 minutes, the video studies the origin of this crater, its impact on the natural environment, glaciation and the life that developed in the lake. The video, which is an adventure film as well as an educational documentary, is designed for the general public and secondary school students.

Les productions Impex, the company that produced the film, also develops training, educational and popular science material.

Contact:
Les productions Impex inc.
353 rue Saint-Nicolas, suite 401
Montreal, Quebec
H2Y 2P1
TEL: (514) 284-0204
FAX: (514) 284-9581

The Living Flow

In its report Water 2020, the Science Council of Canada states that "Canadians must adopt a goal of sustainable use for water," and that "Canada can use and direct science and technology to this end." ACCESS Network responded by developing four 60-minute documentary programs on water resource management in Canada. *The Living Flow* presents the relationship among water, natural systems and human activity. It also examines

the science and technology used to meet the challenges of sustainable development. The programs delve into a variety of issues including pollution, hydro power, the greenhouse effect, and sewage and water treatment. In addition, *The Living Flow* promotes a sense of personal, social and global responsibility for the use of water.

ACCESS Network, the trade name of the Alberta Educational Communications Corporation,

has been developing, producing and distributing learning materials to Albertans since 1973. The series is directed at the general public as well as secondary and post-secondary institutions.

Contact:
ACCESS Network
16930-114 Avenue
Edmonton, Alberta
T5M 3S2
TEL: (403) 451-7272
FAX: (403) 452-7233

Messages In Stone

Documentaries have been made about the remains of dinosaurs, but few have tried to breathe life into these fascinating fossils. *Messages In Stone* takes a unique approach. This film uses three-dimensional animation to bring a herd of dinosaurs to life. We then follow them on an 800-km migration from their winter nesting grounds in Alaska to their summer feeding range in central Alberta. A recently discovered dinosaur, the pachyrhinosaurus, is also reconstructed. Viewers will learn how Canadian fossil research has contributed to a better understanding of dinosaurs and their diversity of form and function. Additional information is provided on everything from what can be learned from fossils to theories on extinction.

Messages In Stone has two 25-minute segments. This educational film is particularly suited to elementary school students, but the exciting visual effects will capture viewers young and old alike. It is available to schools, science centres, museums, libraries, home video stores and public television companies.

Contact:
Prehistoric Productions
47-4740 Dalton Drive Northwest
Calgary, Alberta
T3A 2H4
TEL: (403) 247-4593
FAX: (403) 247-4593

Oxygen: What A Gas!

Abstract concepts of oxygen and oxidation come alive in this video by MediCinema. Multi-coloured beakers bubble over and saxophones blare in the background as the outrageous jazz band the Shuffle Demons praise their favourite gas to a funky beat. This video packages its information in a truly unique way. Animation and humour are combined with live action footage of mountaineering and wildlife. The film takes a comprehensive look at

oxygen, from its discovery to its current medical and industrial applications. Adaptation to the low oxygen of high altitudes and the current medical and industrial uses of oxygen are also covered. The end result is a film that entertains as it educates.

Oxygen: What A Gas! won the Golden Apple Award, as best Life Science-High School production for 1991 at the U.S. National Educational Film and Video Festival in Oakland. Although

this video is aimed at students in grades 7 to 13, it has universal appeal.

Contact:
MediCinema Ltd.
131 Albany Avenue
Toronto, Ontario
M5R 3C5
TEL: (416) 532-4209
FAX: (416) 977-0569

Quebec International Science Film Festival

The *Quebec International Science Film Festival* promotes the use of audio-visual media to improve science culture. In 1990, the first festival presented about 40 films on the environment, from 16 countries. The second festival, which runs from October 21 to 27, 1991, focuses on the vast field of communications and, once again, on the environment.

Screenings and other activities of interest to everyone will be held simultaneously at the Musée de la civilisation de Québec and at the Jardin botanique de Montréal. Schools and the general public will attend showings of the festival's best scientific films. Other activities include an awards ceremony, discussions and evening entertainment with top international celebrities.

The festival raises public awareness of the importance of science and technology in our society and encourages the production of scientific films.

Contact:
Quebec International Science Film Festival
15 rue de la Commune ouest
Montreal, Quebec
H2Y 2C6
TEL: (514) 849-1612
FAX: (514) 982-0064

Science amateur

To encourage science as a hobby, La Chaîne française, a division of TVOntario, produced *Science amateur*, a series of seven 30-minute programs. The series is intended for Ontario Francophones who are interested in science and technology but have not necessarily had much science training. The series deals with botany, astronomy, ecology,

geology, mineralogy, ornithology and mycology. Each program presents a person engaged in scientific activity during his/her leisure time and explains the fundamental principles of the particular science involved.

La Chaîne française, part of the educational network of TVOntario, produces programs for viewers of all ages.

Contact:
La Chaîne française de
TVOntario
2180 Yonge Street
P.O. Box 200, Station Q
Toronto, Ontario
M4T 1T2
TEL: (416) 484-2633
FAX: (416) 484-7205

Secrets of Ice

The Arctic, in its serene and pristine beauty, is one of our last untouched frontiers. Or is it? Scientific research in the North has revealed a range of serious environmental problems associated with human activity. *Secrets of Ice*, a 30-minute film by Breakthrough Films and Television Inc., chronicles the work of two Canadian scientists who are investigating the Arctic's fragile ecosystem. This video shows how major contaminants such as PCBs (polychlorinated biphenyls) and other chemicals and pesticides travel to the Arctic, thus endangering marine mammals, terrestrial wildlife and ultimately the Inuit. Research regarding changes in the Arctic climate is also featured.

Secrets of Ice is the third part of a television series exploring Canada's environment. The program premieres on CKVR-TV Barrie in the fall of 1991, followed by syndicated network broadcasts across Canada. Educational and home video distribution will be targeted towards schools and science centres.

Contact:
Breakthrough Films and Television Inc.
67 Mowat Avenue, Suite 331
Toronto, Ontario
M6K 3E3
TEL: (416) 534-2307
FAX: (416) 534-5879

Space Pioneers

Canada has been involved in the conquest of space since 1962. *Space Pioneers* is a one-hour film that presents English- and French-speaking audiences with Canada's many achievements in aerospace endeavours. The film relates the beginnings of space exploration and the adventures of Canadians who made it possible.

It includes original interviews with the pioneers as well as photographs and archival film. From supersonic phenomena to man-made satellites, the space era reveals inestimable secrets for the future of the entire world.

With this film, Rudy Buttignol has created a tribute to the first pioneers of space. Since

1975, his firm, Rudy Inc., has produced some 60 educational films.

Contact:
Rudy Inc.
40 Glengarry Avenue
Toronto, Ontario
M5M 1C9
TEL: (416) 489-7115
FAX: (416) 489-7760

The Spacewatch Club

The *Spacewatch Club* is a 10-part television series that shows learning can be as fun as it is challenging. Programs take advantage of young people's fascination with space to introduce them to new technologies and reinforce a broad range of science information.

Each show follows the adventures of the Spacewatch kids: J.T. (the spacebuff), Cath (the computer whiz), Martin (the biology brain), and Emily (the artist). The kids organize their club around a home-built computer contraption. After an amazing metamorphosis, the computer turns into a wise-cracking character (W.A.L.T.E.R.) with the magical ability to "teleport" them anywhere. With W.A.L.T.E.R. leading the way, the kids discover the world of space exploration, from astronauts to asteroids, from science and technology to culture and the cosmos.

The *Spacewatch Club* is scheduled to be broadcast on Global Television and YTV. Programs are designed for audiences between the ages of 8-12. A teacher's guide will also be available.

Contact:
Rudy Inc.
40 Glengarry Avenue
Toronto, Ontario
M5M 1C9
TEL: (416) 489-7115
FAX: (416) 489-7760

Women In Science

Women In Science is a six-part series on women who have chosen challenging careers in fields traditionally dominated by men. The series pays tribute to the technological and scientific achievements of Canadian women in fields such as biotechnology, marine engineering, nuclear science and transplant immunology. Each program features the stories of two women scientists and the nature of their work. The women also discuss

how they first chose their particular field and how they manage to integrate a scientific career with outside interests.

The *Women In Science* educational video series was produced by Spectra Video Productions. Profiles of the women are designed to heighten interest in their scientific work, foster a sense of pride in Canadian achievements, and stimulate audiences to pursue careers in science and

technology. The series is targeted specifically at girls in junior high school, but is suitable for a general school audience, including boys, teachers and parents.

Contact:

Spectra Video Productions Ltd.
Bay 3 – 1253 Clarence Avenue
Winnipeg, Manitoba
R3T 1T4
TEL: (204) 452-9832
FAX: (204) 453-6437

Additional Videos, Films and Television Programs

Evolution In Action

Brings evolutionary biology to life by presenting a case study of the recent adaptive radiation of fish in Western Canada. Comes with an instructor's manual. Scheduled for release in March 1992.

Length: 28 minutes

Audience: post-secondary students, general public

Language: English

Open University
7671 Alderbridge Way
Richmond, British Columbia
V6X 1Z9
TEL: (604) 660-5278
FAX: (604) 660-2272

Geology of Atlantic Canada Video Series: Oil and Gas Story

Documents the history of oil and gas exploration in the Atlantic region and explains the process of offshore exploration, discovery and development. The last of a four-part series, this program demonstrates the relevance of earth sciences in the context of current issues, especially environmental safety. Scheduled for release in February 1992.

Length: 30 minutes

Audience: high school students, general public

Languages: English and French

Atlantic Geoscience Society
Atlantic Geoscience Centre
P.O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2
TEL: (902) 426-5657
FAX: (902) 426-4467

Humanity, Science and Culture

Demonstrates the integral relationship among science, technology and cultural life in Canada. Comes with companion workbooks.

Length: 60 minutes

Audience: high school students, general public

Language: English

Dr. Henry Wiseman
Department of Political Studies
University of Guelph
Guelph, Ontario
N1G 2W1
TEL: (519) 824-4120
FAX: (519) 837-9561

Lights On!

A children's television series on inventions, inventiveness and creative problem solving. Game-show format currently being developed. Production to begin in the spring of 1992.

Length: 30 minutes

Audience: children ages 8-12

Language: English

Young Naturalist Foundation
56 The Esplanade, Suite 213
Toronto, Ontario
M5E 1A7
TEL: (416) 863-1661
FAX: (416) 868-6009

Northern Lights: Science and Mythology

A balanced presentation of Canadian scientific research and northern people's mythology of the Northern Lights.

Length: 28 minutes

Audience: junior high school students, general public

Language: English

Yellowknife Films
BOX 2562
Yellowknife,
Northwest Territories
X1A 2P9
TEL: (403) 873-8610
FAX: (403) 873-9405

The Other Side of Mount Royal

A documentary film for television on Canada's contribution to the secret manufacture of the first atomic bomb, from 1943 to 1945, in Montreal.

Length: 60 minutes

Audience: general public

Languages: English (subtitles) and French

Azinamé International inc.
4157 rue Saint-Hubert
Montreal, Quebec
H2L 4A7
TEL: (514) 521-3652

Questions

Video to encourage positive attitudes in girls towards science careers.

Length: 6 minutes, 30 seconds

Audience: primary school children up to grade 8 and their teachers

Language: English

York University/Canadian
Association for Women in
Science
2275 Bayview Avenue
Room 163, York Hall
Toronto, Ontario
M4N 3M6
TEL: (416) 487-6732
FAX: (416) 487-6728

**Reading You Loud and Clear:
Marconi in Canada**

Documents Guglielmo Marconi's work in Canada and underlines Canada's role in the birth of the communications age. Scheduled for completion in 1992.

Length: a 60-minute documentary available in 16mm or video format

Audience: secondary school children, general public

Languages: English and French

ARC Films Ltd.
The Film Centre
2085 Maitland Street
Halifax, Nova Scotia
B3K 2Z8
TEL: (902) 429-8001
FAX: (902) 425-7339

Tomorrow, Today

Canada's only daily news program on the applications of technology and scientific research. Now in its 100th week, the program runs four times daily and twice on weekends on CBC Newsworld.

Length: 5 minute reports

Audience: general public

Language: English

AirTime International Inc.
Box 876, Station A
Toronto, Ontario
M5W 1G3
TEL: (416) 366-2289
FAX: (416) 366-3087

RADIO PROGRAMS

Broadcast Science Canada

Science Awareness – Sid Katz

Additional Radio Series

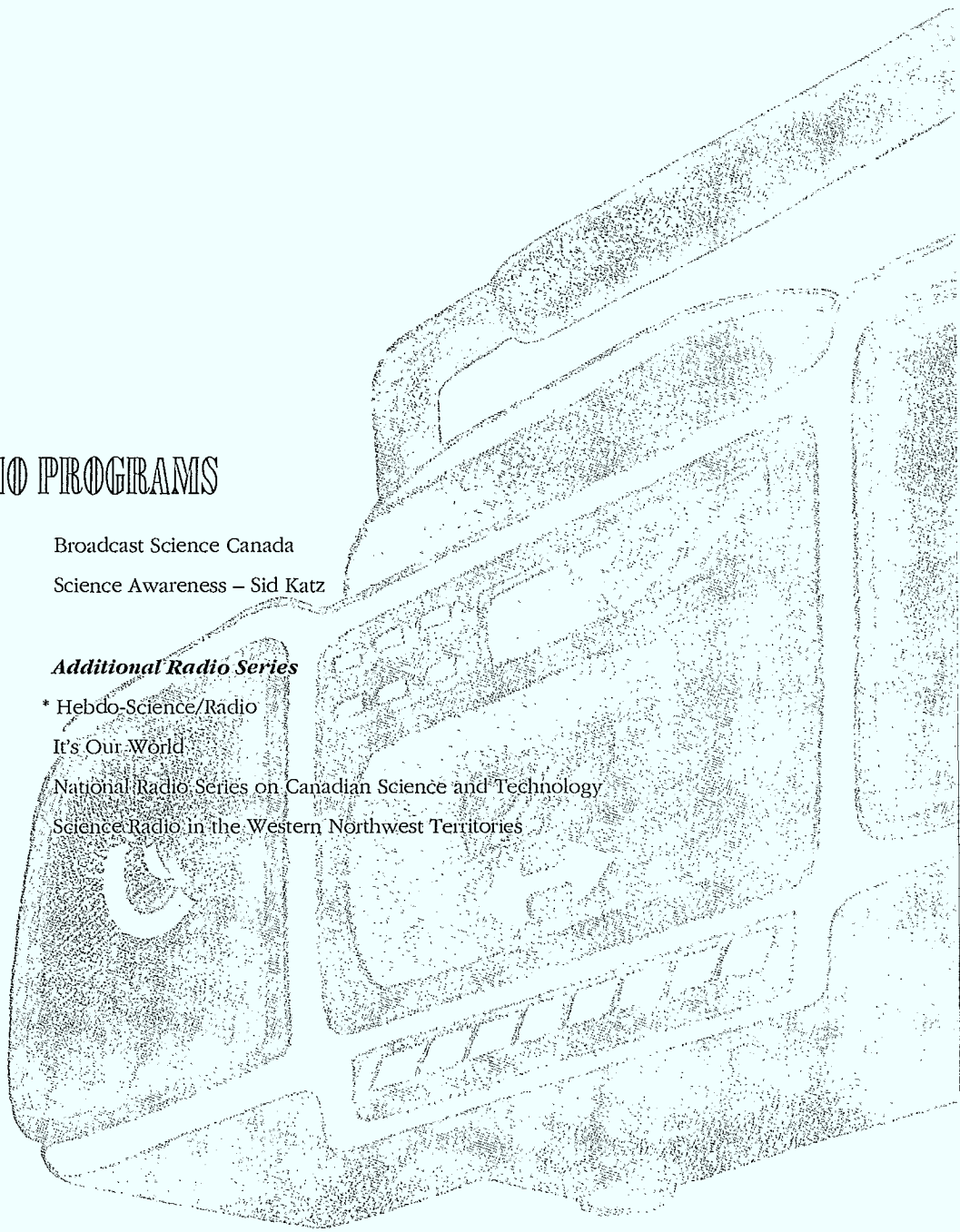
* Hebdo-Science/Radio

It's Our World

National Radio Series on Canadian Science and Technology

Science Radio in the Western Northwest Territories

* Available only in French.



Broadcast Science Canada

In recent years, Canadians working in the natural sciences have made significant contributions of global importance, yet few of us are aware of these accomplishments. *Broadcast Science*

Canada is a series of public service announcements that fills this knowledge gap by highlighting Canadian innovations, inventions and developments in all fields of natural science. Topics range from radio telemetry (the use of radio transmitters to study wildlife) to rabies vaccine to

remote sensing of icebergs. The announcements, which vary between 30 and 90 seconds in length, were broadcast on public and commercial radio stations across Canada in 1990.

Broadcast Science Canada was a joint effort, undertaken by Bufo Inc., a company primarily involved in scientific communications, and The Friends of Wye Marsh, an association that promotes awareness, appreciation, understanding and enjoyment of our environment and wildlife

resources. The announcements were directed to the listening public across the country.

Contact:
Bufo Inc.
Box 91332
West Vancouver,
British Columbia
V7V 3N9
TEL: (604) 926-8717
FAX: (604) 926-0205

Science Awareness – Sid Katz

When it comes to informing Canadians on science and medicine, Sid Katz is sure to deliver. He is a familiar voice in Canada, helping people understand the nature of disease, the human body, and how it interacts with the environment. His radio commentaries reach an estimated 1.5 million listeners nation-wide. He can be heard on various morning shows on the CBC. A medical correspondent on the CTV national news and a regular on the BCTV Noon News, Dr. Katz is no stranger to television either.

Dr. Katz is a professor of pharmacology at the University of British Columbia. His contributions to science awareness earned him the prestigious Gordin Kaplan Award in 1990.

Advances in science and medicine are rapid and carry profound implications. Dr. Katz provides friendly and straightforward updates on the latest developments.

Contact:
Dr. Sid Katz
Faculty of Pharmaceutical Sciences
University of British Columbia
2146 East Mall
Vancouver, British Columbia
V6T 1W5
TEL: (604) 228-5989
FAX: (604) 822-5679

Additional Radio Programs

Hebdo-Science/Radio

Weekly publication developed for French-Canadian radio stations. Each includes a dozen short reports on scientific research and science news from Canada and elsewhere.

Agence Science-Pressé
3995 rue Sainte-Catherine est
Montreal, Quebec
H1W 2G7
TEL: (514) 522-1304
FAX: (514) 522-1761

It's Our World

David Onley and Bob Hunter provide three-minute reports on current environmental issues and positive ways to address them. (Developed from a program entitled Science Update With David Onley, which was funded by Science Culture Canada). Items will be broadcast to audiences across the country starting the fall of 1992.

Tower Corporation Management
Consultants Ltd.
22 David Street West
Box 305
Elora, Ontario
N0B 1S0
TEL: (519) 846-0417
FAX: (519) 846-0417

National Radio Series on Canadian Science and Technology

Two-minute radio segments on Canadian science and technology aired weekly, nation-wide, on Broadcast News. Some items translated into French and delivered to Quebec-based stations.

Science and Technology
Information Systems Inc.
3516 Wiltshire Drive
Nanaimo, British Columbia
V9T 5K1
TEL: (604) 756-9569
FAX: (604) 756-9569

Science Radio in the Western Northwest Territories

Daily items of science news that were broadcast on CKNM, in English, and then translated and rebroadcast in seven native languages. Segments aired from September 1988 to June 1989, and were later picked up by the CBC.

Science Institute of the NWT
P.O. Box 1617
Yellowknife, NWT
X1A 2P2
TEL: (403) 873-7592
FAX: (403) 873-0227

PUBLICATIONS AND PERIODICALS

Connections

* Franc-Vert (Franc-Nord)

Knee High Nature

* Les petits débrouillards

OWL and Chickadee

* Pluies acides et dépérissement des forêts

* Québec Science

Science Live

Thinking the Unthinkable: Civilization and Rapid Climate Change

* Une passion : la science

Additional Publications and Periodicals

The Astronauts: How Canadians Will Live and Work in Space

The Daily Planet

Handbook on How to Teach Young Children about Pollution and the Environment

* Hebdo-Science/Médias écrits

* Interface

* Les jardins anciens du Québec

PRISM Newsletter

Wildlife Conservation Program

Women's Education des femmes

* Available only in French.

Connections

The planet Earth is our home and all animals and plants are connected through the air, water and food that we share. This audio cassette by Upmeads Music is designed to enhance a child's understanding of the environment. *Connections* celebrates the beauty of the earth and investigates some of the environmental issues threatening our planet. David Suzuki introduces topics

such as pollution and deforestation in a simple yet entertaining way. Children will also enjoy the upbeat songs between each narration. The cassette comes equipped with an activity booklet that reinforces the material presented. *Connections* discusses environmental concerns optimistically, showing children that their actions can make a difference.

The primary target audience for this package is children ages 4-10. *Connections* can be found in retail outlets, schools and libraries.

Contact:
Upmeads Music Ltd.
254 Castlefield Ave.
Toronto, Ontario
M4R 1G6
TEL: (416) 483-5900

Franc-Vert (Franc-Nord)

Franc-Vert, a bi-monthly French magazine published by the Union québécoise pour la conservation de la nature, disseminates scientific and technical information on nature and the environment. When first published in 1983, the magazine was called *Franc-Nord*. It has now entered the 1990s by placing its emphasis on ecology and the environment in everyday life. It seeks to expand science culture among the general public and various specialized audiences. A number of special issues auguring well for the future have already appeared; they include "L'environnement au quotidien" and a supplement entitled "Stratégies Saint-Laurent."

Franc-Vert seeks to raise public awareness of contemporary realities in the natural sciences and the environment.

Contact:
Franc-Vert
160 76^e rue Est
Charlesbourg, Quebec
G1H 7H6
TEL: (418) 628-9600
FAX: (418) 626-3050

Knee High Nature

Parents, teachers and others who work with children will love the *Knee High Nature* series the next time they are faced with an inquisitive small person. These four manuals — *Winter in Alberta*, *Spring in Alberta*, *Summer in Alberta* and *Fall in Alberta* — were written to encourage children and adults to appreciate nature. The books concentrate on animals and plants commonly found in

Alberta, and are informative, useful and fun to read. The material presented is scientifically accurate and accompanied by delightful black and white illustrations. The manuals are filled with stories, poems, songs and follow-up activities kids will enjoy.

The *Knee High Nature* series was written by Dianne Hayley and Pat Wishart. *Winter in Alberta*, the first book to be released, sold 1 000 copies after

only three months and was listed as a best seller in The Edmonton Journal. The manuals are ideal for teachers, parents and leaders of young children, and are available from:

Knee High Nature
52080 Range Road 213
Sherwood Park, Alberta
T8G 1B5
TEL: (403) 922-2527

Les petits débrouillards

Who are Beppo the frog and Professor Scientifix? The stars of the magazine *Je me petit-débrouille* of course! Each month this magazine is read by approximately 60 000 children between 7 and 14 years of age, who find in it the many scientific phenomena present in their environment. The *petits débrouillards* movement also features a weekly television program; a collection of books that includes comic strip albums and science activity books; and science experiment workshops organized in every region of Quebec.

For the past 11 years, this huge effort to attract young people to science and to scientific careers has been the result of co-operation between Agence Science-Pressé and the Conseil de développement du loisir scientifique. The conseil's responsibilities include science experiment workshops, ad hoc activities and regional promotion; Agence Science-Pressé looks after publications and the television series.

Contact:
Agence Science-Pressé
3995 rue Sainte-Catherine est
Montreal, Quebec
H1W 2G7
TEL: (514) 522-1304
FAX: (514) 522-1761

OWL and Chickadee

Children's magazines are one of the trickiest businesses possible in Canada. Over the last century, nearly 70 publications for children have begun and folded. But the Young Naturalist Foundation has beat the odds and proven that quality Canadian children's magazines are possible.

In 1976, the foundation launched *OWL* magazine for ages 8-12 and, three years later,

Chickadee for ages 3 and up. These nature and science magazines spark kids' interest in science and the surrounding world. Currently, *OWL* and *Chickadee* have a national circulation of over 300 000, including the French-language versions *HIBOU* and *Coulicou*. Six international versions bring the total monthly circulation to 500 000. In 1991, the Educational Press Association

of America presented *OWL* with the Golden Lamp Honor Award.

Contact:
Young Naturalist Foundation
56 The Esplanade, Suite 213
Toronto, Ontario
M5E 1A7
TEL: (416) 863-1661
FAX: (416) 868-6009

Pluies acides et dépérissement des forêts

Acid rain is one of the most controversial environmental issues. In order to give the public a clear overview of the situation, *Pluies acides et dépérissement des forêts*, published by Les Éditions Multimondes, deals with causes, effects and solutions. The book provides exhaustive explanations for the destruction of forests in Canada, counteracting a lack of information on this issue. Students, agronomists and environmentalists will appreciate this work.

Les Éditions Multimondes is a communications firm that has published many works on popular science.

Contact:
Les Éditions Multimondes
845 Marie Victorin
Saint-Nicolas Est, Quebec
P.O. Box 2010
G0S 3L0
TEL: (418) 831-0790
FAX: (418) 831-0009

Québec Science

Founded in 1970, the monthly magazine *Québec Science* disseminates the results of research and publicizes scientific innovations in Quebec. This general interest magazine succeeded *Le Jeune Scientifique*, a monthly founded in 1962 by L'Association canadienne-française pour l'avancement des sciences. *Québec Science* directs its efforts to one major goal: to help French-speaking Canadians better follow and interpret current scientific and technological

developments. The magazine offers scientific articles, columns and interviews on medical, aerospace and biological technology. In May 1989, it published a special issue on the environment, which addressed current issues such as air and water quality and waste management. From February 1990 to February 1991, it published a series of columns on innovative technologies in Quebec industry.

Through its use of accessible language, the magazine

de-mystifies science and addresses the impact of technology on the general public.

Contact:
Québec Science
2875 boulevard Laurier
P.O. Box 250
Sillery, Quebec
G1T 2R1
TEL: (418) 657-3551
FAX: (418) 657-2096

Science Live

Science Live introduces 8-12 year-old children to Canadian scientists in a manner that makes their science truly come alive. Every two-page spread in this book features a Canadian scientist with a short illustrated description of that scientist's work, followed by an activity that relates directly to it. Activities are suggested by the scientists themselves. For instance, an archaeologist might suggest making up a time capsule and burying it in the back yard, while an entomologist might give a recipe for a home-made mosquito repellent.

Scientists are chosen from industry, government, and museum and university labs across the country. The book covers fields as diverse as botany, physics, psychology, and engineering. *Science Live* presents scientists as approachable, fun and understandable people who share a common bond with children: namely, curiosity.

Science Live is being written by award-winning science broadcaster and writer Jay Ingram. It will be published by Greey de Pencier Books in the fall of 1992.

Contact:
Greey de Pencier Books
56 The Esplanade, Suite 302
Toronto, Ontario
M5E 1A7
TEL: (416) 868-6001
FAX: (416) 868-6009

Thinking the Unthinkable: Civilization and Rapid Climate Change

In August, 1987, a working group of 50 scientists and humanists from Russia, Eastern and Western Europe, the United States and Canada gathered in Calgary to discuss the impact of sudden climate change upon civilization. Science writer Lydia Dotto was invited to this three-day conference to compile the information for a new book. *Thinking the Unthinkable: Civilization and Rapid Climate Change* outlines

the factors that do or could contribute to sudden changes in weather patterns, such as industrial pollution, volcanic activity and nuclear warfare, and addresses the consequences for social, economic and environmental systems. This timely book was written to emphasize the gravity of the situation we now face.

Thinking the Unthinkable: Civilization and Rapid Climate

Change was published by Wilfrid Laurier Press for the Calgary Institute for the Humanities. Since its release in June 1988, over 1 500 copies have been distributed.

Contact:
Wilfrid Laurier University Press
Waterloo, Ontario
N2L 3C5
TEL: (519) 884-1970 ext. 2124
FAX: (519) 884-1020

Une passion : la science

Published in the fall of 1990 by Les Éditions Multimondes, *Une passion : la science* portrays 15 pioneers of Quebec science. Readers discover the fervour that drove Brother Marie-Victorin, Armand Frappier, Brenda Milner, Fernand Seguin, etc. In her presentation of each of these scientists, Claire Chabot, the principal author, illustrates the main stages in the evolution of science in Quebec. *Une passion : la science* is intended to inspire young people to follow in the footsteps of these pioneers. This book, presented in album format, contains about 100 photographs of significant people, objects and places.

Les Éditions Multimondes, a publishing house founded in 1988, specializes in popular science books.

Contact:
Les Éditions Multimondes
845 Marie-Victorin
Saint-Nicolas Est, Quebec
P.O. Box 2010
G0S 3L0
TEL: (418) 831-0790
FAX: (418) 831-0009

Additional Publications and Periodicals

The Astronauts: How Canadians Will Live and Work in Space

Covers current events in the Canadian space program, including: advanced training of Canadian astronauts, new shuttle flights for Canadian astronauts, development of the Mobile Servicing System for the international space station, and continuing research on scientific and commercial uses of space. Written by Lydia Dotto. Scheduled for release in the spring of 1992.

Audience: general public
Language: English

Stoddart Publishing
30 Lesmill Road
Don Mills, Ontario
M3B 2T6
TEL: (416) 445-3333
FAX: (416) 445-5967

The Daily Planet

Examines common products and services used by Canadians and the environmental consequences arising from the production and disposal of these products. Written by Paul Griss.

Audience: general public
Language: English

Key Porter Books
70 The Esplanade
Toronto, Ontario
M5E 1R2
TEL: (416) 862-7777
FAX: (416) 862-2304

Handbook on How to Teach Young Children about Pollution and the Environment

Presents educators with various lesson plans, such as how to explain acid rain using simple household materials.

Audience: teachers, grades K-5
Languages: English and French

Nomad Scientists
Lacolle Centre
7141 Sherbrooke Street West
Montreal, Quebec
H4B 1R6
TEL: (514) 848-4955

Hebdo-Science/Média écrits

Weekly publication disseminated to the media. Each issue contains four or five articles on scientific research and events in Canada and abroad.

Audience: general public
Language: French

Agence Science-Pressé
3995 rue Sainte-Catherine est
Montreal, Quebec
H1W 2G7
TEL: (514) 522-1304
FAX: (514) 522-1761

Interface

Bi-monthly multidisciplinary popular science magazine reporting on Canadian scientific discoveries.

Audience: researchers
Language: French

Association canadienne-française
pour l'avancement des
sciences
2730 chemin de la Côte-Sainte-
Catherine
Montreal, Quebec
H3T 1B7
TEL: (514) 342-1411
FAX: (514) 342-9552

Les jardins anciens du Québec

Traces the evolution of botanical knowledge and Quebec's plant-life heritage.

Audience: general public

Language: French

Groupe MLPL
1045 avenue du Parc
Quebec City, Quebec
G1S 2W4
TEL: (418) 683-8866

PRISM Newsletter

Provides science teaching techniques, facts, recommended references and activities to help adults introduce science to children.

Audience: parents, teachers and youth group leaders

Language: English

Association for the Promotion
and Advancement of
Science Education
c/o Faculty of Education
Simon Fraser University
Burnaby, British Columbia
V5A 1S6
TEL: (604) 737-2736
FAX: (604) 737-2798

Wildlife Conservation Program

A how-to booklet on building nest boxes to encourage children to enjoy nature. Booklet comprises three sections: leader information, youth activities and leader and youth resources. Originally developed for use in Boy Scout/Girl Guide programs.

Audience: youth group leaders of children ages 9-15

Language: English

Natural History Society of
Newfoundland and Labrador
P.O. Box 1013
St. John's, Newfoundland
A1C 5M3
TEL: (709) 579-9240

Women's Education des femmes

Two issues of a quarterly publication on the concerns of girls and women in science and technology.

Audience: students, their parents, teachers

Languages: English and French

Canadian Congress for Learning
Opportunities for Women
47 Main Street
Toronto, Ontario
M4E 2V6
TEL: (416) 699-1909
FAX: (416) 699-2145



EDUCATIONAL RESOURCES

Acadia University SEE (Science in Elementary Education) Earth Program

* Activités de sciences de la nature au primaire

Backyard Acid Rain Kit (BARK) Program

* Les énigmes du Saint-Laurent

Recombinant DNA Biotechnology Computer Program

Scientists in School

Travelling Discovery Boxes

* Trousse pédagogique sur l'environnement urbain

Additional Educational Resources and Classroom Enhancement Programs

Elementary Science Curriculum Enhancement

Project to Stimulate Development of Science Fairs in the Northwest Territories

Sciencereach

Women in Science at Trent University

* 3D Simulation

* Available only in French.

Acadia University SEE (Science in Elementary Education) Earth Program

Children are naturally inquisitive about the world around them. As they progress to junior high school, however, many tend to lose this natural interest in science. Acadia University's *SEE (Science in Elementary Education) Earth Program* provides exciting science camps for kids and in-service training and support for teachers to help change this inclination.

The *SEE Earth program* was designed by ten elementary school teachers working with Acadia's science faculty and consists of

two week-long residential science camps at the university. Students work in small groups with a teacher and scientists. Activities revolve around the earth theme and include field trips to local beaches, dikelands and woodlands. Children learn about the environment as they collect soil samples to examine their chemical, physical and biological makeup. Evenings are filled with discussions on scientific and social issues such as the responsibility of scientists in

addressing environmental concerns.

During the summer of 1990, 140 grade six students participated in the program. Both students and teachers benefited from the *SEE Earth* experience.

Contact:
Division of Continuing Education
Acadia University
Box 118
Wolfville, Nova Scotia
B0P 1X0
TEL: (902) 542-2201
FAX: (902) 542-7224

Activités de sciences de la nature au primaire

Concrete natural science experiments described on fact sheets available free of charge to schools develop the interests and understanding of youngsters from 6 to 12 years of age. The experiments are designed for either teachers or, depending on their grade, students. The experiments are organized under the following sections: activity, equipment, laboratory, skills, synthesis and evaluation.

The fact sheets are published by the Laboratoire d'expertise en didactique des sciences de la nature et de la technologie of the Université de Chicoutimi, which conducts research on teaching methods in order to expand knowledge and skills in the natural sciences.

Contact:
Université du Québec à Chicoutimi
555 boulevard de l'Université
Chicoutimi, Quebec
G7H 2B1
TEL: (418) 545-5359
FAX: (418) 545-5012

Backyard Acid Rain Kit (BARK) Program

Okay all you environmentalists! Get out your pH-sensitive paper, precipitation collectors and instruction manuals. It's time to monitor the acid rain levels in your own backyard. Public Focus makes it easy, using their *Backyard Acid Rain Kit (BARK)*. This innovative program allows students to record weather conditions including precipitation, volume and acidity levels during four-month periods. School classes in Canada are matched with classes from the United States to encourage interaction and the sharing of data. Data

collected by these young participants are scientifically mapped to show trends in acidity across North America.

Public Focus aims to stimulate public interest in improving and conserving the ecosystem. Although the *BARK Program* is targeted at students in grades 4-10, its content can easily be adapted for children in most age groups. Each kit comes equipped with pH-sensitive paper, a comparison chart, a re-useable precipitation collector, a data record sheet, and an instruction manual. Participating groups also receive

three program newsletters, a communications package, and a set of final maps. The *BARK Program* is offered in both English and French.

Contact:
BARK Headquarters
Public Focus
489 College St., Suite 500
Toronto, Ontario
M6G 1A5
TEL: (416) 967-5211
FAX: (416) 967-4450

Les énigmes du Saint-Laurent

For Sherlock Holmes types from 9 to 12 years of age, a collection of educational kits titled *Les énigmes du Saint-Laurent*, produced by the Société linnéenne du Québec, offers a wonderful exploration of the St. Lawrence river and its resident species. Three separate kits are available: *la Perchaude*, *la Grande Oie des neiges* and *le Béluga*. Each kit examines the many characteristics of the animal and its home, allowing the reader to discover the St. Lawrence step by step. Activities are followed by discussion periods, thereby giving the teacher considerable autonomy.

La Société linnéenne du Québec has been active for 60 years in educational activities related to protection and conservation of nature, research, animals and the environment. It promotes fundamental values of respect for nature and social responsibility.

Contact:
Société linnéenne du Québec inc.
1675 avenue du Parc
Sainte-Foy, Quebec
G1W 4S3
TEL: (418) 683-2432
FAX: (418) 683-2893

Recombinant DNA Biotechnology Computer Program

Biotechnology occupies an increasingly important position within the Canadian economy. But while the development and use of biotechnologies are encouraged at the university and industrial level, awareness on the part of students and the general public remains low. Agrobiotech has taken the theoretical concepts and experimental procedures of biotechnology and some of its applications, and incorpo-

rated them into a graphics computer program on Macintosh. The areas covered include recombinant DNA technology and hybridoma technology. The tutorial software package allows students to advance at their own pace. The program comes in different degrees of complexity to suit students at the elementary, high school and community college levels, as well as teachers and the general public.

Agrobiotech is a Manitoba-based company involved in the application of biotechnology to agricultural problems.

Contact:
Dr. Francisco Madrid
Agrobiotech International Inc.
35 Mount Allison Bay
Winnipeg, Manitoba
R3T 3L4
TEL: (204) 275-7731

Scientists in School

"I think I want to be a scientist when I grow up!" beams a student after a morning of experimenting made possible by the *Scientists in School* program. By bringing scientists into classrooms from grades one to six, this program allows children to do hands-on science with an expert.

Presenters organize units in their field of expertise. Topics include *Light Up Your Life* (physics), *Never Say Ugh To A Bug* (biology), *Colours in Motion* (chemistry), and *Please Take Out the Garbage* (environmental studies). To date, 11 scientists have visited 125 classrooms. Presenters serve as excellent role models for young people. Since many are women, stereotypes about scientists may change too.

The *Scientists in School* project was developed by the Ajax-Pickering Branch of the Canadian Federation of University Women.

Contact:
Ajax-Pickering Branch
Canadian Federation of University Women
110 Lake Driveway West
Ajax, Ontario
L1S 4T5
TEL: (416) 686-2690
FAX: (416) 427-8010

Travelling Discovery Boxes

Open the door to a Discovery Box and watch a child's eyes light up. *Travelling Discovery Boxes* are an innovative way for children to learn about the natural sciences. The program features favourites from the collection found in the Search Gallery at Science World British Columbia. Built for easy travel and set-up, Discovery Boxes provide students throughout the province with access to the exhibits. The collection stimulates children's

curiosity with such units as *Bone-a-Part*, which allows kids to reconstruct an actual turtle skeleton, and *Coat Check*, which contains an assortment of animal pelts for observation and comparison. Each box comes accompanied with resource materials to lead children in their discovery and suggest follow-up classroom activities.

The Travelling Discovery Boxes are available to B.C. schools. They are designed for

children from kindergarten to grade seven. Adult/child pairs can also make use of the collection outside of school hours.

Contact:
Outreach Coordinator
Science World British Columbia
1455 Quebec Street
Vancouver, British Columbia
V6A 3Z7
TEL: (604) 687-8414
FAX: (604) 682-2923

Trousse pédagogique sur l'environnement urbain

Grab your gear. Le Centre de la montagne is taking you on a tour of the city! With its movable parts, murals and discussions, the centre's kit helps make senior elementary students more aware of the urban environment. First, the kit lays out two activities to show how the city is organized: *les secteurs de la ville* and *la ville en mouvement*. Second, it addresses urban challenges such as transportation, water consumption and waste management. The kit encourages youngsters to express their views on solutions to urban problems. The entire package is stored in two practical compact cases.

Founded in 1981, le Centre de la montagne offers educational services related to the environment to the public in order to create a better understanding of environmental issues.

Contact:
Centre de la montagne inc.
P.O. Box 86, Station E
Montreal, Quebec
H2T 3A5
TEL: (514) 844-4928
FAX: (514) 939-3929

Additional Educational Resources

Elementary Science

Curriculum Enhancement

Kits introduce marine animals, their dependency on one another, their similarity to people, and their physical adaptations to suit the marine environment. Topics for kits vary according to grade: *The Seals* for first grade, *Marine Communities* for third grade and *The Sea Fishes* for fifth grade.

Audience: children in grades one, three and five

Language: English

Bishop Feild Home and School
Association
c/o Bishop Feild Elementary
School
44 Bond Street
St. John's, Newfoundland
A1C 1S6
TEL: (709) 722-3103

Project to Stimulate

Development of Science Fairs in the Northwest Territories

Activities include the *Dial-an-Expert Service*, a resource book entitled *Science Alive!*, and a how-to kit entitled *Why do Walrus Turn Pink?* (see page 21).

Audience: elementary and high school students and teachers

Language: English

Science Institute of the
Northwest Territories
P.O. Box 1617
Yellowknife,
Northwest Territories
X1A 2P2
TEL: (403) 873-7592
FAX: (403) 873-0227

Sciencereach

Hands-on science experiments presented to children in classrooms by a scientist, teacher and a broadcaster. Sessions followed by a discussion of the observations and results.

Audience: children in grades four to eight

Language: English

Date: summer 1988 – present

Reach for the Top Inc.
272 Major Street
Toronto, Ontario
M5S 2L6
TEL: (416) 927-7293
FAX: (416) 927-7293

Women in Science at Trent University

A pilot project involving 40-60 minute science demonstrations given to elementary school classes by undergraduate and graduate students.

Audience: children in grades three to eight

Language: English

Trent University
Peterborough, Ontario
K9J 7B8
TEL: (705) 748-1332

3D Simulation

Four 3D simulation modules, including interactive software packages and teacher's guides.

Audience: children in grades three to eight

Language: French

Atsanik
5055 rue Roslyn,
apartment 110
Montreal, Quebec
H3W 2L7
TEL: (514) 733-4959



LECTURES, CONFERENCES AND WORKSHOPS

Beginnings and Living Planet Lecture Series

Science and Technology Careers Workshop for High School Girls

Science and the Media: Towards Improved Public Understanding of Science

Women in Science and Mathematics Workshop

Additional Lectures, Conferences and Workshops

* Colloque de l'association des communicateurs scientifiques du Québec

Congrès de l'association canadienne-française pour l'avancement des sciences

Kinder Kids

Literacy in the Information Age Phase IV

Marine Science Education: New Challenges

National Priorities for Science and Technology: A Canadian Science Writers' Association Public Forum

A New Look at Space

Ocean Awareness Tours

Operation Minerva

Plunge into the Pacific: Student Ambassador Program for the Marine Environment

* Quinzaine des sciences

Science Outreach 1991 Communication Project

Scientifically Yours II

Society, Chemicals and the Environment Project

Sustainable Development Initiatives: Community Plan for Fish Enhancement

Third Atlantic Provinces Council on the Sciences Science Education Conference

* Available only in French.

Beginnings and Living Planet Lecture Series

How was the universe created? Where did the sun and the earth come from? How did life originate? Topics such as these have long held public interest, from the earliest civilizations to modern-day stargazers.

The *Beginnings* lecture series provided audiences with a glimpse of current research in this area. Four world-class scientists were invited to speak on the origin of the universe, the beginning of the solar system, the development of life on earth and the origin of human beings. The series attracted an audience of over 3 000 in 1989, with presentations in Edmonton, Calgary and Vancouver. An estimated

1 000 000 more were reached through media coverage.

The *Living Planet* lecture series focused on the role of science and technology in creating, predicting and dealing with global changes to the environment. Lectures provided insight into ongoing research, the effects of human activity on our planet, and the social and political implications of global change. Speakers included Alan Morgan, leader of the global change group for the Geological Survey of Canada, and Stephen Lewis, special representative for UNICEF and former Canadian Ambassador to the United Nations. Lectures were held in Edmonton, Calgary and Vancouver in 1990, and drew

over 3 000 people. Extensive media coverage reached an additional 100 000.

The *Beginnings* and *Living Planet* lecture series were presented by the Alberta Science Centre in cooperation with the Edmonton Space Sciences Centre and the H.R. MacMillan Planetarium in Vancouver. Both series were considered highly successful.

Contact:
Alberta Science Centre Society
Box 2100, Station M
Calgary, Alberta
T2P 2M5
TEL: (403) 221-3705
FAX: (403) 237-0186

Science and Technology Careers Workshop For High School Girls

Trent University has developed a workshop organizers hope will encourage girls to pursue higher education in the sciences. *The Science and Technology Careers Workshop* is a four-day event that features seminars on science careers and gender stereotyping, and exposes participants to successful female role models.

The program allows students to learn about science in a university setting. Lab and field projects are organized with groups of eight participants led by an undergraduate advisor and a faculty member. The departments involved include anthropology, biology, chemistry, computer studies, environmental and resource studies, geography, mathematics, physics and psychology. An eight-minute video highlighting the workshop was also produced for presentation in participating high schools.

The *Science and Technology Careers Workshop* is offered to girls in grades 9-11. Response was overwhelming, with the university receiving more than 300 applications for 20 available places in 1989. In 1990, 40 students from across Ontario participated. In 1992, the workshop will be held from May 3-7.

Contact:
Schools Liaison
Office of the Registrar
Trent University
Peterborough, Ontario
K9J 7B8
TEL: (705) 748-1215
FAX: (705) 748-1629

Science and the Media: Towards Improved Public Understanding of Science

The *Science and the Media* conference was held on September 22-23, 1988. This two-day event brought together scientists and journalists to discuss the low level of science literacy in Canada, and ways to improve the situation. It included speakers from all over North America who are recognized experts in science communications. The speaker's panel included representatives of *Scientific American*, *The Globe and Mail*, and CBC Radio's *Quirks and Quarks*.

Conference workshops focused on more effective means of delivering scientific information to the public. Journalists

attended workshops on the environment, medicine and health, agriculture, technology and telecommunications. Background sessions on recent advances in selected areas (such as molecular biology, astrophysics, immunology, and computer sciences) and their implications were also provided. Scientists participated in workshops on doing more effective interviews for the broadcast media, as well as writing for non-scientific audiences.

The conference was jointly sponsored by the Social Sciences and Humanities Research Council, and Industry, Science and Technology Canada. It was

organized by Edna F. Einsiedel, from the University of Calgary, who is responsible for a major study of science literacy among adult Canadians undertaken in 1990. The results of her research are available in a comprehensive report titled *Scientific Literacy: A Survey of Adult Canadians*.

Contact:
Edna F. Einsiedel
2500 University Drive
Calgary, Alberta
T2N 1N4
TEL: (403) 220-3924
FAX: (403) 282-6716

Women in Science and Mathematics Workshop

The *Women in Science and Mathematics Workshop* promotes the importance of science and mathematics to keeping career options open. The workshop is directed at girls from grades three to six and those who most influence their career paths, their parents. It consists of three components. For two of the three sessions, parents attend seminars dealing with how girls and boys are treated differently in terms of their socialization and education and the implications of those differences. At the same time, the girls take part in math, science and technology workshops. The two groups unite to listen to women speak about their careers in non-traditional science and technology areas. These speakers not only provide useful career information, but also serve as excellent role models for the girls.

Developed at Bird's Hill School in Winnipeg, the workshop won a Hilroy Foundation Award for innovation in education. Due to the project's success, organizers have produced a booklet to tell educators how to plan similar workshops. Over 500 booklets have been distributed throughout Canada to schools, universities and ministries of education. Requests for booklets have come from all over Canada and the United States. Over 1 000 teachers have been instructed on presenting this program.

Contact:
Bird's Hill School
3950 Raleigh Street
Winnipeg, Manitoba
R2E 0G9
TEL: (204) 663-7669

Additional Lectures, Conferences and Workshops

Colloque de l'association des communicateurs scientifique du Québec

Annual meeting to provide information on the importance of scientific development in Canada.

Audience: general public
Language: French

ACQS
3575 boulevard Saint-Laurent,
suite 705
Montreal, Quebec
H2X 2T7
TEL: (514) 845-3636
FAX: (514) 845-3041

Congrès de l'association canadienne-française pour l'avancement des sciences

Annual French-language scientific meeting presenting recent scientific developments in universities and research centres.

Audience: researchers and scientists
Language: French

ACFAS
2730 chemin de la Côte-Sainte-Catherine
Montreal, Quebec
H3T 1B7
TEL: (514) 342-1411
FAX: (514) 342-9552

Kinder Kids

A one-week program that introduces children to science in a positive and comfortable manner through a variety of hands-on activities. Sessions are held daily for 1.5 hours.

Audience: children ages 4-7 in the Northern Ontario communities of Timmins, North Bay, Sault Ste. Marie and Thunder Bay

Languages: English and French
Dates: March-November, 1991

Science North
100 Ramsey Lake Road
Sudbury, Ontario
P3E 5S9
TEL: (705) 522-3701
FAX: (705) 522-4954

Literacy in the Information Age Phase IV

Workshops to train community leaders to establish literacy exchange networks. The National Literacy project aims to inform the community on the impact of new technologies on children and youth and to promote the skills essential to literacy through activities at home and in the community.

Audience: parents, educators and youth group leaders
Language: English
Date: October 1990

Canadian Home and School and Parent-Teacher Federation
323 Chapel Street
Ottawa, Ontario
K1N 7Z2
TEL: (613) 234-7292

Marine Science Education: New Challenges

A three-year project providing marine science programs in Quebec. Includes outreach and in-class presentations, teacher professional development, and information and materials made available through the Marine Sciences Ideas Centre.

Audience: students in K-11 and their teachers
Languages: English and French
Dates: October 1989 – October 1992

Huntsman Marine Science Centre
Brandy Cove Road
St. Andrews, New Brunswick
B0G 2X0
TEL: (506) 529-8895
FAX: (506) 529-4337

**National Priorities for Science
and Technology: A CSWA
Public Forum**

Audience: journalists, editors and
the general public
Language: English
Dates: May 18-20, 1989

Canadian Science Writers'
Association (CSWA)
24 Ryerson Avenue
Suite 209
Toronto, Ontario
M5T 2P3
TEL: (416) 361-1427
FAX: (416) 860-0826

A New Look at Space

A three-part lecture series informing Canadians on space exploration. Topics covered include Canada's role in the United States' *Freedom* space station, remote sensing, future flights to Mars and the moon, and new generation earth-to orbit launchers. Each lecture will be presented in Edmonton, Vancouver and Calgary. The series also includes a planetarium presentation called *Stepping Stones*.

Audience: junior high and high school students, the general public
Language: English
Dates: September 16 – October 3, 1991

Alberta Science Centre Society
P.O. Box 2100, Postal Station M
7th Avenue at 11th Street
Calgary, Alberta
T2P 2M5
TEL: (403) 221-3705
FAX: (403) 237-0186

Ocean Awareness Tours

A program on ocean sciences with project activities directed to specific target audiences. Program features public and school tours, the *Big World/Little World Exhibit*, teachers' courses and in-servicing, and public lectures and seminars.

Audience: pre-school children, K-12 students, teachers and the general public
Language: English
Dates: Summer hours: July – September, 10:00 – 6:00
Winter hours: September – June, 9:00 – 5:00

Ocean Sciences Centre
Memorial University of
Newfoundland
St. John's, Newfoundland
A1C 5S7
TEL: (709) 737-3709,
737-3606
FAX: (709) 737-3220

Operation Minerva

A program to promote education for women in science. Includes annual conferences and summer camps for girls in grade 8, presentations to adult groups and distribution of biographies of successful women in science and technology to schools and conference participants. Conference handbooks are also available for those interested.

Audience: girls aged 13-14
Language: English
Dates: Conferences held in May, summer camps held in July

Operation Minerva
2728 Crawford Road N.W.
Calgary, Alberta
T2L 1E1
TEL: (403) 282-6431

**Plunge into the Pacific:
Student Ambassador Program
for the Marine Environment**

Students participate in a one-week training program on marine science and the marine environment before presenting what they've learned to schools and their home communities.

Audience: British Columbia students in grades 10-12

Language: English

Dates: April 19-25, 1991; September 21-27, 1991; October 5-11, 1991; and November 2-8, 1991

Bamfield Marine Station
Bamfield, British Columbia
V0R 1B0

TEL: (604) 728-3301

FAX: (604) 728-3452

Quinzaine des sciences

A wide range of popular science events held annually across Quebec to promote the province's scientific achievements.

Audience: general public

Language: French

Société pour la promotion de la science et de la technologie
84 rue Notre-Dame, suite 800
Montreal, Quebec
H2Y 1S6

TEL: (514) 873-1544

FAX: (514) 873-7402

**Science Outreach 1991
Communication Project**

Half-day workshops and summer science enrichment sessions.

Sessions include interactive demonstrations, design competitions, experiments, hands-on tours of research laboratories and science-related videos. An engineering career "shadow" program, where students accompany a professional for half a day, is also being planned.

Audience: students in grades 5-8

Language: English, with workshops conducted in French at French schools

Dates: May – August, 1991

University of Toronto
B 670, Sandford Fleming
10 King's College Road
Toronto, Ontario
M5S 1A1

TEL: (416) 978-2917

FAX: (416) 978-4859

Scientifically Yours II

A three-day workshop to encourage careers in science for young women. Program includes: a workshop on gender stereotyping, 12 separate hands-on laboratory demonstrations, a social information session with a number of distinguished women from science and industry, a field trip, and a tour of the science facilities at Brock University.

Audience: girls in grades 10, 11 and 12 from school boards throughout the Niagara Peninsula

Language: English

Dates: May 2-4, 1991

Brock University Status of
Women in Science Committee
Dean of the Division of
Mathematics and Science
Glenridge Avenue
St. Catharines, Ontario
L2S 3A1

TEL: (416) 688-5550

FAX: (416) 682-9020

Society, Chemicals and the Environment Project

Provides information on chemical science and technology, and their role and impact on the environment, through workshops, summer conferences, newsletters and classroom resource materials.

Audience: students and teachers at the elementary and high school level

Languages: English, with French material available by the end of 1992

KEY FOUNDATION
50 Belmont Crescent
Midhurst, Ontario
L0L 1X0
TEL: (705) 726-2276
FAX: (705) 722-4803

Sustainable Development

Initiatives: Development of a Community Plan For Increasing Commerce, Sport, Domestic or Subsistence Fisheries Near Clyde River, Northwest Territories

Explains the role of science and technology in fish enhancement through seminars, one-on-one semi-formal interviews and day-to-day contact with the participants.

Audience: the people of Clyde River (an isolated Inuit community on the eastern coast of Baffin Island)

Languages: English and Inuktitut

Dates: February 12 – March 26, 1991

Applied Environmental Services
P.O. Box 1148
Yellowknife,
Northwest Territories
X1A 2N8
TEL: (403) 873-2090
FAX: (403) 873-8377

Third APICS Science Education Conference

Focusing on the theme Science Education for the Twenty-First Century. Conference provided a stimulating forum for teachers to help them raise the profile of science and technology among Canada's young people.

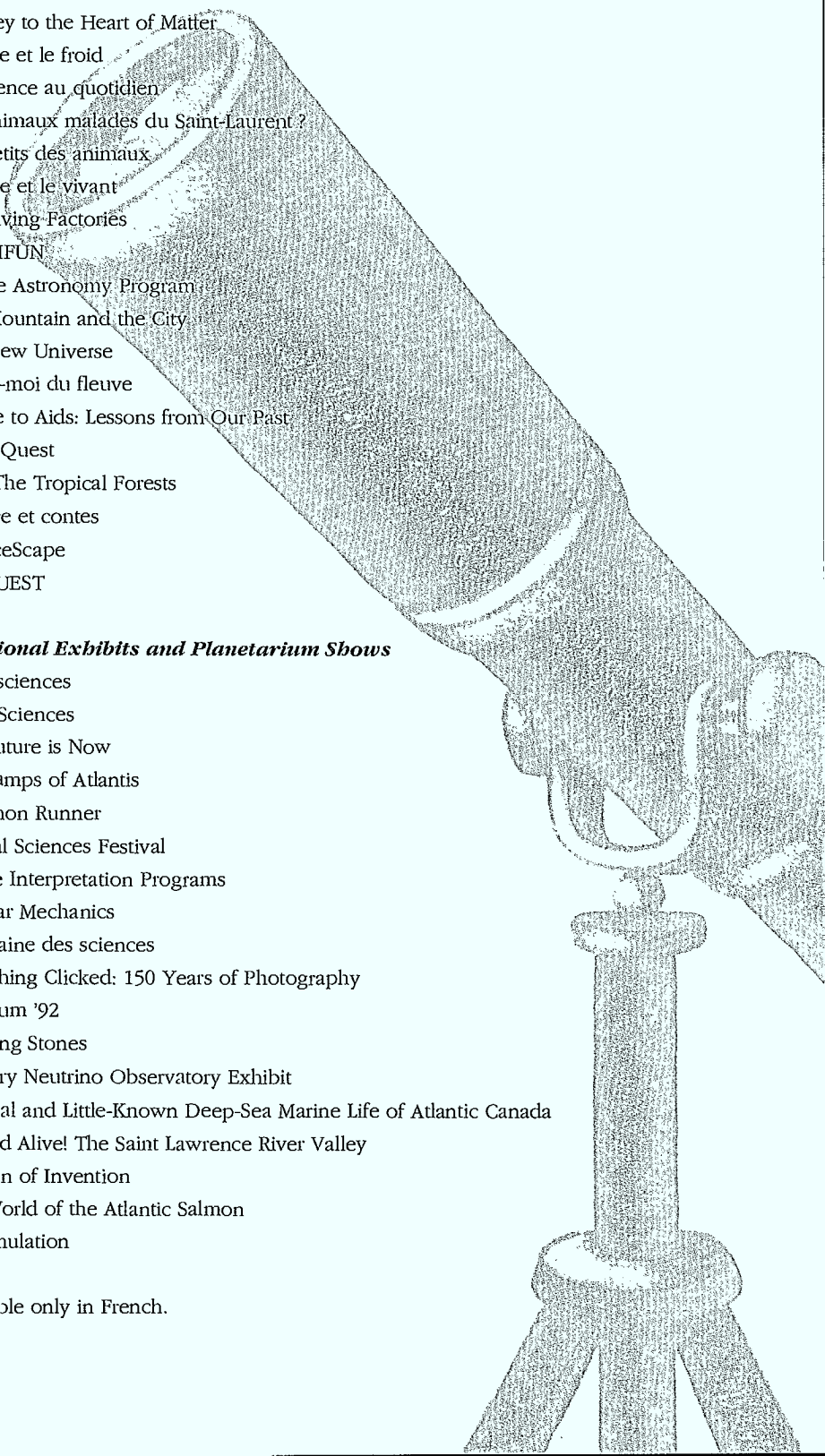
Audience: secondary and post-secondary science teachers in the Atlantic provinces

Language: English

Dates: August 22-25, 1989

Atlantic Provinces Council on the Sciences (APICS)
Memorial University of
Newfoundland
P.O. Box 4200
St. John's, Newfoundland
A1C 5S7
TEL: (709) 737-8918
FAX: (709) 737-4095

EXHIBITS AND PLANETARIUM SHOWS



Astro Mobile in Action
* À travers les branches
Charlie Farquharson's Universe
The Goldilocks Dilemma
History of Northern Aviation
How Does Your Garden Grow?
Journey to the Heart of Matter
* La bête et le froid
* La science au quotidien
* Les animaux malades du Saint-Laurent ?
* Les petits des animaux
* L'inerte et le vivant
The Living Factories
MATHFUN
Mobile Astronomy Program
The Mountain and the City
The New Universe
* Parlez-moi du fleuve
Plague to Aids: Lessons from Our Past
PlanetQuest
Save The Tropical Forests
* Science et contes
ScienceScape
SunQUEST

Additional Exhibits and Planetarium Shows

* Ebullisciences
* Expo-Sciences
The Future is Now
The Lamps of Atlantis
Marathon Runner
Natural Sciences Festival
Nature Interpretation Programs
Popular Mechanics
* Quinzaine des sciences
Something Clicked: 150 Years of Photography
Spectrum '92
Stepping Stones
Sudbury Neutrino Observatory Exhibit
Unusual and Little-Known Deep-Sea Marine Life of Atlantic Canada
Wanted Alive! The Saint Lawrence River Valley
Women of Invention
The World of the Atlantic Salmon
* 3D Simulation

* Available only in French.

Astro Mobile in Action

The *Astro Mobile in Action* (AMIA) travels throughout Quebec presenting workshop-shows and expanding the celestial horizons of audiences. Founded in 1982 by two young enthusiasts, the AMIA entertains as well as teaches, answering a multitude of questions on astronomy and aerospace.

AMIA offers a choice of five one-hour workshops, prepared over two years, in the most stellar of settings. Three are intended for the primary level: the *Earth*,

Moon and Sun Trio, *Space Flights*, and *The Light*. *The Universe* and *Celestial Phenomena* are designed for a teenage audience. *Canada in Space* deals with Canada's major achievements in astronomy and aerospace. Using computer multi-vision, an original sound track, lighting and special effects, it educates as it entertains. After its summer shows, AMIA presents *La veillée aux étoiles*, an open-air observation of the heavens.

In addition to disseminating technological information, AMIA promotes a spectacular scientific hobby: astronomy.

Contact:
AMIA Inc.
P.O. Box 863
Brownsburg, Quebec
J0V 1A0
TEL: (514) 562-7437

À travers les branches

The forest is a complex living environment. The mobile exhibition *À travers les branches*, presented by the Musée du Séminaire de Sherbrooke, informs the public about the condition of and problems facing Quebec forests. For one hour, lighting, three-dimensional images and sound effects allow the audience to experience the sights, sounds and smells of the forest. The audience "flies" over numerous forests at low-altitude and makes several landings where it studies life in the forest, exploitation by industry, problems and possible solutions. *À travers les branches* will travel through Quebec and Ontario from June 1991 to December 1994.

This show is the ninth one presented by the Musée du Séminaire de Sherbrooke.

Contact:
Musée du Séminaire de Sherbrooke
222 rue Frontenac
Sherbrooke, Quebec
J1H 1J9
TEL: (819) 564-3200
FAX: (819) 562-8261

Charlie Farquharson's Universe

According to Charlie Farquharson, Canada's favourite rural philosopher, the Milky Way was named after a chocolate bar. Fortunately, astronomer Bob comes to the rescue and helps him clear his misconceptions. Together they embark on a magical voyage of astronomical discovery. They visit observatories in Canada, Chile and Hawaii, before plunging into space for a closer look at our solar system.

The adventure ends with Charlie riding a comet "bareback" for the return trip home.

As a public program department in the Royal Ontario Museum, the McLaughlin Planetarium aims to explain astronomy to the public. *Charlie Farquharson's Universe* ran its course from May 11, 1990, to December 2, 1990. This 40-minute multi-media show informed and entertained visitors

ages four and up. From its astronomical gallery to impressive laser shows, the McLaughlin Planetarium always has something exciting to offer.

Contact:
McLaughlin Planetarium
100 Queen's Park
Toronto, Ontario
M5S 2C6
TEL: (416) 586-5736
FAX: (416) 586-5887

The Goldilocks Dilemma

This planetarium show explored the relative climates and atmospheric differences of Mars, Venus and Earth in the context of a famous children's story. *The Goldilocks Dilemma* used science to explain why Mars is much too cold, Venus is much too hot and Earth, in the middle, is just right.

Space science provides the technology to monitor the Earth's condition and determine what might occur if corrective measures are not taken. *The Goldilocks Dilemma* presented the options, information and reasoning behind our current understanding of conditions on the various planets. By comparing the Earth with its nearest planetary neighbours, this show demonstrated how astronomical research and global monitoring can help us better manage the Earth and its ecosystems.

The planetarium show and exhibit was presented in late 1990, by the H.R. MacMillan Planetarium and Gordon Southam Observatory, which is operated by the British Columbia Space Sciences Society. It reached an estimated 30 000 people. Assistance in the production of *The Goldilocks Dilemma* was also provided by the Smithsonian Institute, Johns Hopkins University, Canadian Airlines International, the World Wildlife Fund and the Manaus Reserve (Brazil).

Contact:
H.R. MacMillan Planetarium and Gordon Southam Observatory
1100 Chestnut Street
Vancouver, British Columbia
V6J 3J9
TEL: planetarium (604) 736-4431,
observatory (604) 738-2855
FAX: (604) 736-5665

History of Northern Aviation

From health care to mining development and mail delivery, the airplane has helped shape northern communities. An exhibit by the Operation Fox Moth Society demonstrates the dramatic impact aviation has had on northern lifestyles. The exhibit traces the history of aviation in the North and features a fully restored Fox Moth airplane. Built for bush pilots, this historical aircraft was modelled after the Moth, the first small plane to be used in mineral exploration in western and northern Canada. Other planes and

their technological improvements are also presented. Another section of the exhibit profiles pilots and engineers, and describes how aviation careers have become more complex with increasingly specialized aircraft.

The northern aviation exhibit rests in the Fox Moth Gallery at the Prince of Wales Northern Heritage Centre in Yellowknife. The centre is the first public heritage facility in the Northwest Territories, and draws crowds of up to 30 000 annually. In order to reach out to school

children, a travelling exhibit for the rest of the territories and southern Canada is being planned.

Contact:
Operation Fox Moth Society
c/o Hinchey, Wowk, Williams,
Avery & Co.
4817-49 Street, P.O. Box 1620
Yellowknife,
Northwest Territories
X1A 2P2

How Does Your Garden Grow?

The relationship between a plant's developmental processes and its overall form has always attracted biologists and those interested in the study of nature. Now this relationship can be explained using state-of-the-art computer graphics to model plant growth. *How Does Your Garden Grow?* is an interactive exhibit that graphically illustrates the effects morphological changes have on plant life, while demonstrating the power and beauty of computer simulation. It is based on research conducted by Dr. P. Prusinkiewicz and a team of graduate students from the University of Regina's Computer Science Department.

How Does Your Garden Grow? provides an exciting opportunity for people to study and manipulate the variables governing plant development. For example, visitors can experiment with the angles between branches, growth rates or the shape of flowers and leaves, and immediately have the computer redraw the plant to see how its form has been affected.

Now a permanent exhibit of the Saskatchewan Science Centre, *How Does Your Garden Grow?* will be seen by an estimated 195 000 people yearly.

Contact:
Saskatchewan Science Centre
Wascana Drive & Winnipeg Street
Box 5071
Regina, Saskatchewan
S4P 3M3
TEL: (306) 791-7900
FAX: (306) 525-0194

Journey to the Heart of Matter

Journey to the Heart of Matter reveals the wonder and excitement of atomic physics. This 550 m² exhibition explains the complex processes used to detect, control and understand the smallest particles of matter. It allows visitors to discover the sub-atomic world through interactive videos and hands-on activities. The exhibit also describes the practical applications of

particle physics research such as radiation therapy and PET (positron emission tomograph) scanning.

Journey to the Heart of Matter makes the complex world of particle physics understandable to people of all ages. During its inaugural six-month presentation at Science World British Columbia in Vancouver, the exhibition was seen by over

200 000 visitors and was awarded the prestigious Print Casebook Award for Exhibit Design.

Contact:

Director of Design and Exhibits
Science World British Columbia
1455 Quebec Street
Vancouver, British Columbia
V6A 3Z7
TEL: (604) 687-8414
FAX: (604) 682-2923

La bête et le froid

Would you sleep outside in winter? Many animals do. To help us learn more about them, the Musée Georges Préfontaine's exhibition *La bête et le froid*, which ran from September to June 1990, presented several examples of animals' adaptation to Quebec's winter climate. The exhibition addressed topics such as hibernation, heat insulation and camouflage, allowing the public to study several types of animals from different environments. *La bête et le froid* also presented special activities for school groups from Montreal and surrounding areas. The exhibition went on tour in May 1991. In the summer of 1991, it was featured at the Centre d'interprétation de la nature in Boisbriand and, in October 1991, at the Saint-Eustache library.

Since 1922, the Société de biologie de Montréal has promoted and popularized the natural sciences through presentations, field trips and exhibitions.

Contact:

Société de biologie de Montréal inc.
c/o Musée Georges-Préfontaine
P.O. Box 39, Outremont Station
Outremont, Quebec
H2V 4M6
TEL: (514) 277-9864
FAX: (514) 343-2293

La science au quotidien

The muséobus is a truly mobile exhibition. In 1985, the first muséobus, organized by Radis inc., provided the public with information about Canadian history. From 1989 to 1991, it adopted a scientific direction and presented the travelling exhibition *La science au quotidien*. Using experiments, hands-on activities and visual images, presenters explain the importance of technology in everyday life. Youngsters from 6 to 14 years of

age study two topics: electricity and simple machines, and pollution and meteorology. An accompanying educational kit and a booklet containing games are available for teachers. *La science au quotidien* is an ideal teaching aid for a lively introduction to the natural sciences. From 1991-93, the muséobus will focus on communications.

Through its original projects, the Regroupement pour l'animation et la diffusion d'initia-

tives socioculturelles (Radis) makes young people aware of the presence of science in the world around them.

Contact:
Radis inc.
333 De Rouville
Beloeil, Quebec
J3G 1X1
TEL: (514) 464-0201
FAX: (514) 464-0201

Les animaux malades du Saint-Laurent ?

What exactly do we know about pollution in the St. Lawrence River? What are its effects on animals? These are but two of the many questions that the educational exhibition *Les animaux malades du Saint-Laurent ?* attempted to answer. The exhibition, which ran from August 1990 to August 1991, used simple language to describe four animal species suffering from pollution. Naturalists answered questions and got people thinking about a very current issue: the environment. The exhibition was created for people of all ages but was particularly appreciated by school groups, which participated in special activities.

The Société de biologie de Montréal distributes information on animals, the natural sciences and the environment, and promotes these topics in simple language.

Contact:
Société de biologie de Montréal
c/o Musée Georges-Préfontaine
P.O. Box 39, Outremont Station
Outremont, Quebec
H2V 4M6
TEL: (514) 277-9864
FAX: (514) 343-2293

Les petits des animaux

What do the kangaroo and the hippopotamus have in common? The answer to this question, and many others, is found in *Les petits des animaux*, an educational exhibition focusing on the survival instincts of young animals. During the 1988-89 school year, a dozen or so displays on topics such as nutrition, habitat and parental protection enabled young and old alike to learn about many aspects of animal

behaviour. This natural science observation and interpretation exhibition was also designed for schools. Its special activities piqued the curiosity and interest of children.

The Société de biologie du Québec has many objectives, one of which is to increase knowledge about fauna through direct contact between scientists and the general public.

Contact:
Société de biologie de
Montréal inc.
c/o Musée Georges-Préfontaine
P.O. Box 39, Outremont Station
Outremont, Quebec
H2V 4M6
TEL: (514) 277-9864
FAX: (514) 343-2293

L'inerte et le vivant

The "hyper-media" approach of this interactive computerized exhibit will take you through a maze of scientific fields — biology, physics, chemistry and astronomy. Based on the theme of the organization of matter, *L'inerte et le vivant* develops a non-linear information concept that combines audio-visual material with informatics. Like a computer, this approach enables users to select their own information package and to explore it in depth. Users can explore four major banks: the cell, rocks and minerals, particles, and chaos. Sound, texts and images join forces in a multi-dimensional experience that creates a very dynamic learning environment geared to the individual. *L'inerte et le vivant* is available to museums, secondary schools and colleges.

Groupe Nexus, the creator of this informatics concept, is stretching the limits of linear teaching through its use of fascinating and revolutionary means of communication.

Contact:
Groupe Nexus inc.
4030 rue Saint-Ambroise, suite 400
Montreal, Quebec
H4C 2C7
TEL: (514) 933-9951
FAX: (514) 931-0415

The Living Factories

What is biotechnology? The travelling exhibition *The Living Factories* criss-crossed Quebec in 1989 to tell people about this science. Through a network of museums and cultural institutions, some 60 000 visitors now know the significance of biotechnology in their everyday life. The exhibition seeks, for instance, to stimulate thinking about the social and economic impact of biotechnology. Cells, bacteria,

enzymes, the world of the smallest organisms — all these are now accessible because of biotechnology research. Through this exhibition, the Société pour la promotion de la science et de la technologie seeks to raise public awareness of the importance of scientific development to Canada's regions. *The Living Factories* has been travelling through other Canadian provinces since 1990 under the

auspices of the National Museum of Science and Technology.

Contact:
National Museum of Science and Technology
1867 Saint-Laurent Boulevard
P.O. Box 9724, Ottawa Terminal
Ottawa, Ontario
K1G 5A3
TEL: (613) 991-3045
FAX: (613) 990-3654

MATHFUN

Science can be found all around us, even in a shopping mall. Located on the second level of Scotia Square in Halifax, the Discovery Centre is Atlantic Canada's first hands-on science and technology facility. The centre allows visitors to discover the excitement of science through colourful and interactive displays.

The Discovery Centre opened its doors on October 12, 1990, with the unveiling of *MATHFUN*, its introductory exhibit. The exhibit features 15 displays that challenge visitors to improve their problem-solving skills. The displays focus on mathematical concepts encountered in daily life and cover such topics as algebra, geometry in two and three dimensions, logic, measurement and probability. The exhibits will travel to schools, local museums and community centres and return to a permanent display area at the Discovery Centre.

MATHFUN is aimed at children in grades 4 to 12, but the exhibit has appeal for all ages. To date, 16 494 people have taken the *MATHFUN* challenge.

Contact:
Discovery Centre
Upper Mall
Scotia Square
5201 Duke Street
Halifax, Nova Scotia
B3J 1N9
TEL: (902) 492-4422
FAX: (902) 492-3170

Mobile Astronomy Program

With the help of the *Mobile Astronomy Program (MAP)*, people throughout rural Alberta and the neighbouring provinces learned about astronomy without leaving their communities. *MAP* is a travelling planetarium show that visits schools, libraries and community centres.

The planetarium rests inside a spherical, balloon-like domed tent that reaches five metres high and accommodates 25 people. A Spitz star projector recreates the night sky with images of up to 1 000 stars. House lights, slide and special effects projectors, and music

make this a dynamic show.

Afterwards, visitors can view objects in the real night sky using the programs's 20-cm Celestron telescope.

MAP also rents out smaller inflatable planetariums to schools across the province. These units are easy to operate and come fully equipped with a user's kit. The kit contains set-up information, suggested planetarium activities and taped descriptions of the seasonal constellations to help educators present the material.

MAP is administered by the Edmonton Space Sciences Foundation. Over the past three

years, the program has reached over 77 000 people in rural communities in Alberta, Saskatchewan, the Northwest Territories and British Columbia. Shows are popular with students from kindergarten to grade 12, as well as the general public.

Contact:

Mobile Astronomy Program
Edmonton Space & Science
Centre
11211-142 Street
Edmonton, Alberta
T5M 4A1
TEL: (403) 452-9100
FAX: (403) 455-5882

The Mountain and the City

Nature in the city. In the summer and fall of 1989, the Centre de la montagne presented the exhibition *The Mountain and the City* at Mount Royal Park. Its hands-on approach and accompanying commentaries enabled some 80 000 people to understand the importance of Mount Royal in their everyday life and become conscious of associated technological issues. The exhibition addressed such key topics as the water purification plant and the radio and television transmission tower.

The Centre de la montagne encourages people to take concrete action to establish a better balance between city life and the environment. It also develops many educational activities for schools, environmental activists and the general public.

Contact:

Centre de la montagne
P.O. Box 86, Station E
Montreal, Quebec
H2T 3A5
TEL: (514) 844-4928
FAX: (514) 939-3929

The New Universe

The mathematical abstractions used by scientists to explore the universe have long seemed as remote as the universe itself. Computers can now generate visual images of these abstractions, making them accessible to the general public. The contrast between what our eyes can see and what modern science now allows us to see is incredible. It's a new universe!

Developed at the University of British Columbia (UBC), *The New Universe* is a state-of-the-art visual experience that demonstrates the amazing changes science and computers have made in our understanding of the universe. This project features video presentations, interactive workstation sessions, live remote sensing demonstrations and broadcasts.

The New Universe was presented during the university's

75th Anniversary Open House in March 1990. This event attracted over 250 000 visitors to the campus. Performances dazzled standing-room-only audiences for three days. Displays included an animated rotating Earth (rendered from precise satellite three-D surface relief data), live interactive exploration of *Voyager* planetary imaging, live and recorded displays of imaging through the telescopes of the university observatory, and full-colour laser printing of the best imaging for distribution to the public.

The New Universe originated from the university's Geophysics and Astronomy Department, which has an international reputation for scientific imaging. This project, begun with Science Culture Canada support, launched a continuing program on science communications.

A joint advanced media facility is now under way at UBC to illustrate the earth, ocean and astronomical sciences. The facility will be dedicated to excellence and innovation in undergraduate teaching, and cooperative school and public programs with Vancouver's public science facilities.

Contact:
Dr. David Vogt
Geophysics and Astronomy
Department
University of British Columbia
2219 Main Mall
Vancouver, British Columbia
V6T 1Z4
TEL: (604) 822-2802
FAX: (604) 822-6047

Parlez-moi du fleuve

Parlez-moi du fleuve is an exhibition that makes people reflect upon our fragile ecosystem. From June 1989 to May 1991, this travelling exhibition presented by the Société Duvetnor explained the methods and innovations of oceanographic research on the St. Lawrence estuary to the general public. The exhibition is divided into three distinct sections: the physical environment, living organisms and man's use of the river. Through a model, illustrations, texts and animation, the exhibition raised public awareness, especially for school groups, of the biological richness of the estuary.

Since 1979 the Société Duvetnor has devoted itself to conservation of the river and its islands by making members of the public more conscious of their natural heritage.

Contact:
Société Duvetnor ltée
P.O. Box 305
200 rue Hayward
Rivière-du-Loup, Quebec
G5R 3Y9
TEL: (418) 867-1660

Plague to Aids: Lessons from Our Past

On May 8, 1980, the World Health Assembly declared that smallpox, one of the oldest infectious diseases, was officially eradicated. One year later, the medical profession announced the arrival of a new and life-threatening disease: AIDS (acquired immune deficiency syndrome).

Epidemic diseases and the stigma attached to them have existed throughout history. The Academy of Medicine in Toronto has produced a museum exhibit that examines people's responses to infectious diseases from the

plague to AIDS. Using a combination of photographs, artifacts, quotations and statistics, the exhibit traces the history of epidemic diseases and the impact they have had on society. The exhibit also explains the nature, causes and treatment of epidemics. In addition, a catalogue, poster and education kit for teachers were produced.

Plague to Aids: Lessons from Our Past was on display in Toronto from May 9th – November 30th, 1990, where it was viewed by over 3 000 people. It then began

a two-year Canadian tour. The exhibition is reaching a potential audience of 60 000 Canadians through visits to exhibition centres, libraries, schools, hospitals, and public health centres.

Contact:
Museum of the History of
Medicine
Academy of Medicine
288 Bloor Street West
Toronto, Ontario
M5S 1V8
TEL: (416) 922-0564
FAX: (416) 964-9668

PlanetQuest

Are we alone in the universe? Astronomers continue looking for evidence from their earthbound observatories. *PlanetQuest* takes audiences to the forefront of scientific investigation, on a hunt for extra-solar planets.

This mystery planetarium show and exhibition provides an overview of our own family of planets, focusing on the recent fly-by of Neptune by *Voyager II*. It also outlines the unique planet-searching process developed by Canadian astronomer Dr. Bruce Campbell. His research team used advanced methods of spectroscopy to detect infinitesimal changes in the wavelengths of light coming from nearby stars — theoretically, a sign of orbiting planets. Using the facilities of the Canada-France-Hawaii telescope, the team found evidence of companion bodies (exceeding the size of Jupiter) in orbit around nine nearby stars. This discovery represents a major step in our understanding of the formation and evolution of our solar system, and opens up the exciting prospect of life existing in unknown worlds.

PlanetQuest was presented by the H.R. MacMillan Planetarium and Gordon Southam Observatory during October, November and December of 1989. The planetarium show reached an estimated 40 000 people, with an additional 20 000 visiting the gallery display.

Contact:
H.R. MacMillan Planetarium and Gordon Southam Observatory
1100 Chestnut Street
Vancouver, British Columbia
V6J 3J9
TEL: planetarium (604) 736-4431,
observatory (604) 738-2855
FAX: (604) 736-5665

Save The Tropical Forests

Tropical rainforests, containing almost one half of the world's species, are being lost at unprecedented rates. Already, after a century of human exploitation, the world has lost one third of the original tropical rainforests. Scientists are increasingly concerned about the impact of deforestation on our global environment. The World Wildlife Fund of Canada and Urban Naturalists (Ottawa) have developed a dynamic, interactive display that conveys the urgency of rainforest conservation.

This travelling exhibit allows people of all ages to experience the sights and sounds of a tropical rainforest. Visitors can hear rain falling on the foliage, admire life-size animal sculptures and examine rainforest products from everyday bananas to the uncommon, cancer-fighting drugs of the rosy periwinkle plant. There is an interactive rainforest game and information to take away to learn more about this remarkable habitat and resource.

The World Wildlife Fund has been working for the conser-

vation of the natural world since 1961. The tropical rainforests display toured shopping malls and museums throughout Ontario during 1989-90. Further touring is planned through 1990-91.

Contact:
World Wildlife Fund
90 Eglinton Avenue East
Suite 504
Toronto, Ontario
M4P 2Z7
TEL: (416) 489-8800
FAX: (416) 489-3611

Science et contes

Since 1988, *Science et contes* has been taking visitors on a scientific safari, presenting fascinating research on bacteria, plastics, and much more. This travelling exhibition is on a marathon series of visits to Quebec shopping centres. A team of seven students staffs 14 booths that deal with an interesting variety of topics including women in science. *Science et contes* is also developing entertaining shows on physics, biology and mathematics.

Laval University's science and engineering faculties created this project. It brings the public face to face with today's major technological questions and analyzes their impact.

Contact:
Université Laval
Faculté des sciences et de génie
Pavillon Alexandre-Vachon, suite 1042A
Sainte-Foy, Quebec
G1K 7P4
TEL: (418) 656-2788
FAX: (418) 656-5902

ScienceScape

New Brunswick is proud of the latest addition to its Aitken Bicentennial Exhibition Centre. *ScienceScape*, the Northern Telecom Children's Science Gallery, features 25 hands-on exhibits and is the first of its kind for the province. Exhibits are based on light, sound, electricity and magnetism, body science machines, and computers, to name a few subjects. This

discovery gallery will delight children ages 4-13, and admission is free.

The exhibition centre opened its doors in May 1985 offering five galleries that feature ever-changing art and science displays. Future plans for *ScienceScape* include magic shows by Dr. G. Whiz and assistants, science olympics events, and hands-on workshops.

Contact:
Aitken Bicentennial Exhibition
Centre
20 Hazen Avenue
Saint John, New Brunswick
E2L 3G8
TEL: (506) 633-4870
FAX: (506) 658-2879

SunQUEST

As the world's supply of non-renewable resources dwindles, people are looking to the sun for a lasting and environmentally friendly energy source. Tapped into this virtually limitless supply, solar-powered vehicles offer a cleaner and brighter alternative.

Leading technology has enabled the Queen's University engineering solar team to design and build *SunQUEST*, a vehicle powered by sunlight alone. *SunQUEST* is aerodynamically shaped and capable of reaching a top speed of 100 km/h. The *SunQUEST* team demonstrated the vehicle at elementary and secondary schools during its Canadian Promotional Tour in 1990. They gave presentations that explained the technology of solar panels, the need for alternative energy sources and the function of the car itself. Visits were also made to day camps, exhibitions, fairs and shopping malls. In 1990, *SunQUEST* entered the Australian World Solar Challenge, a 3 000 km race from Darwin to Adelaide. The only entry from a Canadian university, *SunQUEST* placed 24th out of 36 competitors.

The *SunQUEST* summer program, scheduled to run from April 24 – September 1, 1991, promotes environmental awareness and excellence in Canadian engineering.

Contact:
Queen's Solar Vehicle Laboratory
McLaughlin Hall
Queen's University
Kingston, Ontario
K7L 3N6
TEL: (613) 545-6682
FAX: (613) 545-6489

Additional Exhibits and Planetarium Shows

Ebullisciences

A travelling exhibition on basic modern science: physics, chemistry, biology, mathematics and informatics.

Audience: secondary school and college students

Language: French

Date: now under way

University of Toronto
Faculty of Medicine
Division of Biomedical
Communications
Department of Surgery
256 McCaul Street
Toronto, Ontario
M5T 1W5
TEL: (416) 978-2659
FAX: (416) 978-6891

Université de Sherbrooke
Faculté des sciences
Sherbrooke, Quebec
J1K 2R1
TEL: (819) 821-7707
FAX: (819) 821-7921

Expo-Sciences

Regional mini-exhibitions on the social, natural and health sciences.

Audience: senior elementary students

Language: French

Dates: September – June 1989

Commission scolaire de
Rocher Percé
348 La Grande-Allée est
P.O. Box 400
Grande-Rivière, Quebec
G0C 1V0
TEL: (418) 385-2231
FAX: (418) 385-4446

The Future is Now

An interactive computer module demonstrating recent advances in internal medical prostheses.

Audience: young people interested in science, medicine and technology, and the general public

Languages: English and French

Date: Unveiling of prototype on June 1, 1992. Exhibit will be permanently displayed at the Ontario Science Centre in the fall of 1992.

The Lamps of Atlantis

Planetarium show and exhibition on archaeo-astronomy. Documents the ancient constellations and the dates when they were likely named in order to solve the mystery of their origin. Based on the research of Professor Archie Roy.

Audience: general public

Language: English

Dates: June 3 – October 1, 1989

H.R. MacMillan Planetarium and
Gordon Southam Observatory
1100 Chestnut Street
Vancouver, British Columbia
V6J 3J9
TEL: planetarium (604) 736-4431,
observatory (604) 738-2855
FAX: (604) 736-5665

Marathon Runner

An exhibit indicating an athlete's muscle fatigue and exhaustion levels from the measurement of lactic acid found in that person's palm. The exhibit was part of a Science and Sport show that encouraged public participation in demonstrations.

Audience: general public
Languages: English and French
Dates: September 1988 – October 1989

Ontario Science Centre
770 Don Mills Road
Toronto, Ontario
M3C 1T3
TEL: (416) 429-4100
FAX: (416) 429-2934

Natural Sciences Festival
Exhibitions and activities held each summer and related to the fauna and flora of the Charlevoix region of Quebec.

Audience: general public
Languages: English and French

Centre écologique de
Port-au-Saumon
337 route 138
Saint-Fidèle, Quebec
G0T 1T0
TEL: (418) 434-2209
FAX: (418) 434-2559

Nature Interpretation Programs
Three nature programs held annually, including activities and talks, at the Cap Tourmente National Wildlife Area, at the Pointe-Noire Saguenay Marine Park and at the Quebec Aquarium.

Audience: general public
Languages: English and French

Société linnéenne du Québec
1675 avenue du Parc
Sainte-Foy, Quebec
G1W 4S3
TEL: (418) 653-8186
FAX: (418) 683-2893

Popular Mechanics

An interactive exhibit on the engineering and architectural technology behind structures.

Audience: children, young adults and the general public
Language: English
Dates: March 1991 – October 1991

Science World British Columbia
1455 Quebec Street
Vancouver, British Columbia
V6B 5E7
TEL: (604) 687-8414
FAX: (604) 682-2923

Quinzaine des sciences

A wide range of popular events held annually, across Quebec, to promote the province's scientific achievements.

Audience: general public
Language: French

Société pour la promotion de la science et de la technologie
84 rue Notre-Dame ouest,
suite 800
Montreal, Quebec
H2Y 1S6
TEL: (514) 873-7402
FAX: (514) 873-7402

Something Clicked: 150 Years of Photography

Presents the tools, technology and scientific aspects of photography. Features three major components: a historical section, interactive exhibits and program workshops that examine topics such as the darkroom and different types of cameras.

Audience: general public
Language: English
Dates: May 1989 – November 1990

Science World British Columbia
1455 Quebec Street
Vancouver, British Columbia
V6B 5E7
TEL: (604) 687-8414
FAX: (604) 682-2923

Spectrum '92

A three-day, triennial engineering, science and technology exhibition. Spectrum is the largest student-organized engineering exhibition in Canada.

Audience: general public

Language: English

Dates: January 17 – 19, 1992

Spectrum '92

c/o Dean's Office

Room 1C02 Engineering Building

University of Saskatchewan

Saskatoon, Saskatchewan

S7N 0W0

TEL: (306) 966-7755

FAX: (306) 966-7753

Stepping Stones

A planetarium show on space exploration. Topics covered include Canada's role in the United States' *Freedom* Space Station, remote sensing, future flights to Mars and the moon, and new generation earth-to-orbit launchers. Show will travel to Edmonton, Vancouver and Calgary. Also includes the lecture series *A New Look at Space*.

Audience: junior high and high school students and the general public

Language: English

Dates: September 16 – October 3, 1991

Alberta Science Centre Society

P.O. Box 2100, Postal Station M

7th Avenue at 11th Street

Calgary, Alberta

T2P 2M5

TEL: (403) 221-3705

FAX: (403) 237-0186

Sudbury Neutrino

Observatory Exhibit

Deals with neutrinos and their production in the sun and describes the neutrino detector and its construction progress. Program includes a permanent display, a travelling display, audio-visual presentations, workshops, news releases, a brochure, and an interactive computer program.

Audience: high school students, general public

Languages: English and French

Dates: February 1, 1991 – January 31, 1992

Sudbury Neutrino Observatory
Institute

Department of Physics

Laurentian University

Sudbury, Ontario

P3E 2C6

TEL: (705) 675-1151

FAX: (705) 673-6532

Unusual and Little-Known

Deep-Sea Marine Life of Atlantic Canada

An exhibit on unique and unfamiliar oceanic organisms found in Canadian Atlantic waters. Consists of visual displays, life-size models and larger-than-life-size painted murals, as well as information on the ongoing research of Canadian marine scientists.

Audience: students in grades K-12, university students and the general public

Languages: English and French

Dates: May – October 22, 1990;
May 17 – October 12, 1991

Huntsman Marine Science Centre

Brandy Cove Road

St. Andrews, New Brunswick

E0G 2X0

TEL: (506) 529-8895

FAX: (506) 529-4337

**Wanted Alive! The Saint
Lawrence River Valley**

A travelling exhibition on environmental science issues focusing on the natural history of the St. Lawrence River Valley, the environmental problems affecting the region, and the results of scientific research into the ecosystem. A teacher resource kit, a student activity book, and environmental information sheets will accompany the exhibit.

Audience: elementary students, high school students and the general public

Languages: English and French

Dates: Displayed at the Redpath Museum from January 18 – August 15, 1992, before embarking on a cross-country tour until December 1994

Redpath Museum
McGill University
859 Sherbrooke Street West
Montreal, Quebec
H3A 2K6
TEL: (514) 398-4092
FAX: (514) 398-3594

Women of Invention

A travelling exhibit that features the inventions and scientific discoveries of Canadian women. Exhibit is currently travelling across Canada.

Audience: general public

Languages: English and French

Dates: March 11, 1991 – September 14, 1994

Women Inventors Project
Suite 500
22 King Street South
Waterloo, Ontario
N2J 1N8
TEL: (519) 746-3443
FAX: (519) 747-2644

**The World of the Atlantic
Salmon – Mactaquac Fish
Culture Station Interpretation
Centre**

A permanent display of interpretive panels for the visitor centre at the Department of Fisheries and Oceans salmon hatchery in Mactaquac, New Brunswick — the world's largest Atlantic salmon hatchery.

Audience: general public

Languages: English and French

New Brunswick Wildlife
Federation
P.O. Box 913
Moncton, New Brunswick
E1C 8N8
TEL: (506) 857-6824

3D Simulation

Four 3D simulation modules, including interactive software packages and teacher's guides.

Audience: senior elementary and secondary students, and the general public

Language: French

Dates: September 1988 – August 1989

Cirade
Université du Québec à Montréal
P.O. Box 8888, Station A
Montreal, Quebec
H3L 3P8
TEL: (514) 987-6186



SCIENCE THEATRE

* Histoire pour passer la nuit blanche

Nature Dramas*

A Quantum Leap

Additional Science Theatre

Science Education Awareness Program in Public Spaces

Science Theatre Laser Demonstration

* Available only in French.

Histoire pour passer la nuit blanche

Galileo, Aristotle ... *Histoire pour passer la nuit blanche* is a trip through time where history is mixed with intrigue and general knowledge. From October 10 to 28, 1990, six actors depicted the origins of knowledge and the quest for discovery during the Italian Renaissance to children between 12 and 17 years of age. The play emphasized the major role played by women in science.

An activity book with the same title and illustrated with comic strips deals with modern astronomy, ancient concepts of the universe and famous thinkers. In 1992, the Théâtre le petit chaplin will present a play and publish a magazine about astronomy. *Le cadeau d'Isaac* will be the title of both, which will be intended for elementary school students.

The Théâtre le petit chaplin specializes in imaginative, educational plays for young people.

Contact:
Théâtre le petit chaplin
6560 rue Chambord, 2^e étage
Montreal, Quebec
H2J 2B9
TEL: (514) 278-4809

Nature Dramas

Nature Dramas are a unique way to explain natural science to children. Sponsored by Swan Lake Christmas Hill Nature Sanctuary, these theatrical presentations feature a delightful blend of science, mythology and folklore. Scripts cover concepts in biology and ecology with a special emphasis on British Columbia. Favourite shows include: *Froggy Feats*, which introduces the world of amphibians; *Knocking on Wood*, which tells the story of the woodpecker; and *Bug Off*, which presents the historic importance of the mosquito. Children are captivated by the colourful costumes and exaggerated masks, and are encouraged to participate in the performances. Afterwards, follow-up activity and program sheets are distributed to teachers.

Nature Dramas are written and performed by Faye Mogensen, a veteran park naturalist. Each show runs between 45-50 minutes and can be adapted to suit all elementary grade levels, from kindergarten to grade 7. Programs are also offered to community groups and the general public.

Contact:
Faye Mogensen
Swan Lake Christmas Hill Nature Sanctuary
3873 Swan Lake Road
Victoria, British Columbia
V8X 3W1
TEL: (604) 479-0211,
(604) 380-6652
FAX: (604) 652-0611

A Quantum Leap

A Quantum Leap, a Great Canadian Theatre Company (GCTC) production, provides young women with a new, compelling image of science and technology. The adventure begins when two very different teenagers, Chamomile (Cham), a fashion and rock-crazed teen obsessed with being popular, and Abigail (Abby), a science whiz who dreams of becoming an astronaut, get locked in a garage. A magical character named Auntie Matter, who can only be heard by Abby, helps her explain the complexities of science to Cham in simple terms. Together,

the girls investigate aerodynamics, astronomy, the creation of the universe and the physics of sound. The 45-minute play also explores some common fears young women have about science such as being labelled a female "brain," and choosing to drop out of science to become more popular. *A Quantum Leap* shows that science is fun, creative, and not just for boys.

A Quantum Leap was written by Ottawa playwright Vivienne Laxdal and GCTC's former Associate Artistic Director Barbara Lysnes. Designed for children ages 7-14, it toured

throughout Ontario and Western Quebec in 1987 and 1988. Part of the play has been published by Oxford University Press in *Remove the Blindfold*; the complete play has been published by Addison-Wesley in *Galaxies I*.

Contact:
The Great Canadian Theatre
Company
910 Gladstone Avenue
Ottawa, Ontario
K1R 6Y4
TEL: (613) 236-5192

Additional Science Theatre

Science Education Awareness Program in Public Spaces

Public demonstrations of science experiments for children.

Audience: ages 9-15

Language: English

Dates: January – March 1989

Sigma Xi, The Research Society
Ottawa Chapter
P.O. Box 4091, Station C
Ottawa, Ontario
K1P 4P2
TEL: (613) 998-2102

Science Theatre Laser Demonstration

Explores how lasers work and traces Canadian laser research and technology from its early development to current applications in everyday life. Also addresses potential future uses of lasers. Demonstrations daily.

Length: 20 minutes

Audience: general public

Language: English

Science World British Columbia
1455 Quebec Street
Vancouver, British Columbia
V6B 5E7
TEL: (604) 687-8414
FAX: (604) 682-2923



SCIENCE CAMPS

Biology Summer Camp Program

* La nature se rapproche...

Monkey Business: Explorations in Science, Technology and Business

Science North — Discovery Camp

Science Quest

SCI-FI Summer Science Camp

* Sur les traces de Linné

Additional Science Camps

1991-92 Cross Cultural Science Camps

Discovery Western

Making Science Simple — The Y's Way

* Science et contes

* Sciences en folie

* S.T.A.G.E. Aérospatial

* Available only in French.

Biology Summer Camp Program

The Biology Department at Memorial University has developed a day camp that combines extensive field trips with laboratory work. Outdoors, children explore diverse habitats and identify the major plant and animal species they encounter. Back at the lab, they examine samples under microscopes and discuss

the effects of human activity on ecosystems. Children will come away with a better appreciation for their natural environment.

The program, which operates during the months of July and August, consists of a series of one-week day camps for 10-14 year-olds.

Contact:
Peter Earle
Biology Summer Camp
Biology Department
P.O. Box 109, Science Building
Memorial University of
Newfoundland
St. John's, Newfoundland
A1B 3X9
TEL: (709) 737-4500
FAX: (709) 737-3108

La nature se rapproche ...

Come alive and experience the exceptional environment of Charlevoix County! During the summer, the Centre écologique de Port-au-Saumon organizes four natural science and astronomy camps. Girls and boys from 8 to 16 years of age attend the camp, an intensive group experience based on mutual respect and knowledge of the natural environment. Sessions of 6 to 12 days introduce the youngsters to marine, land and geological ecology, and astronomy. Through a variety of activities, research and observation, they learn about insects, animals, plants and the universe.

For 20 years, the Centre écologique de Port-au-Saumon has been involved in research and in the popularization and dissemination of knowledge about the natural sciences. The centre is located on the shores of the St. Lawrence.

Contact:
Centre écologique de Port-au-Saumon
337 route 138
Saint-Fidèle, Quebec
G0T 1T0
TEL: (418) 434-2209
FAX: (418) 434-2559

Monkey Business: Explorations in Science, Technology and Business

Monkey Business is an offshoot of the successful Shad Valley Program developed at the Canadian Centre for Creative Technology (see page 9). While both share common objectives, *Monkey Business* caters to a younger crowd. This week-long, residential summer camp is aimed at students entering Grades 8 and 9 (secondary 2 and 3 in Quebec). *Monkey Business* gives young Canadians the chance to explore a variety of activity-oriented topics in science, technology, and entrepreneurship. In its first year of operation,

Monkey Business served 159 students at three campuses in British Columbia, Alberta and Nova Scotia.

Although each camp is different — drawing on the strengths of its local businesses and communities — they all make learning fun. Children discover topics such as chemistry, astronomy, geology, biology, amusement park physics, robotics, computer-aided design and manufacturing (CAD/CAM), aviation, TV-radio broadcasting, and advertising through lectures and on-site visits. There is also time for recreation and sports,

including Monkey Olympics, swimming and scavenger hunts.

Monkey Business was developed by students from the Shad Valley Program at the University of Calgary in 1989.

Contact:
Canadian Centre for Creative
Technology
8 Young Street East
Waterloo, Ontario
N2J 2L3
TEL: (519) 884-8844
FAX: (519) 884-8191

Science North — Discovery Camp

The Science North science centre is home to *Discovery Camp*, a science day-camp for children ages 8-12. The *Discovery Camp* program is one week in duration, and is offered in English or French. Developed in 1987, *Discovery Camp* has visited the northern communities of Sault. Ste. Marie, Elliot Lake, Blind River, Timmins, North Bay, Kapuskasing, New Liskeard, Kirkland Lake, Thunder Bay, and Sudbury. Each summer brings new activities designed to help children understand and enjoy the world around them. In the past, these have included inventing an alien, building a rocket, and carving soapstone.

Science North, in Sudbury, Ontario, draws over 270 000 visitors annually, with the Big Nickel Mine and the Path of Discovery as part of their operations.

Contact:
Science North — Community Programs
100 Ramsey Lake Road
Sudbury, Ontario
P3E 5S9
TEL: (705) 522-3701
FAX: (705) 522-4954

Science Quest

Science Quest is a Queen's Engineering Society program designed to interest children in science and engineering. This summer camp offers fun activities that challenge young minds. Where else can you make a hologram, design a solar-powered hat fan and hammer a nail with a banana? *Science Quest* is the first science camp of its kind and has been an inspiration for many others. Through week-long summer day-camps, children discover the fascinating worlds of science and engineering.

Entirely run by the engineering students at Queen's University, *Science Quest* promotes learning by doing. The summer camps are for children in grades five through eight. Demand for the program has been overwhelming: 140 campers attended in 1988, with enrolment doubling in 1989. To reach an even wider audience, *Science Quest* began to offer classroom workshops in 1989. In 1990, the number of workshops increased from 48 to 83. A teachers' work-

shop, which was first run in 1990, is expanding.

Contact:
Science Quest
Queen's Engineering Society
Clark Hall
Queen's University
Kingston, Ontario
K7L 3N6
TEL: (613) 545-6870
FAX: (613) 545-6678

SCI-FI Summer Science Camp

SCI-FI is a summer science camp in Saskatoon aimed at children between grades five and eight. When asked what was best about *SCI-FI*, one enthused camper answered: Everything! *SCI-FI* is run by the engineering students at the University of Saskatchewan. The program consists of a series of workshops at schools during the months of May and June, followed by one-week day camps during July and August. In 1990, camp activities included building a camera made out of paper and a radio that didn't require batteries. Children also get to see and touch actual lab equipment through university tours. Every year the camp is revamped, to encourage kids to attend in subsequent years.

Contact:
Saskatoon Engineering Students Society Inc.
College of Engineering
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0
TEL: (306) 966-7754
FAX: (306) 966-7753

Sur les traces de Linné

Pure fun and the excitement of discovery meet at the Cap Tourmente National Wildlife Area. The Société linnéenne, a popular education body that disseminates information on the natural sciences, offers natural science day camps for children between the ages of 7 and 12.

Counsellor-naturalists plan activities on a variety of themes designed to bring campers in contact with the natural environment. For a week, the youngsters learn about meteorology, nature interpretation and the study of mammals.

Contact:
Société linnéenne du Québec
1675 avenue du Parc
Sainte-Foy, Quebec
G1W 4S3
TEL: (418) 683-2432
FAX: (418) 683-2893

Additional Science Camps

1991-92 Cross Cultural Science Camps

Allows northern children to explore the similarities and differences between traditional knowledge and western science by watching native elders and scientists work together. Two camps will be held: the Rae Camp in the Yellowknife region (June 24-29, 1991) and the Pangnirtung Camp in the Baffin region (August 4-10, 1991).

Audience: children ages 9-15

Language: Inuktitut (Pangnirtung Camp), Dogrib (Rae Camp) and English

Science Institute of the
Northwest Territories
Box 1617
Yellowknife,
Northwest Territories
X1A 2P2
TEL: (403) 873-7592
FAX: (403) 873-0227

Discovery Western

Exposes children to engineering through university lab tours, week-long day camps and two-hour workshops. Four day-long workshops are also being developed for grades 9 and 10.

Audience: children in grades 5-8
Language: English

Discovery Western
Undergraduate Engineering
Society
Room 40, EMSB
University of Western Ontario
London, Ontario
N6A 5B9
TEL: (519) 679-2111 ext. 8826
FAX: (519) 661-3502

**Making Science Simple —
The Y's Way**

A program allowing children to investigate science topics such as the experimental process, air and the concept of molecules, water and its properties, magnetism, gravity, and sound and vibration.

Audience: children ages 4-13

Language: English

Dates: Program operated from September 1988 – June 1989

Ottawa YMCA and YWCA
180 Argyle Avenue
Ottawa, Ontario
K2P 1B7
TEL: (613) 237-1320
FAX: (613) 233-3096

Science et contes

A creative science day camp.

Audience: children ages 10-14

Language: French

Dates: every year from the end of June to the end of August

Faculté des sciences et de génie
Local 1042-A
Pavillon Alexandre-Vachon
Université Laval
Quebec City, Quebec
G1K 7P4
TEL: (418) 656-3904
FAX: (418) 656-5902

Sciences en folie

A one-week science and engineering camp where campers learn through hands-on experimentation.

Audience: children ages 8-12

Language: French

Dates: every summer from July 1 to August 16

Association des étudiants de
Polytechnique inc.
P.O. Box 6079, Station A
Montreal, Quebec
H3C 3A7
TEL: (514) 340-5856
FAX: (514) 340-4986

S.T.A.G.E. Aérospatial

A one-week summer camp focusing on aerospace.

Audience: children ages 10-14

Language: French

Dates: every year in July

ARDAA
330 montée Lesage
Rosemère, Quebec
J7E 4H4
TEL: (514) 965-9119
FAX: (514) 965-1376

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