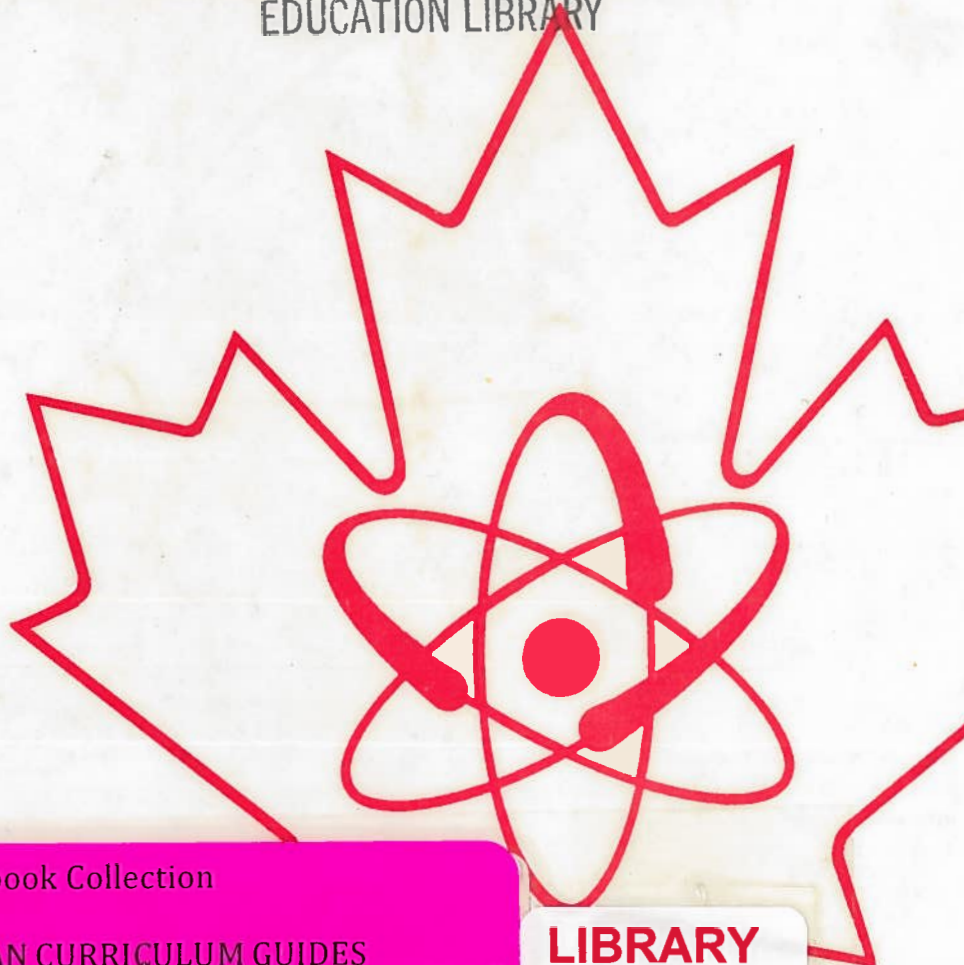


Science: A Bibliography for the Secondary Level

Biology, Chemistry, Physics

EDUCATION LIBRARY



Historical Textbook Collection

SASKATCHEWAN CURRICULUM GUIDES

SCIENCE

Science : a bibliography for the secondary level :
biology, chemistry, physics
(1992)

c.2

**LIBRARY
USE
ONLY**

Recycled Paper

October 1992

Cozy 2

Science
A Bibliography for the Secondary Level
Biology, Chemistry, Physics

Prepared by:

Curriculum and Instruction Division

Saskatchewan Education
October 1992

Science: a bibliography for the secondary level: biology, chemistry, physics

Includes indexes

1. Science--Bibliography. 2. Bibliography.

1. Saskatchewan Education. Curriculum and Instruction Division

016.500

500.16

Table of Contents

Foreword	iv
Acknowledgements	v
How to Use the Bibliography	vi
Considerations in Acquiring Resources	vii
Titles and Descriptions	1
Indexes	99
• Biology - Topical Indexes	101
Media Indexes	107
• Chemistry - Topical Indexes	108
Media Indexes	114
• Physics - Topical Indexes	115
Media Indexes	120
• Free Materials Index	121
• Inexpensive Materials Index	122
• Out of Print Index	123
Distributor Directory	125

Foreword

This multi-media bibliography includes a selected list of materials recently evaluated by Saskatchewan educators and considered appropriate as support for the new secondary level science program.

This bibliography is intended as a selection tool. However, it remains the responsibility of educators in schools to preview and choose materials in order that the needs of students in each particular school and community are met. Teachers and teacher-librarians are advised to refer to their school board's selection policy for guidance in making choices about materials. The Saskatchewan Education publication, *Learning Resource Centres in Saskatchewan: A Guide for Development*, provides valuable direction for development of a selection policy.

As outlined in Saskatchewan Education's *Indian and Métis Education Policy from Kindergarten to Grade XII*, teachers and teacher-librarians are reminded to select works by and about Indian and Métis peoples.

Saskatchewan Education has provided, free of charge, one copy of this bibliography for each school. Additional copies may be purchased from the Book Bureau. Schools also have permission to photocopy this publication.

Please refer to the section **"How to Use the Bibliography"** for information to assist in efficient use of this document. Prices quoted are subject to change, but will serve as a guide to approximate costs. Prices do not include applicable sales tax.

Educators should keep in mind that new resources with curriculum relevance are being published and produced each year. This bibliography includes resources that were submitted to Saskatchewan Education during the pilot stage of the curriculum development project and that were positively reviewed. Teachers are encouraged to evaluate other new resources as they become available.

The use of fiction and other genre as extensions and integrations for the new science curricula is encouraged. Titles that fit these categories may be found in respective subject area bibliographies published by Saskatchewan Education.

For additional information on meeting resource needs, please refer to the section **"Considerations In Acquiring Resources."**

Acknowledgements

Saskatchewan Education expresses its appreciation to the publishers, distributors and producers who provided resources for examination, and gratefully acknowledges the contribution made by the following educators who served as materials evaluators. While an attempt has been made to list everyone who was involved in evaluating materials, someone may have been missed. Please accept our apologies if your name has been omitted.

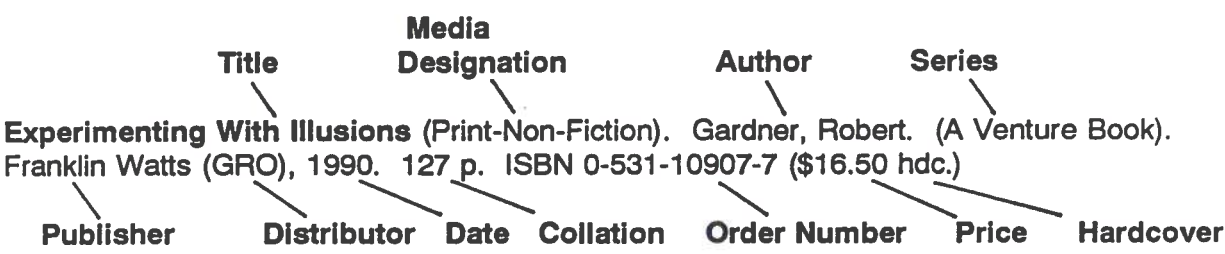
Ronald M. Adamache
Richard G. Anderson
Kim Archibald
Ronald B. Arnold
Eric S.E. Backman
Samual K. Baidoo
David R. Balon
Blaine M. Barnstable
Frank W. Bellamy
Larry K. Bendall
Jim G. Berry
Bernice L. Berscheid
Lance Brown
John A. Cazakoff
A. Connell
Charles E. Dodsworth
Robert W. Donnan
Richard F. Dybvig
Elsie M. Eade
Dean M. Elliott
Rudi A. Fast
Jerome E. Faubert
B. Forsulta
Robert L. Forsythe
Richard W. Frey
Dale E. Friesen
Andrea J. Gareau
Michael P. Gibson
Barrie Golden
Barry A. Harman
Bill E. Heavisides
Elizabeth Henger
R. Dave Hinz
George Huczek
Derrick Huschi
Darrel R. Johnson
Thomas J. P. Jordens

Al D. Kabatoff
Alexander N. Konkin
Naomi J. Kral
Morley J. M. Leung
John H. MacDonald
Doug L. Mader
H. Rae Mitten
Pat C. Murphy
Ken H. Murray
Gordon R. Pacholko
Lynn R. H. Phaneuf
Myles E. Radchenko
Clarence Reimer
Peter W. Robertshaw
Barry D. Robinson
Brenda T. Ryan
Leon G. Sokolon
David J. Staples
Jim B. Strass
Denys L. Stubbins
Robert E. Suek
Ivan Tam
Paul W. T. Tan
Dennis Thiessen
Merv Tomski
David P. Waters
David Gwyn Watkins

How to Use the Bibliography

The bibliography is organized into the following sections:

Titles and Descriptions: Titles are listed alphabetically. The citations provide bibliographic information, sources, annotations, and suggested use which includes the topic of study that the materials would appropriately support. The abbreviation hdc. denotes hardcover edition, while pbk. denotes paperback edition. Prices are subject to change. An example of a citation for print is:



In most instances the annotation for each title on this list provides guidance as to the support the material gives to the Dimensions of Scientific Literacy. It should be noted that when qualitative terms such as "excellent" are used to describe the support given the DSLs, educators should keep in mind that these terms are the opinions of the evaluators who reviewed the resources. Guidance has also been given for selecting materials with the background of the teacher and the special needs of the students in mind.

Suggested Use: (TOPICS) This section provides ideas for some ways the material could be utilized. Teachers are encouraged to employ the resources for as many appropriate teaching situations as possible.

Other Uses: As an aid for purchasing and in the use of materials, other subjects are noted for which the material has or may be listed.

Topical Indexes: Titles are arranged by subject and listed alphabetically under each topic.

Media Indexes: Titles are organized by subject and listed alphabetically under each media designation.

Free and Inexpensive Materials Indexes: A list of titles which are free on loan or available to purchase, plus a list of titles with a purchase price of less than ten dollars, have been included. The titles are sorted by media designation and then listed alphabetically.

Out-Of-Print Index: Some materials which are currently out of print have been included. Many of these resources were previously sent free of charge to schools, or were previously listed in the *Textbooks Circular*, and therefore may be available in the school collection.

Distributor Directory: The abbreviations, enclosed in parentheses following the publisher or producer, represent the distributor. The full name and address of each company are given in this section.

Considerations When Acquiring Resources

The following list of resources is centered around the philosophy of resource-based learning in which a variety of resources, rather than one set of textbooks, is used to support the curriculum.

For secondary science, the purchase of a class set of textbooks is neither desirable nor recommended.

Before ordering materials, several factors need to be considered:

Educators are encouraged to move away from a single textbook approach into resource-based learning, thus providing students with opportunities to interact with a wide range of current media in a variety of learning situations. The resources recommended in this bibliography include kits, software, videotapes, and print materials in various formats. In addition, it is important that human resources be called upon from the community to enrich the student learning experiences. Saskatchewan Education is aware of the challenge that resource-based learning poses to educators. Because of ever-changing information and budget constraints, educators are faced with difficult decisions. When using this bibliography as a selection aid, educators may find the following suggestions to be helpful:

Background Review

- The school board's selection policy should be reviewed.
- Materials on bias and resource-based learning should be consulted. For example, the Saskatchewan Education publications *Diverse Voices*, *Resource-Based Learning* and *Selecting Fair and Equitable Learning Materials* could be reviewed.

Analyzing Present Resources

- The bibliography should be cross-referenced with the school resource centre catalogue to identify resources that have already been acquired.
- Materials in the existing school collection should be assessed for appropriate scope and sufficient number of resources, based on curriculum relevance and the needs of students and teachers. Considerations of needs include:
 - (i) student and teacher background, interests and abilities;
 - (ii) reflection of curriculum philosophy; and,
 - (iii) the accuracy of information, currency and bias, reading level, cultural relevance, adaptability and versatility of resources.

Possible Starting Points for Acquisition

- Resource needs not met by present school collections should be considered by individual educators and then discussed with colleagues.

- Using the topical index, titles could be identified to strengthen specific weaknesses in the collection.
- Key resources have been identified to give extra selection guidance for teachers by identifying resources which have a strong curriculum fit. In some cases, resources with a Saskatchewan focus have also been identified. It should be noted that one textbook will not meet the needs of the new curriculum and educators should not expect any one resource on these lists to do so. These key resources have been specifically correlated to the curriculum topics as outlined in:
 - *Science: An Information Bulletin for the Secondary Level - Biology 20/30 Key Resources*
 - *Science: An Information Bulletin for the Secondary Level - Chemistry 20/30 Key Resources*
 - *Science: An Information Bulletin for the Secondary Level - Physics 20/30 Key Resources.*
- Using the column "other uses", titles chosen under specific topics could then be further evaluated for their versatility to meet needs in more than one subject area or grade level.
- Students' suggestions for topics and titles should be considered.
- Displays of recommended materials could be organized on a school division level so that educators are provided with the opportunity to preview materials before purchasing. Two or more school divisions might cooperate in organizing these displays.
- Pamphlets, posters and other types of ephemeral materials have been excluded from this bibliography. Schools are encouraged to contact various government departments, community organizations and agencies for additional free and inexpensive materials to supplement their collections.
- The videotape programs available for duplication from Media House Productions could be ordered. These are high quality programs that can be acquired at a nominal cost. Videotape copies can be made on: 3/4" Umatic, 1/2" Betamax or 1/2" VHS video cassettes. Schools are responsible for postage, plus a service charge of \$1.00 per title.

Media House will be offering a 10% reduction on the duplication charge for a complete series ordered. In order to qualify for the discount, a complete series must be ordered by series title, not individual programs, listing only the first and last video number.

Schools also must provide blank tapes or submit payment if they wish to have Media House Productions supply the tapes. Duplication order forms are available from Media House Productions. Please refer to the Distributor Directory for the address and telephone number.

Guides for some films and videos are listed in *Audio-Visual Supplementary Material Order Form* and are available for a nominal fee from the Book Bureau. Please refer to the Distributor Directory for the address and telephone number.

- Networking could be done with neighbouring school resource centres to consider complementary purchases. Sharing expensive resources such as kits, series and novel sets can be very practical if there is a means of circulating resources between and among schools.

-
- The Book Bureau and many book outlets in Saskatchewan will provide a "Special Ordering Service" where titles from various distributors listed in this bibliography can be placed on one purchase order. This saves the schools time and paperwork. The regular markup will be charged in this type of Book Bureau order.
 - Before purchasing any of the listed resources, Saskatchewan Education recommends that educators preview the resources and select the ones that will best meet their needs. Preview policies vary from company to company, but if inappropriate materials have to be returned, they must be in saleable condition. The Book Bureau will not provide preview copies, but will allow materials to be returned. However, a 20% restocking fee of up to \$2.00 per returned item will be charged, so it is advisable to order only one copy to review before placing large orders.

It is hoped that these practical guidelines will assist educators in developing a highly useful, suitable collection of resources which meets the needs of the students and teachers in their community.

Titles and Descriptions

Acid Rain: A Sourcebook for Young People (Print-Non-Fiction). Miller, Christina and Louise Berry. Julian Messner (MUS), 1986. 114 p. ISBN 0-671-60177-6 (\$17.95 hdc.)

This good resource discusses acid rain in connection with the world's lakes, forests and atmosphere. Canada is included on a map showing acid rain falls by pH levels and displays areas believed to be sensitive to acid rain because of their low buffering capacity. Black and white photographs are used. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: CHEM 30 - Acid-Base Equilibria, Independent Research

Acid Rain Series (Videotape). Canadian Broadcasting Corporation (MHP), 1987. 3 - (13-18 min.) programs Dup. Order No. V02945 - V02947

Titles in this series are:

Acid Rain Part 1 - What is Acid Rain

Dup. Order No. V02945

An explanation is given about how sulphur and nitrogen oxide emissions from sources such as ore smelters, power plants and automobile exhaust undergo chemical changes when they travel over long distances. The video shows which areas are most susceptible and why.

Acid Rain Part 2 - The Effects of Acid Rain

Dup. Order No. V02946

A discussion of the impact that prolonged exposure to acid rain has on the environment is given in this video. It discusses some of the more serious effects including human disease, the destruction of aquatic life, damage to crops and forests and the deterioration of buildings.

Acid Rain Part 3 - What Can We Do

Dup. Order No. V02947

This video provides an examination of the complex web of economic, political, environmental and social issues surrounding acid rain. It explains that though we have the technology to reverse the effects of acid rain, it is not a simple matter to implement the technology. Someone must pay the cost and different groups have opposing viewpoints on this serious issue.

Suggested Use: CHEM 30 - Acid-Base Equilibria

The Acme School of Stuff Series (Videotape). TVOntario (MHP), 1988. 13 - (24 min.) programs. Teacher's guide. (BB) Order No. BB 6329 (\$2.90)

The various programs explore the basic principles behind everyday items and show what makes them work.

Title	Topic	Dup. Order No.
Program 1	Cassette tapes, chocolate & microwave ovens	V03325
Program 2	Telephones, sewage treatment & video	V03326
Program 3	Batteries, water and fuel injection	V03327
Program 4	Records, neon and the cathode-ray tube	V03328
Program 5	Light bulbs, the Canadian Standards Association and modems	V03329
Program 6	Electricity, glass bottles and brakes	V03330
Program 7	The history, operation, manufacturing & testing of the toilet	V03331
Program 8	Cable television, the subway and engineering	V03332
Program 9	Traffic signals, a natural gas pipeline and alternating current	V03333

Program 10	Digital computers, folding paper cartons and the electric shaver	V03334
Program 11	Electronics, the body shop and coin units in vending machines	V03335
Program 12	Composite substances, piano rolls and automobile alignment	V03336
Program 13	Engines, wire and satellites	V03337

Suggested Use: CHEM 20 - Atoms & Elements, Molecules & Compounds|CHEM 30 - Oxidation & Reduction|PHYS 20 - Light|PHYS 30 - Kinematics & Dynamics, Electricity, Atomic Physics

Other Uses: Science 10|Middle Level Science

Advances In Genetic Technology (Print-Non-Fiction). BSCS. D.C. Heath (HTH), 1989. 85 p. BB 1051 (\$11.00 student edition pbk.) BB 1052 (\$11.00 teacher's guide pbk.)

A practical introduction to the field of biotechnology is provided. The lessons may be covered in a relatively short period of time with inexpensive and readily available materials. This is excellent material, especially for enrichment purposes. Science processes, technology, skill development and ethics are emphasized. American content is used. Included is a table of contents.

Suggested Use: BIO 30 - Genetics

The Ages of Gaia: A Biography of Our Living Earth (Print-Non-Fiction). Lovelock, James. (The Commonwealth Fund Food Program). Bantam Books (BAN), 1990. 252 p. ISBN 0-553-34816-7 (\$13.95 pbk.)

The greater part of this book is about a new theory of evolution, one that does not deny Darwin's vision, but adds to it by considering that the planet earth (Gaia) may be the largest living organism, and is undergoing evolutionary change. This illustrates concepts from the Nature of Science and Processes of Science in that this material demonstrates the difficulty and slowness in changing scientific thought and opinion. This may be useful for extensions. Teacher reference.

Suggested Use: BIO 20 - Various Options|BIO 30 - Various Options

AIDS: Deadly Threat. Rev. ed. (Print-Non-Fiction). Silverstein, Alvin and Virginia Silverstein. Enslow (MEA), 1991. 160 p. ISBN 0-89490-175-3 (\$32.00 hdc)

The Silversteins examine the origins and effects of AIDS and dispel myths about the disease. This fascinating book provides up-to-date information about the leading edge of discoveries in AIDS research and treatment. It is interesting reading for students. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Diversity of Life|BIO 30 - Animal Systems

Other Uses: Wellness 10

Alaska's Wilderness Medicines (Print-Non-Fiction). Alaska Northwest Books (ANB), 1987. ISBN 0-88240-322-2 (\$9.95 pbk.)

Black and white drawings add to the information given about the description, distribution, constituents, culinary uses, medicinal uses of and warnings about the entries. Many of the plants may be found in

Saskatchewan. There is a list of the therapeutic uses of Alaskan plants as well as a list of conditions that can be treated.

Suggested Use: BIO 20 - Diversity of Life, Agricultural Botany

Animal Rights: Opposing Viewpoints (Print-Non-Fiction). Rohr, Janelle, ed. (Opposing Viewpoints). Greenhaven (NEL), 1989. 235 p. ISBN 0-89908-415-X (\$13.50 pbk.) ISBN 0-89908-440-0 (\$23.99 pbk.)

Thirty-two articles debating the question of whether animals have rights are presented. This resource would aid in the development of scientific literacy by analyzing opposing points of view. Skills which could be developed include evaluating sources of information, using judgement to form opinions about social issues and becoming aware of the great diversity of opinion in our society. The book touches on few scientific concepts. The material is not presented in a high interest format for students.

Suggested Use: BIO 20 - Diversity of Life|BIO 30 - Animal Systems

Animals in the Classroom: Selection, Care, and Observations (Print-Non-Fiction). Kramer, David C. Addison-Wesley (ADD), 1989. 234 p. ISBN 0-201-20679-X (\$37.95 pbk.)

Kramer describes equipment needed for and environmental considerations of keeping animals in the classroom. Topics relating to history, physical characteristics, reproduction, obtaining, caring for and breeding of invertebrates and vertebrates are covered. There is also a section on the removal of animals from the classroom in a sensitive and environmentally friendly manner when specific projects are over. The information is well organized and descriptive. The combination of illustrations and photographs add to the appeal. The material is strong in the support of the Dimensions of Scientific and Technical Skills, the Values that Underlie Science and Key Science Concepts. Included are a table of contents and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference
Other Uses: Middle Level Science

Anti-Nuclear Game (Print-Non-Fiction). Sims, Gordon. University of Ottawa (UOP), 1990. 285 p. ISBN 0-7766-0285-3 (\$25.00 pbk.)

The author looks at the positive aspects of the use of nuclear energy for generating electricity as he responds to those opposed to the nuclear industry. Sims contends that the anti-nuclear forces have been frightening the public with misguided and inaccurate claims about the hazards of nuclear power. Included is a table of contents.

Suggested Use: PHYS 30 - Nuclear Physics
Other Uses: Science 10

APPIL Student's Resource Book (Print-Non-Fiction). John Murray in assoc. with Inner London Education Authority (GNP), 1990. 216 p. ISBN 0-7195-4581-1 (\$27.85 pbk.) ISBN 0-7195-4582-X (\$69.45 Teacher Resource book)

This book includes a collection of problems relating to mechanics, light, electricity and electronics. This material involves math that only a small percentage of the grade 12 students would be capable of understanding. The resource would be appropriate for schools looking for enrichment material.

Suggested Use: PHYS 20 - Light|PHYS 30 - Mechanical Energy, Fluid Mechanics, Electricity

Atom: Journey Across Subatomic Cosmos (Print-Non-Fiction). Asimov, Isaac. Dutton (MCC), 1991. ISBN 0-525-24990-7 (\$29.99 hdc.)

The book provides a historical perspective of the development of atomic theory from the time of its earliest conception to the present. It does an excellent job of putting science and its development into the context of social history. As well it provides an excellent reference for students concerning topics such as light and many others in the fields of nuclear physics and chemistry. The material would be support concepts at the upward end of the spiral of DSLs.

Suggested Use: PHYS 20 - Light|PHYS 30 - Atomic Physics|CHEM 20 - Atoms & Elements

Atoms and the Big Bang: A Video Interview with Drasko Jovanovic (Videotape). (Scientists Speak Out). Hawhill (HAI), 1991. 20 min. Order No. 506 (\$49.00 U.S.)

A physicist and cosmologist explains recent research into the origin of the universe. Jovanovic reveals a very interesting personality in his description of such things as the discovery of quarks. This interview may be useful to illustrate the Values that Underlie Science and the Processes of Science.

Suggested Use: CHEM 20 - Atoms & Elements|PHYS 30 - Atomic Physics

Basic Genetics: A Human Approach. 2nd ed. (Print-Non-Fiction). BSCS. Kendall/Hunt (KHP), 1991. 125 p. ISBN 0-8403-5705-2 (\$11.90 U.S., student edition pbk.) ISBN 0-8403-5706-2 (\$22.90 U.S., teacher's guide pbk.)

Articles, stories, editorials, letters and interviews are presented in a magazine format. The activities provide for examination of the principles of genetics and the moral, ethical, and legal issues that arise from new knowledge and technology in genetics. The content is American. Included are a table of contents and bibliography.

Suggested Use: BIO 30 - Genetics

Beginning Hydroponics. Rev. ed. (Print-Non-Fiction). Nicholls, Richard E. Running (UOP), Order No. 694720-00 (\$13.13 pbk.)

Information provided in this resource should serve to give students inspiration and instruction for projects related to hydroponics.

Suggested Use: BIO 20 - Agricultural Botany
Other Uses: Science 10|Middle Level Science

Beyond Einstein: The Cosmic Quest for the Theory of the Universe (Print-Non-Fiction). Michio, Kaku & Jennifer Trainer. Bantam Books (BAN), 1987. 225 p. ISBN 0-553-34349-1 (\$12.95 pbk.)

A portrait of the theory of superstrings, and the development since Einstein's death toward completing his ultimate dream, is given by the authors. This is an excellent resource, especially for teacher reference and use by advanced students. This book is easier to read than many others on the same topic. The materials support the Dimensions of the Nature of Science, Key Concepts in Science, STSE Interrelationships, Processes of Science and the Values that Underlie Science. Included are a table of contents, bibliography and an index.

Suggested Use: PHYS 30 - Teacher Reference

Beyond the Crime Lab: The New Science of Investigation (Print-Non-Fiction). Zonderman, Jon. (Wiley Science Editions). John Wiley & Sons (WIL), 1990. 205 p. ISBN 0-471-62296-6 (\$27.95 hdc.)

This book gives a brief account of the many applications that occur in science as they relate to forensics and forensic technology. Biology, chemistry, physics and computer science are all represented in a modular form. Real life cases from F.B.I. files are used and a Canadian student could gain a general feeling for how the concepts presented apply to everyday life. The writing style is not technical and therefore would appeal to the average student. Critical thinking skills could be developed through use of the section provided on the collection and distribution of information about private citizens. Included are a table of contents and an index.

Suggested Use: BIO 30 - Genetics|CHEM 20 - Independent Research|CHEM 30 - Independent Research|PHYS 30 - Electricity
Other Uses: Science 10|Teacher Reference for Elementary Science

Biological Science: An Ecological Approach: Green Version. 7th ed. (Print-Non-Fiction). BSCS. Kendall/Hunt (KHP), 1992. 800 p. Ordering Information:

Student Text	ISBN 0-8403-5864-4	\$35.90 U.S., (hdc.)
Student Study Guide	ISBN 0-8403-5866-0	\$ 8.90 U.S., (pbk.)
Teacher's Text	ISBN 0-8403-5865-2	\$44.90 U.S., (hdc.)
Teacher's Study Guide	ISBN 0-8403-5867-9	\$17.90 U.S., (pbk.)
Teacher's Resource Book	ISBN 0-8403-5868-7	\$49.90 U.S., (hdc.)

Although American in content, this text is an excellent resource. It is process oriented and activities are incorporated into the text. There are hints in the teachers edition for applying the DSLs. The section on keeping biological information in the classroom current is useful for teaching about new

technology. There is also a section on sharing careers in biology. Previous editions of this text were listed in the Textbooks Circular. This edition is considered better than the 6th edition in respect to size and binding. Some sections have been reorganized to make the content flow more easily. Included are a table of contents, glossary and an index.

Suggested Use: BIO 20 - Introduction, Ecological Organization, Diversity of Life, Agricultural Botany of Saskatchewan|BIO 30 -Chemical Basis of Life, Cell Structure & Function, Genetics, Animal Systems, Evolution

Biology (Print-Non-Fiction). Cadogen, Alan and Nigel Green. Heinemann Educational Books (GNP), 1985. 269 p. ISBN 0-435-59089-8 (\$22.80 pbk.)

A serious evaluation of biological concepts which are used in the students' lives or relate to issues in their lives is promoted in this valuable resource. There is a succinct, comprehensive presentation with appealing pictures, diagrams, tables and labs. Basic topics include the organization of life, the cell, functioning animals, green plants, continuity and people, and the environment. Adapted from 1981 "Life Probe" by D.E. Galbraith, et al. Illustrations may need screening. British terminology is used. Included are a table of contents and an index.

Suggested Use: BIO 20 - Ecological Organization, Agricultural Botany|BIO 30 - Cell Structure & Function, Genetics, Animal Systems
Other Uses: Science 10

Biology: A Systems Approach (Print-Non-Fiction). Kormondy, Edward J. and Bernice E. Essenfeld. Addison-Wesley (ADD), 1988. 804 p. ISBN 0-201-22129-2 (\$71.17 teacher's edition) ISBN 0-201-22128-4 (\$52.35 student edition)

This text is colourful and relatively easy to read. It could be used with students having difficulty in the regular program. Labs are not integrated into the text. While there is a wealth of physiology based labs, the ecological approach that is used in the new Biology 20 curriculum gets minimal support from the lab manual. A very traditional biology text. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Introduction, Ecological Organization, Diversity of Life|BIO 30 - Chemical Basis of Life, Cell Structure & Function, Genetics, Animal Systems, Evolution
Other Uses: Science 10

Biology: Discovering Life (Print-Non-Fiction). Levine, Joseph S. and Kenneth R. Miller. D. C. Heath (HTH), 1991. 898 p. ISBN 0-669-12008-1 (\$54.00 hdc.)

The information presented in this text is also available in the four attractive paperback modules which follow this entry. See the annotations for *Biology: Discovering Life, Volumes 1-4* for contents of this textbook and suggested uses.

Suggested Use: BIO 20|BIO 30

Biology: Discovering Life. Vol. 1: Core Concepts (Print-Non-Fiction). Levine, Joseph S. and Kenneth R. Miller. D. C. Heath (HTH), 1992. 419 p. ISBN 0-669-28840-3 (\$40.00 pbk.)

Major concepts covered in this resource are the structure and function of ecology, human ecology, population growth, evolution genetics and biochemistry. The coverage is comprehensive. This resource has an excellent introduction unit on The Nature of Science. Case studies are provided. There is also good coverage of STSE Interrelationships. Included are a table of contents, glossary and an index.

Suggested Use: BIO 20 - Ecological Organizations|BIO 30 - Genetics, Evolution, Cell Structure & Function

Biology: Discovering Life: Vol. 2: The Diversity of Life (Print-Non-Fiction). Levine, Joseph S. and Kenneth R. Miller. D. C. Heath (HTH), 1992. 97 p. ISBN 0-669-28841-1 (\$9.00 pbk.)

Levine and Miller include the development of life from simple organisms to the most advanced organisms. This is a valuable, concise resource. Included are a table of contents, bibliography and index.

Suggested Use: BIO 20 - Diversity of Life|BIO 30 - Evolution

Biology: Discovering Life: Vol. 3: Plant Systems (Print-Non-Fiction). Levine, Joseph S. and Kenneth R. Miller. D. C. Heath (HTH), 1992. 71 p. ISBN 0-669-28842-X (\$9.00 pbk.)

The authors cover the structure and function of plants. This colourful, easy to use book is a good resource for senior biology. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 20 - Agricultural Botany

Biology: Discovering Life: Vol. 4: Animal Systems (Print-Non-Fiction). Levine, Joseph S. and Kenneth R. Miller. D. C. Heath (HTH), 1992. 308 p. ISBN 0-669-28843-8 (\$18.00 pbk.)

This volume comprehensively covers topics such as animal physiology, structure, disease, genetics, behaviour, reproduction and development. The detail provided would aid teachers or interested students in the comprehension of these topics. "Theory in Action" sections are good motivators that lead beyond the material given. The STSE, Interrelationships, Process of Science, Nature of Science and Key Science Concepts are supported very well. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 30 - Animal Systems

Biology In Action (Print-Non-Fiction). Poole, Marion C., Grant Pilkey and C. Craig Johnson. Harcourt Brace Jovanovich (HBJC), 1991. ISBN 0-7747-1348-8 (\$39.95 hdc.)

Biology in Action is a clear, concise up-to-date resource text. It has some innovative and interesting activities which would be useful for independent study. The special features sections include topics

such as DNA typing which are useful for enrichment purposes. This resource is also useful for activities to support the Science 10 topics of Food Additives and Human Nutrition, Water Quality and the Greenhouse Effect.

Suggested Use: BIO 30 - Animal Systems, Genetics
Other Uses: Science 10|Wellness 10

Biology: Life on Earth. 3rd ed. (Print-Non-Fiction). Audesirk, Gerald and Teresa Audesirk. Macmillan (MMC), 1992. ISBN 0-02-304811-5 (\$84.95 hdc.)

This book will be a valuable teacher reference. Supplementary materials such as the excellent set of overhead transparencies are also available.

Suggested Use: BIO 20 - Teacher Reference|BIO 30 - Teacher Reference

Biology: Living Systems. 6th ed. (Print-Non-Fiction). Oram, Raymond F. Merrill (BB), 1989. 822 p. BB 1056 (\$20.70 student text hdc.) BB 1067 (\$63.60 teacher's edition)

The text offers information with colourful and clearly explained diagrams. It is content oriented. Activities are incorporated into the text. The advances in biology sections at the end of the chapters are interesting reading for students. This text is strong in the area of photosynthesis.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life, Agricultural Botany|BIO 30 - Chemical Basis of Life, Cell Structure & Function, Genetics, Animal Systems, Evolution

Biology Matters: Science, Technology and Society Issues (Print-Non-Fiction). D. C. Heath (HTH), 1991. 29 p. ISBN 0-669-25282-4 (\$5.95 pbk.)

Biology Matters is a series of magazine-style readings that highlight real-life issues in the field of applied biology. Students are provided with information on current topics and technology and are exposed to some of the ethical considerations related to research, health issues, and the environment. Each *Biology Matters* reading concludes with questions, suggestions for further study, and a list of additional readings. Included are a table of contents and further readings.

Suggested Use: BIO 20 - Introduction, Agricultural Botany|BIO 30 - Genetics, Animal Systems|PHYS 30 - Atomic Physics
Other Uses: Science 10

Biology of Ourselves. 2nd ed. (Print-Non-Fiction). Berry, Gordon S. and David C. Lynn. John Wiley & Sons (WIL), 1990. 484 p. ISBN 0-471-79526-7 (\$43.13 - 20% discount hdc.)

This book provides a foundation for the understanding of both the structure and function of the human body. A number of references in the text require critical thinking about issues which range in

perspective from a personal focus to a global awareness. Included are a table of contents, glossary and an index.

Suggested Use: BIO 30 - Animal Systems
Other Uses: Science 10

The Biology of ... Series (Videotape). Lucerne Films (MHP), 1988. 10 - (10-16 min.) programs

Overviews of various taxonomic groups are given in the following programs:

The Biology of Algae	Dup. Order No. V03582
The Biology of Annelids	Dup. Order No. V03000
The Biology of Arthropods	Dup. Order No. V03583
The Biology of Bacteria	Dup. Order No. V03584
The Biology of Coelenterates	Dup. Order No. V03001
The Biology of Echinoderms	Dup. Order No. V03585
The Biology of Flatworms	Dup. Order No. V03586
The Biology of Fungi	Dup. Order No. V03587
The Biology of Mollusks	Dup. Order No. V03588
The Biology of Protozoans	Dup. Order No. V03002

Suggested Use: BIO 20 - Diversity of Life|BIO 30 - Animal Systems

Biology Unit: Chemicals In Agriculture (Print-Non-Fiction). Scott, Martha G. (Environmental Literacy). Key Foundation (KYF), 1992. 30 p. No order no. needed (\$4.00 pbk.)

The impact on the ecosystem of the use of chemicals in agriculture is presented in this module. Many colourful illustrations are used. Included are a table of contents and a glossary.

With accompanying class set, teacher's guide is available free on computer disc in IBM or Macintosh format. Please specify format when ordering. For Workshop information phone (705) 726-2276 or write to the address listed in the distributor directory.

Suggested Use: BIO 20 - Ecological Organization, Agricultural Botany|
CHEM 20 - Independent Research|CHEM 30 - Independent Research

Biology: Your Bodyworks (Print-Non-Fiction). Scarrow, Hart R. Globe/Modern (GMC), 1990. 600 p. ISBN 0-88996-214-6 (\$35.60 hdc.)

Chapters one to nine of this resource very thoroughly cover aspects of the human body. This information is tied together with applicable and easy-to-do labs. Additional units are added which deal with waste and environmental problems. Some of the additional information, other than the human body information, may seem shallow to some readers. Useful career sections are given at the end of chapters and/or profiles.

Suggested Use: BIO 20 - Agricultural Botany, Various Options|BIO 30 - Cell Structure & Function, Genetics, Animal Systems, Various Options

Biomedical Ethics (Print-Non-Fiction). (Opposing Viewpoints). Greenhaven (NEL), 1987. 216 p. ISBN 0-89908-396-X (\$23.99 hdc.) ISBN 0-89908-371-4 (\$13.50 pbk.)

This resource presents the pros and cons for the topics of genetic engineering, organ transplants, reproductive technology, animal use in research and other topics related to ethics in health care. Most students may find the information too difficult, but this resource may be useful for upper level students and as a teacher resource. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 30 - Genetics, Animal Systems

Biomedical Technology (Print-Non-Fiction). BSCS. (Innovations: The Social Consequences of Science and Technology Program). Kendall/Hunt (KHP), 1984. 89 p. ISBN 0-8403-3286-6 (\$6.90 U.S., student edition pbk.) ISBN 0-8403-3287-4 (\$14.90 U.S., teacher's guide)

Controversial topics such as changing patterns of sickness and health, public understanding of biomedical science, plus the innovations of genetic screening, in vitro fertilization, embryo transfer, amniocentesis and science as a business are dealt with in this material. This American module is designed to deal with what the topic is, how it affects the student and the general population, how valuable the innovation is to the general population and what the future of the innovation might be.

Suggested Use: BIO 30 - Genetics, Animal Systems

Biosphere 2: The Human Experiment (Print-Non-Fiction). Allen, John. Penguin (PBC), 1991. 156 p. ISBN 0-1401-5392-6 (\$22.95 pbk.)

Four men and four women, who are scientists, engineers and agriculturists, are sealed inside one of the most extraordinary structures ever conceived: Biosphere 2. Emulating the Earth itself (Biosphere 1), Biosphere 2 is by far the largest self-sustaining ecosystem ever built, containing under its three-acre glass-domed complex a rainforest, a savannah, a marsh, an ocean, a desert, a farm and a "Microcity"—with 3,800 species of plant and animal inhabitants. What is learned in Biosphere 2 may help us understand more about life on Earth, and to manage Earth's resources better. It may also lay the ground work for creating self-sustaining environments for space travel and colonization. John Allen, one of Biosphere 2's visionary founders, explains the genesis of the project and chronicles its evolution and development over the past six years.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life

Biotechnology: The Search for Wisdom E.D.I.T. File 11 (Print-Non-Fiction). Tooke, Moyra. (E.D.I.T. Series). Teachers' Press (TCH), 1987 (\$30.00 looseleaf)

This material would encourage students to consider how science and technology impacts on each of them. The information particularly addresses STSE Interrelationships and the Nature of Science.

Suggested Use: BIO 30 - Genetics, Animal Systems

The Book for Women Who Invent or Want To (Print-Non-Fiction). Wallace, Elizabeth. The Women Inventors Project (WIP), 1987. 122 p. No order no. (\$15.00 pbk.)

Information is presented on what a person would need to know to bring an invention from the idea stage through market research, planning, prototype and financing to packaging and marketing. The aim of the book is to guide and support new inventors by providing complete information, moving from example to theory and from known information to new experience. Inventors or other interested readers are encouraged to develop networks and support one another. There is a section on group learning plus appendices with resource information. Included are a table of contents and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10 - Middle Level Science

A Brief History of Time: From the Big Bang to Black Holes (Print-Non-Fiction). Hawking, Stephen W. Bantam Books (BAN), 1988. 198 p. ISBN 0-553-05340-X (\$24.95 hdc.)

Hawking relates the history of the world from the standpoint of the General Theory of Relativity. An extensive treatment of black holes is included. The book is good in its support of the seven Dimensions of Scientific Literacy, but at an extremely high reading level. Included are a table of contents, glossary and an index.

Suggested Use: PHYS 30 - Teacher Reference

Buckyballs: A New Molecule for a New Chemistry - A Video Interview with David Huffman (Videotape). (Scientists Speak Out). Hawkhill (HAI), 1991. 22 min. Order No. 501 (\$49.00 U.S.)

The discovery of 'Buckminsterfullerene', a new building block for chemical compounds which may lead to new discoveries in various aspects of our lives as well as a new branch of chemistry is discussed. This program relates to Physics as well as Chemistry as this carbon molecule may be a superconductor. This interview emphasizes some of the Values that Underlie Science and the Processes of Science. Other DSLs such as STSE Interrelationships are also supported.

Suggested Use: CHEM 20 - Molecules & Compounds|PHYS 30 - Atomic Physics

The Butterfly Garden: Creating Beautiful Gardens to Attract Butterflies (Print-Non-Fiction). Sedenko, Jerry. Villard Books (RAN), 1991. 144 p. ISBN 0-394-58982-3 (\$33.00 hdc.)

Sedenko's book provides an excellent resource which could be used to conduct a class project on planting a butterfly garden. Information is presented on how to create an environment that would attract butterflies. A large amount of information about the insect is also provided. Included are a bibliography and an index.

Suggested Use: BIO 20 - Diversity of Life
Other Uses: Middle Level Science

Canada's Farm Population (Print-Non-Fiction). Beyrouti, Monique and Marcelle Dion. (1986
Census of Canada - Focus on Canada). Statistics Canada (STATS), 1990. 31 p. Order No. 98-133
(\$10.00 pbk.)

In this study certain characteristics of the farm population are compared with those of the population at large, in order to highlight similarities as well as differences. This study does not show all the characteristics, but only some of those considered to be the most interesting. Included is a table of contents. French and English combined publication.

Suggested Use: BIO 20 - Ecological Organization

Canadian Social Trends (Print-Non-Fiction). Statistics Canada (STATS), 1990. ISSN 0831-5698
(\$34.00 yearly/four issues)

Canadian Social Trends offers a look at social change in Canada: what is happening, why it is happening, and the prospects for the future. The material is amply supported with photographs and colourful graphs, charts and tables. Population, Human Geography and Health; Women, Marriage, and the Family; Work, Leisure, and Social Problems are the major topics covered.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life|BIO 30 - Genetics, Animal Systems

Canadian Women in Science Series (Videotape). Spectra (MHP), Dup. Order No. V5028 - V5033
Included are six titles - 20 to 28 min. each.

Titles in the series include:

<i>Transplant Immunology</i>	Dup. Order No. V5028
<i>Atomic Particles</i>	Dup. Order No. V5029
<i>Nuclear Science</i>	Dup. Order No. V5030
<i>Climate Studies</i>	Dup. Order No. V5031
<i>Marine Engineering</i>	Dup. Order No. V5032
<i>Forestry Biotechnology</i>	Dup. Order No. V5033

Canadian Women in Science is a six-part series on women who have chosen careers in fields traditionally held by men. In each program they discuss the nature of their work, how they chose their particular speciality, and the challenge of balancing the discipline required of a scientific career with outside interests. There is Pat, a medical technologist in transplant immunology, whose work fulfils her sense of purpose; Sheila, who, after raising a family, re-entered the workplace to pursue a career in nuclear medicine; Sue, a graduate student whose research on the atmosphere reflects a life-long need "to know how things work and why;" and Anne, a new mother, maintaining a career in biotechnology. Climate researcher Arlene Arama advises students to make up their own minds regarding a career. Achievement in any area is possible, she believes, if you have the desire and determination.

Suggested Use: BIO 20 - Agricultural Botany|CHEM 20 - Chemical Reactions|PHYS 20 - Light
Other Uses: Science 10

Careers for the Future (Print-Non-Fiction). Ross, Judy. D.C. Heath (HTH), 1992. 88 p.
ISBN 0-669-95346-6 (\$9.95 pbk.)

Both male and female Canadians are interviewed about various aspects of their career choices. Questions posed such as, "Did you do your degree on a co-op program?" and "Where are the job opportunities in kinesiology?" may be used as examples for students interviewing people regarding careers. Information is given on organizations to contact for more information on each career. The one page "snap-shot" approach would be appealing to students. Included are a table of contents and a bibliography.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10|Wellness 10

Cell Biology. Vol. 1 (Videodisc). Coronet/MTI Film & Video (CFV), 1991. 14 min.
Order No. COR33000-VD (\$249.00)

The two programs on this disc include "The Living Cell" and "The Nucleus". The bar codes with the master script and review questions allow quick access to the information presented. Good microphotography of somatic cells and of one-celled organisms are presented. Included are disc and worthwhile discussion guide.

Suggested Use: BIO 20 - Introduction to Biology|BIO 30 - Cell Structure & Function

Chaos: Making a New Science (Print-Non-Fiction). Gleick, James. Penguin (PBC), 1987.
ISBN 0-1400-9250-1 (\$17.95 pbk.)

Chaos Theory is reshaping the fabric of the scientific establishment as mathematicians, physicists, biologists and chemists seek connections among different kinds of irregularity. This resource supports the way the Dimension of the Nature of Science is defined in the new science curricula as tentative and probabilistic. The Dimensions of the Processes of Science and the Values that Underlie Science are also well supported. This is a controversial theory as it presents a new paradigm for science. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 20 - Teacher Reference|BIO 30 - Teacher Reference|CHEM 20 - Teacher Reference|CHEM 30 - Teacher Reference|PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference
Other Uses: Mathematics|Economics

Chemcom. 2nd ed. (Print-Non-Fiction). American Chemical Society. Kendall Hunt (KHP), 1992.
14-15 p. ISBN 0-8403-5505-X (\$31.90 U.S. hdc.) ISBN 0-8403-5506-8 (\$43.90 U.S. hdc.)

Written in textbook style format, the major topics include water needs, chemical resources, petroleum,

food, nuclear chemistry, and chemistry, air and climate. Included are a table of contents, glossary and an index.

Suggested Use: BIO 30 - Chemical Basis of Life|CHEM 20 - Atoms & Elements|
CHEM 20 - Chemical Reactions, Organic Chemistry, Behaviour of
Gases|CHEM 30 - Energy Changes
Other Uses: Science 10

Chemical Activities (Print-Non-Fiction). Borgford, Christie L. and Lee R. Summerlin. American Chemical Society (BORE), 1988. 330 p. Order No. 68421-01 (\$38.50 teacher's edition)
Order No. 68421-00 (\$26.34 student edition pbk.)

Chemical Activities is an excellent source of activities for laboratory chemistry. An appreciation for the role of chemistry in solving environmental and social problems is fostered through a laboratory series involving 105 investigations. Sketches help to visualize some of the procedures. Teacher expertise is required to decide whether these activities are appropriate for the available facilities.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research
Other Uses: Science 10

Chemical Demonstrations: A Handbook for Teachers of Chemistry, Vol. 1 (Print-Non-Fiction). Shakhshiri, Bassam Z. University of Wisconsin (UOW), 1983. 343 p. ISBN 0-299-08890-1 (\$25.00 U.S. hdc.)

This resource provides demonstrations in thermochemistry, chemiluminescence, polymers plus colour and equilibria of metal ion precipitates and complexes. Teacher expertise is required.

Suggested Use: CHEM 20 - Organic Chemistry|CHEM 30 - Energy Changes in Chemical
Reaction|Solubility & Solutions

Chemical Demonstrations: A Handbook for Teachers of Chemistry, Vol. 2 (Print-Non-Fiction). Shakhshiri, Bassam Z. University of Wisconsin (UOW), 1985. 312 p. ISBN 0-299-10130-4 (\$25.00 U.S. hdc.)

Physical behaviour of gases, chemical behaviour of gases and oscillating chemical reactions are the topics covered in these demonstrations. Teacher expertise and competence is required in the use of this material.

Suggested Use: CHEM 20 - Behaviour of Gases|CHEM 30 - Equilibrium

Chemical Demonstrations: A Handbook for Teachers of Chemistry, Vol. 3 (Print-Non-Fiction). Shakhshiri, Bassam Z. University of Wisconsin (UOW), 1989. 401 p. ISBN 0-299-11950-5 (\$25.00 U.S. hdc.)

Extensive demonstrations for use in acid-base chemistry and liquids, solutions and colloids are provided. Key Science Concepts and Processes of Science are supported. Included is a table of

contents. Teacher expertise is required.

Suggested Use: CHEM 30 - Acid-Base Equilibria, Solubility & Solutions

Chemical Demonstrations: A Handbook for Teachers of Chemistry, Vol. 4 (Print-Non-Fiction). Shakhshiri, Bassam Z. University of Wisconsin (UOW), 1992. 290 p. ISBN 0-299-12860-1 (\$25.00 U.S.)

The demonstrations included in volume 4 focus on clock reactions and electrochemistry. Each demonstration is broken down into an overview of the demonstration, a list of materials, a hazards section, a disposal section, discussion on chemical phenomena and principles (including equations) plus a list of references. Support is given for Key Science Concepts and Processes of Science. This volume provides an index to all four volumes. Teacher expertise is required.

Suggested Use: CHEM 30 - Reaction Kinetics, Oxidation & Reduction

Chemical Demonstrations: A Sourcebook for Teachers. 2nd ed. Vol. 1 (Print-Non-Fiction). Summerlin, Lee R. and James L. Ealy. American Chemical Society (BORE), 1988. Order No. 64689-00 (\$42.24 pbk.)

Excellent activities and demonstrations are given in this resource. Information is provided on what each of 200 demonstrations show, how to do them, what the reactions are and how to prepare the solutions. Special safety instructions are given as hazardous materials are used in some demonstrations. Included are a table of contents and a bibliography.

Suggested Use: CHEM 20 - Organic Chemistry, Molecules & Compounds|CHEM 30-Solubility & Solutions, Energy Changes in Chemical Reactions
Other Uses: Science 10

A Chemical Engineer and the Puzzle of Alzheimer: A Video Interview with Regina Murphy (Videotape). (Scientists Speak Out). Hawkhill (HAI), 1991. 21 min. Order No. 503 (\$49.00 U.S.)

A female chemical engineer discusses the protein research involved in unlocking the puzzle of diseases such as cancer and Alzheimer's disease. Career issues of chemists and chemical engineers along with the struggles of women entering science careers are highlighted.

Suggested Use: BIO 30 - Chemical Basis of Life|Animal Systems|
CHEM 20 - General Reference|CHEM 30 - General Reference

Chemicals In Action (Print-Non-Fiction). Donovan, T.R., M.C. Poole, and D.J. Yack. Holt, Rinehart and Winston of Canada (HBJC), 1987. ISBN 0-03-921975-5 (\$35.35 hdc.)

This book is full of activities which would support the Processes of Science and the Scientific and Technical Skills. The material has many examples and illustrations of the Science-Technology-Society-Environment interrelationships. This a good resource to cover the chemistry basics in Science 10 as well as for students having difficulty with the concepts presented in Chemistry 20 and

Chemistry 30. A traditional textbook format is used. The section on electron orbitals should be screened before use. Included are a table of contents, glossary and an index.

Suggested Use: CHEM 20 - Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concepts and Stoichiometry, Consumer Chemistry, Organic Chemistry|CHEM 30 - Energy Changes in Chemical Reaction, Solubility & Solutions, Acid-Base Equilibria

Other Uses: Science 10

Chemistry: A First Course (Print-Non-Fiction). Rayner-Canham, G., et al. Addison-Wesley (BB), 1988. 594 p. BB 6337 (\$40.15 student edition hdc.) BB 6338 (\$66.60 instructor's resource book)

This text provides a good support for the DSLs. The teacher resource binder is considered an excellent resource no matter which student resources are being used. The women in science section may be especially useful. Included are a table of contents, glossary and an index.

Suggested Use: CHEM 20 - Introduction to Chemistry, Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concept & Stoichiometry, Behaviour of Gases, Organic Chemistry

Chemistry: A Second Course (Print-Non-Fiction). Rayner-Canham, G., et al. Addison-Wesley (BB), 1989. 759 p. BB 6339 (\$43.00 student edition hdc.) BB 6340 (\$43.00 Instructor's resource book)

Many Canadian chemists are featured in this resource. It provides a good to excellent support for the DSLs. Additional resources may be needed to support personal and social values and skills. The student edition is an excellent resource. The teacher's resource binder has excellent support materials, no matter which student resources are being used. Included are a table of contents, glossary and index.

Suggested Use: CHEM 30 - Review of Basic Principles, Energy Changes in Chemical Reactions, Reaction Kinetics, Equilibrium, Solubility & Solutions, Acid-Base Equilibria, Oxidation & Reduction

Chemistry and Crime (Print-Non-Fiction). Gerber, Samuel M. American Chemical Society (AMCS), 1983. 135 p. ISBN 0-8412-0784-4 (\$19.95 U.S. hdc.) ISBN 0-8412-0785-2 (\$16.95 U.S. pbk.)

Gerber presents fictional works which describe crimes made possible by the criminals' knowledge of chemistry and crimes solved by the sleuths' knowledge of chemistry. There are charts which have useful information pertaining to the subject being discussed. This may be of special interest to some students; however, it should be noted that American statistics prior to 1983 are used.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research

Chemistry Around You (Print-Non-Fiction). Tocci, Salvatore. Prentice Hall (PRN), 1985. 186 p. ISBN 0-668-06033-6 (\$13.95 pbk.)

The author provides an excellent section on food and food additives. Students could use the information as support for experiments involving analysis of chemicals in a multitude of everyday home products such as tap water, medication, soaps, detergents and garbage. There are lots of ideas for students who are looking for a project. Included are a table of contents, glossary and an index.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research
Other Uses: Science 10

Chemistry Counts (Print-Non-Fiction). Hill, Graham. Hodder and Stoughton (PIP), ISBN 0-340-506598 (\$24.75 teacher's handbook)

Many good colour pictures and diagrams are used by Hill to show applications of chemistry in the everyday world. Although it is from a British perspective, the material would be interesting reading for most students. Chemistry in the everyday world is explained very well in relation to Key Science Concepts and the STSE Interrelationships.

Suggested Use: CHEM 20 - Introduction to Chemistry, Independent Research, Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concept & Stoichiometry, Behaviour of Gases, Consumer Chemistry, Organic Chemistry, Teacher Developed Unit|CHEM 30 - Review of Basic Principles, Independent Research, Energy Changes in Chemical Reactions, Reaction Kinetics, Equilibrium, Solubility & Solutions, Acid-Base Equilibria, Oxidation & Reduction, Case Study
Other Uses: Science 10

Chemistry: The Salter's Approach (Print-Non-Fiction). Hill, Graham, et al. Heinemann (IRW), 1989. 218 p. ISBN 0-43564-000-3 (\$28.35 pbk.)

This is a consumer book full of everyday applications of chemistry. It is an excellent resource book for science projects with many ideas and suggestions. This material may also be useful for reviewing principles and concepts that have been discussed in class. The effects of plastic waste are presented only from an economic perspective. Other effects on people and animals are not discussed. There is an excellent use of illustrations. This resource covers the DSLs. Included are a table of contents and an index.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research
Other Uses: Science 10

Chemistry Unit: Petrochemicals (Print-Non-Fiction). Mustoe, Frank J. (Environmental Literacy). Key Foundation (KYF), 1992. 42 p. No order no. needed (\$4.00 pbk.)

A review of the extent and importance of the petrochemical industry in Canada is presented in this module. Many colourful illustrations are used. Included are a table of contents and a glossary.

With multiple copy purchase, teacher's guide is available free on computer disc in IBM or Macintosh

format. Please specify format when ordering. For workshop information phone (705) 726-2276 or write to the address listed in the distributor directory.

Suggested Use: CHEM 20 - Organic Chemistry

Chemists at Work (Videotape). Hawkhill (HAI), 1986. 42 min. (\$99.00 U.S.)

The "fun" of making discoveries in chemistry is emphasized. Part 1 consists of short snap shots of the history and development of chemistry. In Part 2 male and female scientists discuss their work and their projects. An overview of future possibilities in chemical research projects is given. The three sections could be used independently of the others in a sequence of classes.

Suggested Use: CHEM 20 - Introduction to Chemistry

Chromosomes and Genes In Action (Microslides). (BORE), ISBN 79703-81 (\$5.94 set of 8 Photomicrographs)

The topics in this set include:

1. DNA molecule - em (55,000X)
2. Coiling in chromosomes - wm (2,000X)
3. Lamp brush chromosomes - phase contract (700X)
4. Loop of lamp brush chromosome - em (9,000 and 15,000X)
5. Giant chromosomes - wm (1,000X)
6. Chromosome puffs - st (250X), tagged (250X)
7. Nuclear pores - em (50,000X)
8. Ribosomes - em (85,000X)

Microslides require use of microslide viewer (Contact BORE)

Suggested Use: BIO 30 - Genetics

The Circulatory System (Print-Non-Fiction). Avraham, Regina. (The Encyclopedia of Health - The Healthy Body). Chelsea House (NEL), 1989. 110 p. ISBN 0-7910-0013-3 (\$24.99 hdc.)

This book provides extensive information on the circulatory system. Historical information on heart study is presented. Topics include understanding the heart, blood, blood vessels, and some common heart problems and their treatment. A chapter on preventing heart disease is also included. Black and white illustrations are used. Support for Key Science Concepts is given through the factual information presented for teaching about the circulatory system. Support is also provided for Scientific and Technical Skills and Science-Related Interests and Attitudes by describing the history of the technological advances in the area of heart disease. The clear readability of the material makes it ideal for student use.

Suggested Use: BIO 30 - Animal Systems
Other Uses: Science 10

Claiming the Future: The Inspiring Lives of Twelve Canadian Women Scientists and Scholars/Se Batir Un Avenir (Print-Non-Fiction). Royal Society of Canada. Pembroke (PPL), 1991. 96 p. ISBN 0-921217-71-4 (\$9.95 pbk.)

Twelve Canadian women who are or have been employed as scientists, plus an Aboriginal female lawyer, an art historian and a literary historian are profiled. Two to three page biographies, each with a picture of the subject, are included. The ability to persevere in spite of hindrances is shown. Advice from each person is given to the reader. Two women from Saskatchewan are featured.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

Other Uses: Middle Level Science, Science 10

Cloning and the New Genetics (Print-Non-Fiction). Hyde, Margaret O. and Lawrence E. Hyde. Enslow (MEA), 1984. 128 p. ISBN 0-89490-084-6 (\$29.95 hdc.)

Information is presented on trends in genetics. Strengths of the material include its historical content and its usefulness in emphasizing the creative-technological relationship between biogenetic research and its benefit to society. This is not a quick reference book, but one which interested students may be motivated to read. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 30 - Genetics

Clouds In a Glass of Beer (Print-Non-Fiction). Bohren, Craig F. (Wiley Science Editions). John Wiley and Sons (WIL), 1987. 195 p. ISBN 0-471-62482-9 (\$20.95 pbk.)

This book uses the principles of physics to help readers understand why many natural phenomena occur. This material may provide students with ideas for science fair projects or independent study projects.

Suggested Use: PHYS 20 - Science Challenge, Physics of Everyday Things|
PHYS 30 - Science Challenge

Other Uses: Science 10

Cold Fusion: The Making of a Scientific Controversy (Print-Non-Fiction). Peat, F. David. Contemporary Books (FHW), 1989. ISBN 0-8092-4243-5 (\$21.50 hdc.)

The author examines the controversy that shook the scientific community when in May of 1989, Pons and Fleischman announced their "cold fusion" discovery. The turmoil that followed, with conferences, and attempts at replication is described. The book reveals something of the Nature of Science Dimension and shows what can happen when the media reports an event before scientific "due process" has had an opportunity to verify or refute a discovery. The material has a high suspense level. Science-Technology-Society-Environment Interrelationships are developed extremely well.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research|
PHYS 30 - Nuclear Physics

Other Uses: Science 10

Common Weeds of Canada (Print-Non-Fiction). Mulligan, Gerald A. NC Press (UTP), 1989. ISBN 0-920053-59-9 (\$16.95 pbk.)

Information is presented on propagation methods, geographical origin, preferred habitat and blossoming periods of some Canadian weeds. Pictures of the weeds in their habitat are included which are not always as clear as line drawings or weeds on a neutral background might be.

Suggested Use: BIO 20 - Ecological Organization

The Complete Handbook of Science Fair Projects (Print-Non-Fiction). Bochinski, Julianne Blair. (Wiley Science Editions). John Wiley & Sons (WIL), 1991. 206 p. ISBN 0-471-52728-9 (\$15.50 pbk.) ISBN 0-471-52729-7 (\$34.95 hdc.)

This is an excellent handbook for conducting and organizing science fairs. It is a good guide to the planning and execution of a science fair project. The book contains descriptions of 50 science fair projects, that may serve as an inspiration for those having a difficult time getting started. One strong feature of this book is the description of award winning science fair projects. Included are a table of contents, glossary and an index.

Suggested Use: BIO 20 - Various Options|BIO 30 - Various Options|CHEM 20 - Independent Research|CHEM 30 - Independent Research|PHYS 20 - Science Challenge|PHYS 30 - Science Challenge
Other Uses: Science 10

Concepts In Science Series (Videotape). TVOntario (MHP), 1988. 102 - 10 min. programs Order No. V02788 - V02889. 17 teacher's guides. (BB) Order No. varies (\$3.30 each)

Various topics in chemistry, biology and physics are covered. The series is highly recommended. Check the "Possible Starting Points for Acquiring Resources" section in this bibliography for information on pricing discounts for duplication of series from Media House Productions.

Titles in this series include:	Dup. Order No.	Curriculum fit
Cellular Respiration - Glycolysis 1	V02789	BIO 30 - Cell Structure & Function
Cellular Respiration - Glycolysis 2	V02790	BIO 30 - Cell Structure & Function
Cellular Respiration - Metabolism & Nutrition	V02793	BIO 30 - Cell Structure & Function
Cellular Respiration - Oxidative Phosphorylation	V02792	BIO 30 - Cell Structure & Function
Cellular Respiration - The Cell & Energy	V02788	BIO 30 - Cell Structure & Function
Cellular Respiration - The Krebs Cycle	V02791	BIO 30 - Cell Structure & Function
Chemical Equilibrium - Dynamic Equilibrium	V02825	CHEM 30 - Equilibrium
Chemical Equilibrium - Reaction Kinetics	V02826	CHEM 30 - Reaction Kinetics
Chemical Equilibrium - Reaction Tendencies	V02827	CHEM 30 - Reaction Kinetics
Chemical Equilibrium - The Equilibrium Constant	V02828	CHEM 30 - Equilibrium
Chemical Equilibrium - The Haber Process	V02829	CHEM 30 - Equilibrium
Chemical Equilibrium - Unsteady Steadiness	V02824	CHEM 30 - Equilibrium
Electricity - Current Electricity	V02863	PHYS 30 - Electricity
Electricity - Potential Difference	V02864	PHYS 30 - Electricity
Electricity - Resistance	V02865	PHYS 30 - Electricity
Electrochemistry - Commercial Electrochemical Cells	V02833	CHEM 30 - Oxidation & Reduction

Electrochemistry - Corrosion	V02834	CHEM 30 - Oxidation & Reduction
Electrochemistry - Designing Electrochemical Cells	V02832	CHEM 30 - Oxidation & Reduction
Electrochemistry - Electrochemical Cells	V02831	CHEM 30 - Oxidation & Reduction
Electrochemistry - Electroplating	V02835	CHEM 30 - Oxidation & Reduction
Electrochemistry - The Building Blocks of Electro-chemistry	V02830	CHEM 30 - Oxidation & Reduction
Electromagnetism - Domain Theory	V02868	PHYS 30 - Electricity
Electromagnetism - Earth's Magnetic Field	V02866	PHYS 30 - Electricity
Electromagnetism - Electromagnetic Induction	V02870	PHYS 30 - Electricity
Electromagnetism - Life in the Field	V02871	PHYS 30 - Electricity
Electromagnetism - Magnetism and Electron Flow	V02867	PHYS 30 - Electricity
Electromagnetism - The Motor Principle	V02869	PHYS 30 - Electricity
Electron Arrangement & Bonding-Electron Arrangement	V02838	CHEM 20 - Molecules & Compounds
Electron Arrangement & Bonding - How Atoms Bond	V02839	CHEM 20 - Molecules & Compounds
Electron Arrangement & Bonding - Introducing the Players	V02836	CHEM 20 - Molecules & Compounds
Electron Arrangement & Bonding - Metals & Ionic Solids	V02841	CHEM 20 - Molecules & Compounds
Electron Arrangement & Bonding - The Rutherford-Bohr Atom	V02837	CHEM 20 - Molecules & Compounds
Electron Arrangement & Bonding - Molecular Substance & Covalent Crystals	V02840	CHEM 20 - Molecules & Compounds
Energy Flow - Energy Flow at the Cellular Level	V02797	BIO 30 - Cell Structure & Function
Energy Flow - Energy Flow in Agriculture	V02798	BIO 20 - Ecological Organization
Energy Flow - Energy Flow in the Biosphere	V02799	BIO 20 - Ecological Organization
Energy Flow - Energy Flow in the Ecosystem	V02796	BIO 20 - Ecological Organization
Energy Flow - Photosynthesis	V02795	BIO 30 - Cell Structure & Function
Energy Flow - The Concepts of Energy	V02794	BIO 20 - Ecological Organization
Homeostasis - Biochemical Balance	V02804	BIO 30 - Animal Systems
Homeostasis - Coping with Change	V02800	BIO 30 - Animal Systems
Homeostasis - Hormonal Control	V02805	BIO 30 - Animal Systems
Homeostasis - Osmoregulation	V02802	BIO 30 - Animal Systems
Homeostasis - The Feedback Cycle	V02803	BIO 30 - Animal Systems
Homeostasis - The Sea Within	V02801	BIO 30 - Animal Systems
The Mole Concept - Avogadro's Hypothesis	V02845	CHEM 20 - Mole Concept & Stoichiometry
The Mole Concept - Combining Gas Volumes	V02844	CHEM 20 - Behavior of Gases
The Mole Concept - Gas Volumes	V02843	CHEM 20 - Behavior of Gases
The Mole Concept - Relative Atomic Mass	V02846	CHEM 20 - Atoms & Elements
The Mole Concept- Relative Mass	V02842	CHEM 20 - Atoms & Elements
The Mole Concept - The Mole	V02847	CHEM 20 - Atoms & Elements

Nuclear Physics-Electrical Energy from Fission	V02876	PHYS 30 - Nuclear Physics SCI 10 - Uranium
Nuclear Physics-Natural Transmutations	V02874	PHYS 30 - Nuclear Physics SCI 10 - Uranium
Nuclear Physics - Nuclear Byproducts	V02877	PHYS 30 - Nuclear Physics SCI 10 - Uranium
Nuclear Physics-Properties of Becquerel Rays	V02873	PHYS 30 - Nuclear Physics
Nuclear Physics-The Discovery of Radioactivity	V02872	PHYS 30 - Nuclear Physics
Organic Chemistry 1: Carbon Bonding	V02850	CHEM 20 - Molecules & Compounds
Organic Chemistry 1: Carbon the Compromiser	V02848	CHEM 20 - Molecules & Compounds Chemical reactions
Organic Chemistry 1: Fixing Fuels	V02851	CHEM 20 - Organic Chemistry
Organic Chemistry 1: Harvest of Enzymes	V02853	BIO 30 - Animal Systems
Organic Chemistry 1: Polyethylene	V02852	CHEM 20 - Introduction to Chemistry, Organic Chemistry
Organic Chemistry 1: The Shape of Carbon	V02849	CHEM 20 - Atoms & Elements
Organic Chemistry 2: ASA	V02857	CHEM 20 - Introduction to Chemistry Organic Chemistry
Organic Chemistry 2: Cosmetics	V02858	CHEM 30 - Independent Research CHEM 20 - Independent Research
Organic Chemistry 2: Fibres	V02854	CHEM 30 - Independent Research CHEM 20 - Independent Research
Organic Chemistry 2: Glues	V02856	CHEM 20 - Chemical Reactions Organic Chemistry, CHEM 20/30 - Independent Research
Organic Chemistry 2: Life After Chemistry	V02859	CHEM 20/30 - Independent Research BIO 20 - Ecological Organization
Organic Chemistry 2: Soaps	V02855	CHEM 20 - Molecules & Compounds
Organic Evolution - Darwin, Naturally	V02807	BIO 20 - Introduction
Organic Evolution - Factoring in Mendel	V02808	BIO 30 - Genetics
Organic Evolution - In the Beginning	V02806	BIO 30 - Evolution
Organic Evolution - Mutation And All That	V02811	BIO 30 - Genetics, Evolution
Organic Evolution - The Meiotic Mix	V02809	BIO 30 - Genetics, Evolution
Organic Evolution - The Population Picture	V02810	BIO 30 - Evolution
Photosynthesis - Absorbing The Light	V02813	BIO 30 - Cell Structure & Function
Photosynthesis - C3 & C4 Plants	V02816	BIO 30 - Cell Structure & Function
Photosynthesis - Seeing The Light	V02812	BIO 30 - Cell Structure & Function
Photosynthesis - The Dark Reaction	V02815	BIO 30 - Cell Structure & Function
Photosynthesis - The Fluid Transport System	V02817	BIO 30 - Cell Structure & Function
Photosynthesis - The Light Reaction	V02814	BIO 30 - Cell Structure & Function
Protein Synthesis - DNA Replication: The Repeating Formula	V02820	BIO 30 - Chemical Basis of Life, Genetics

Protein Synthesis - DNA The Molecule of Heredity	V02819	BIO 30 - Chemical Basis of Life, Genetics
Protein Synthesis - Protein: The Stuff of Life	V02818	BIO 30 - Chemical Basis of Life, Genetics
Protein Synthesis - RNA Synthesis: The Genetic Messenger	V02821	BIO 30 - Chemical Basis of Life, Genetics
Protein Synthesis - Ribosomal RNA: The Protein Maker	V02823	BIO 30 - Chemical Basis of Life, Genetics
Protein Synthesis - Transfer RNA: The Genetic Messenger	V02822	BIO 30 - Chemical Basis of Life, Genetics
Structure of the Atom - Smaller Than the Smallest	V02879	CHEM 20 - Atoms & Elements PHYS 30 - Atomic Physics
Structure of the Atom - Spectra	V02882	CHEM 20 - Atoms & Elements PHYS 30 - Atomic Physics
Structure of the Atom - The Bohr Model	V02881	CHEM 20 - Atoms & Elements PHYS 30 - Atomic Physics
Structure of the Atom - The Earliest Models	V02878	CHEM 20 - Atoms & Elements PHYS 30 - Atomic Physics
Structure of the Atom - The Rutherford Model	V02880	CHEM 20 - Atoms & Elements PHYS 30 - Atomic Physics
Structure of the Atom - The Wave-Mechanical Model	V02883	CHEM 20 - Atoms & Elements PHYS 30 - Atomic Physics
Wave-Particle Duality - Matter Waves	V02889	PHYS 20 - Waves
Wave-Particle Duality - Photons	V02888	PHYS 20 - Waves
Wave-Particle Duality - The Electromagnetic Model	V02886	PHYS 20 - Waves
Wave-Particle Duality - The Particle Model	V02884	PHYS 20 - Waves
Wave-Particle Duality - The Quantum Idea	V02887	PHYS 20 - Waves
Wave-Particle Duality - The Wave Model	V02885	PHYS 20 - Waves
Suggested Use:	BIO 20 - Introduction, Ecological Organization BIO 30 - Animal Systems, Genetics, Cell Structure & Function, Evolution, Chemical Basis of Life CHEM 20 - Introduction to Chemistry, Independent Research, Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concept & Stoichiometry, Behaviour of Gases, Organic Chemistry, Teacher Developed Unit CHEM 30 - Independent Research, Reaction Kinetics, Equilibrium, Oxidation & Reduction PHYS 20 - Waves PHYS 30 - Nuclear Physics, Electricity, Atomic Physics	
Other Uses:	Science 10	

Conceptual Physics: A High School Physics Program. 2nd ed. (Print-Non-Fiction).
Hewitt, Paul G. Addison Wesley (ADD), 1992. 660 p. ISBN 0-201-28651 (\$43.10 student edition)
ISBN 0-201-18652-X (\$53.35 Teachers edition)

This recommended resource is a very readable text with many diagrams which help simplify complex

concepts. It has a unique approach to physics with very little emphases on algebra and math problem solving. It is highly concept oriented. This is considered a "must" for students and teachers who have difficulty reading traditional texts. The supplementary material is highly recommended. It is a good to excellent support for the DSLs with the exception of the Values That Underlie Science.

Suggested Use: PHYS 20 - Waves, Light, Sound, Heat|PHYS 30 - Kinematics & Dynamics,
Momentum, Mechanical Energy, Fluid Mechanics, Electricity, Nuclear Physics
Other Uses: Middle Level Science - Teacher Reference

A Concise Dictionary of Biology. New ed. (Print-Non-Fiction). Oxford University (OUP), 1990.
266 p. ISBN 0-19-286109-3 (\$11.50 pbk.)

This resource is a dictionary of biological and biochemical terms. Entries related to geology that are required for an understanding of paleontology and a few entries related to physics and chemistry that are required for an understanding of the physical and chemical aspects of biology are included. In this edition, new terms in genetics, molecular biology and immunology have been added. The material is easy to read and understand. Some of the over 2,500 entries are cross-referenced. Some illustrations are used.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference

A Concise Dictionary of Chemistry. New ed. (Print-Non-Fiction). Oxford University (OUP), 1990.
314 p. ISBN 0-19-286110-7 (\$13.95 pbk.)

Terms related to chemistry including "physical" and "biochemistry" comprise the over 3,000 entries. New terms reflecting advances in techniques, concepts and materials have been incorporated into this new edition. Cross referencing and only a few illustrations are used.

Suggested Use: CHEM 20 - General Reference|CHEM 30 - General References

A Concise Dictionary of Physics. New ed. (Print-Non-Fiction). Oxford University (OUP), 1990.
308 p. ISBN 0-19-286111-5 (\$13.95 pbk.)

The over 2,700 entries include terms from mathematics, astrophysics, metallurgy, electronics and physical chemistry which are pertinent to the study of physics. Nuclear and particle, quantum theory and solid state physics terms are added to this new edition. Cross-referencing and a limited number of illustrations are used.

Suggested Use: PHYS 20 - General Reference|PHYS 30 - General Reference

Consumer Chemistry: Projects for Young Scientists (Print-Non-Fiction). Newton, David E.
(Projects for Young Scientists). Franklin Watts (GRO), 1991. 112 p. ISBN 0-531-11011-7
(\$17.50 hdc.)

This interesting book contains experiments that examine the chemistry of such common consumer goods as food, cosmetics, detergents, soil, antacids, and fibres. Experiments are clearly detailed and many include illustrations of how to arrange the equipment. Black-and-white photographs depict male

and female students using proper laboratory techniques. Safety procedures are well explained, and warnings about potentially dangerous chemicals or procedures are clearly boxed at the beginning of relevant experiments. A section on special laboratory techniques, such as titrations and water baths, is included.

Suggested Use: CHEM 20 - Consumer Chemistry, Independent Research|CHEM 30
Independent Research
Other Uses: Middle Level Science

Contemporary Readings for General Biology. 3rd ed. (Print-Non-Fiction). Crane, John W. Wadsworth (NEL), 1989. 152 p. ISBN 0-534-13376-1 (\$15.95 pbk.)

This title is a compilation of 24 scientific papers and articles on topics such as cell biology, genetics, plant systems, animal systems, evolution, diversity of life, ecology and behaviour. The articles focus on the social and ethical issues created by the impact of the biological sciences. This is considered to be an interesting, excellent resource, especially for creative teachers who want to make classes interesting and relevant for students. Some material may be dated and will need to be supplemented by current journal articles. Included is a table of contents.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life, Agricultural Botany|
BIO 30 - Genetics, Animal Systems, Evolution

Coulumb and Millikan (Software). MacQueen, Ron. Ron MacQueen (RON), 1987.

Contents: 1 disk, 1 teachers guide \$49.95/package (There is a two package price of \$79.95 for this title and *Falling Through Air*)

System Requirements: Apple IIe, 48K, 5 1/4", colour or b/w monitor, joystick, game paddle.

Students could use this highly recommended program to determine the relationship between force and distance. The students would need to have prior knowledge about the topic. The program is meant to simulate an experiment which would be extremely difficult to do in a classroom and obtain accurate results. Little background theory is provided, but the program is easy to use.

Suggested Use: PHYS 30 - Electricity, Atomic Physics

Crystals and Crystal Growing (Print-Non-Fiction). Heelden, Allan and Phylis Morrison. The MIT Press (BORE), 1982. 318 p. Order No. 64673-00 (\$14.34 pbk.)

This is a very informative book about solutions, solubility, crystals and the structures of solids. Solubility diagrams plus methods and recipes for growing crystals are provided. Included are a table of contents and index.

Suggested Use: CHEM 20 - Molecules & Compounds|CHEM 30 - Solubility & Solutions
Other Uses: Science 10

Crystals and Lasers: Applications of Lasers (Videotape). Films for the Humanities and Sciences (FFH), 1989. 58 min. (\$149.00 U.S.)

A lecture presentation demonstrating activities involving laser technology provides a humorous, interesting program on "real life" uses of lasers. An explanation of holograms is given. This is useful in support of STSE Interrelationships. The tape could be shown in segments.

Suggested Use: PHYS 20 - Light

The Dancing Wu Li Masters: An Overview of the New Physics (Print-Non-Fiction). Zukav, Gary. Bantam Books (BAN), 1979. 305 p. ISBN 0-553-26382-X (\$6.95 pbk.)

Zukav has written an easy to read guide for those who are curious about the mind-expanding discoveries of advanced physics, but who have no scientific background. Non-mathematical explanations are used. It is highly recommended for all adults to read. This book mainly attempts to teach readers a new paradigm for perceiving various phenomena. Zukav uses a historical development to prepare the reader for the eventual presentation. The DSLs of the Nature of Science, Processes of Science, STSE Interrelationships and Values that Underlie Science are supported.

Suggested Use: PHYS 30 - Teacher Reference

Deforestation & "Development" (Print-Non-Fiction). Schneider, Aaron, ed. Centre for International Studies (UCC), 1989. 251 p. ISBN 0-920336-21-3 (\$19.95 pbk.)

In this highly recommended resource the biological, social and economic consequences of deforestation are given in a world context. There is great detail on Canada's current trend of deforestation with 250 pages of thought provoking articles. Included are a table of contents and a bibliography.

Suggested Use: BIO 20 - Ecological Organization

The Digestive System (Print-Non-Fiction). Avraham, Regina. (The Encyclopedia of Health - The Healthy Body). Chelsea House (NEL), 1990. 99 p. ISBN 0-7910-0015-X (\$24.99 hdc.)

The digestive process is examined from the viewpoint of historical medical discoveries, the role of nutrients in the body, the process of digestion and the role of various organs, digestive disorders and their treatments. A general treatment of the subject is given; an in-depth analysis is not present. The emphasis in the material seems to be on promoting lifestyle changes in individuals that encourage 'good health'. The material supports Key Science Concepts as it provides a factual account of the structure and function of the human digestive system. Support is also given for STSE Interrelationships and Values that Underlie Science as it touches on technological and medical advances.

Suggested Use: BIO 30 - Animal Systems
Other Uses: Science 10

DNA: Laboratory of Life (Videotape). National Geographic (NGS), 1985. 21 min. Order No. C51048 (\$107.55)

An excellent simulation of the DNA structure is provided. The connection between pure research and technological advances is shown. There is a bias in the presentation toward regulating genetic engineering.

Suggested Use: BIO 30 - Genetics

DNA: The Thread of Life (Print-Non-Fiction). Wilcox, Frank H. (Discovery Series). Lerner (GRO), 1988. 80 p. ISBN 0-8225-1584-9 (\$16.50 hdc.)

This is a simple, clearly written account of the functions of DNA in organisms and its place in the cell. The material could be useful for review or as remedial reading.

Suggested Use: BIO 30 - Genetics

The Double Helix: A Personal Account of the Discovery of the Structure of DNA (Print-Non-Fiction). Watson, James D. New American Library (PBC), 1968. 143 p. ISBN 0-451-62787-3 (\$6.99 pbk.)

James Watson writes a personal account of how the structure of the DNA molecule was developed. The author gives an insight into the Processes of Science and the process of model building occurring in this historic example. This excellent account destroys many of the myths around "how scientists work".

Suggested Use: BIO 30 - Genetics

Drinking Water Hazards (Print-Non-Fiction). Stewart, John Cary. Envirographics (ENV), 1990. 323 p. ISBN 0-943163-16-1 (\$21.95 hdc.) ISBN 0-943163-15-3 (\$14.95 pbk.)

This is a good resource for students who want to do an in-depth analysis or description of water chemistry. It summarizes water's importance to the earth and details pollutants in water. Suggestions on how water can be tested and treated for all pollutants are made. Caution is advised in use of some glossary definitions. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Ecological Organization|CHEM 20 - Independent Research|CHEM 30 - Independent Research

Other Uses: Science 10

Ecology and Our Endangered Life - Support Systems (Print-Non-Fiction). Odum, Eugene P. Sinauer (SAIP), 1989. 283 p. ISBN 0-87893-635-1 (\$17.95 pbk.)

For a teacher of Biology 20 with little background on ecology, this is an excellent resource. It would also serve well for students who are good readers and want an explanation in another style from their

textbook. This book is a revision of the author's university level ecology textbook, written to communicate the issues of the environment to the public. This resource provides support for the DSLs.

Suggested Use: BIO 20 - Ecological Organization|BIO 30 - Evolution
Other Uses: Science 10|Middle Level Science

The Economics of Wild Rice Farming In Northern Saskatchewan (Print-Non-Fiction).
Saskatchewan Agriculture Soils & Crops Branch (SAAF), 1989. (Free of charge)

A half-page written overview and numerous colourful graphs comprise the brochure. This analysis is intended to provide wild rice growers with a good understanding of the capital costs for production as well as an idea of the revenue that could result from the operation. The model estimates the break-even cost of production. It should not be used to predict the economic size of a family farm.

Note: Imperial units have been retained in this report since these are still widely used in the region.

Suggested Use: BIO 20 - Agricultural Botany

EDIT Series (Print-Non-Fiction). Tooke, Moyra (ed.). Teachers' Press (TCH)

See specific titles listed in this bibliography:

- Biotechnology
- Harvest of Sand. Desertification and Land Degradation
- Industry and Environment: Today's Pollution Dilemma
- South Moresby
- Wilderness and Wildlife: Issues of Conservation and Preservation
- The World's Wetlands

Einstein's Universe: A Guide to the Theory of Relativity (Print-Non-Fiction). Calder, Nigel.
Penguin Books (PBC), 1991. 254 p. ISBN 0-14-0135162 (\$12.95 pbk.)

While this is an excellent resource about general relativity and current cosmology, it lacks colour and visual stimulation. The topic is exciting, but difficult for all but the elite of physics students. It may be appropriate for enrichment purposes for very advanced physics students in grade 12 or for teacher reference. Included are a table of contents and an index.

Suggested Use: PHYS 30 - Atomic Physics

The Electric Chemistry Building, Phase I: Inorganic Chemistry; Phase II: Physical Chemistry; Phase III: Organic Chemistry (Software). Snowbird Software (SBS), 1990.
(\$199.00 each)

System requirements: IBM or compatible, two disk drives, 256K/640K (organic) of memory and a colour graphics card. A colour monitor is preferred.

The Electric Chemistry Building series is a large scale microworld simulation of a group of

chemistry laboratories, each representing a major subdivision of inorganic, physical or organic chemistry. The thrust of the learning experience is to have the students move from room to room, utilizing the simulated facilities including chemicals and controllable conditions. The experiments in these explorations may be designed by the students themselves, or assigned by the teacher. The organic chemistry may be somewhat complex for high school students.

Suggested Use: CHEM 20 - Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concept & Stoichiometry, Behaviour of Gases, Organic Chemistry|
CHEM 30 - Acid-Base Equilibria, Independent Research, Oxidation & Reduction, Reaction Kinetics

Encyclopedia of Animal Behaviour (Print-Non-Fiction). Slater, Peter J.B. Facts on File (CMG), 1987. 144 p. ISBN 0-8160-1816-2 (\$37.95 hdc.)

Slater presents a very interesting collection of topics, showing the diversity of life and behaviour. The topics include courtship, aggression display, navigation and innate rhythm (biorhythm) with an interesting section on the evolution of behaviour. This could be a very good resource for projects, essays, etc. Observation and experimentation are shown to be basic to science. This book could be used to develop all the DSLs to some degree. Excellent photography is used.

Suggested Use: BIO 20 - Diversity of Life|BIO 30 - Animal Systems

The Encyclopedia of Animal Biology (Print-Non-Fiction). McNeill, Alexander, R., ed. Facts on File Publications (CMG), 1987. 144 p. ISBN 0-8160-1817-0 (\$37.95 hdc.)

A delightful book full of excellent pictures and diagrams, in which the text not only describes organisms, but also outlines their classification and modifications to previous group adaptations. A host of information on special features that describe development of a certain structure or organ is also provided. Key Science Concepts and the Processes of Science are supported by this material. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Diversity of Life|BIO 30 - Animal Systems
Other Uses: ML Science

The Encyclopedia of Animal Evolution (Print-Non-Fiction). Berry, R.J. and A. Hallam, eds. Facts on File (CMG), 1987. 144 p. ISBN 0-8160-1819-7 (\$37.95 hdc.)

This very good encyclopedia is structured as a fact and an information giving resource. It has excellent illustrations. It supports all of the DSLs to some degree, but the main thrust is the Key Science Concepts.

Suggested Use: BIO 30 - Evolution

The Encyclopedia of Evolution: Humanity's Search for Its Origin (Print-Non-Fiction). Milner, Richard. Facts on File (CMG), 1990. 481 p. ISBN 0-8160-1472-8 (\$55.00 hdc.)

Information on evolution is structured in an encyclopedia format. Short explanations which range up

to three pages in length cover concepts and people. Some black and white illustrations are used. Further reading is given for many entries. Some cross referencing is used.

Suggested Use: BIO 30 - Evolution

The Encyclopedia of Animal Ecology (Print-Non-Fiction). Moore, Peter D. Facts on File (CMG), 1987. 144 p. ISBN 0-8160-1818-9 (\$37.95 hdc.)

For teachers looking for an excellent, easy to read resource on animal ecology, this resource explains the background to ecology, describes the major biomes around the world and gives an overview of the relationship of humans to the world's biomes and the impact of humans on various ecosystems. The aims are clearly described and colourful illustrations are well laid out.

Suggested Use: BIO 20: Ecological Organization

Endangered Spaces: The Future for Canada's Wilderness (Print-Non-Fiction). Hummel, Monte. (Henderson Book Series No. 11). Key Porter Books (KEY), 1989. 288 p. ISBN 1-55013-101-X (\$39.95 hdc.)

This excellent collection of essays is organized into three sections: learning from the past; the state of wilderness today; and prospects for the future. Various authors, activists and environmentalists discuss their views about Canada's wilderness. George Erasmus of the Assembly of First Nations and others provide some insight into Aboriginal viewpoints on this issue. Key Science Concepts, STSE Interrelationships and the Values that Underlie Science are supported by this material.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life|BIO 30 - Various Options

The Endocrine System (Print-Non-Fiction). Little, Marjorie. (The Encyclopedia of Health - The Healthy Body). Chelsea House (NEL), 1990. 111 p. ISBN 0-7910-0016-8 (\$24.99 hdc.)

Factual information about various glands which form the endocrine system are provided. The interconnections, functions and results of malfunctions of the glands provide support for Key Science Concepts and STSE Interrelationships. The book is easy to read with up to date references to AIDS, steroids and Ben Johnson.

Suggested Use: BIO 30 - Animal Systems
Other Uses: Science 10|Health 9

Energy and Society (Videotape). Hawhill (HAI), 1990. 35 min. (\$69.00 U.S.)

Part 1 gives a short history of energy and society. Part 2 discusses energy for today and tomorrow. This video provides excellant support for STSE Interrelationships. It is a very interesting presentation that promotes critical thinking.

Suggested Use: PHYS 20 - Heat
Other Uses: Science 10|Teacher Reference for Elementary and Middle Level Science

Energy From Efficiency: A Video Interview with Amory Lovins (Videotape). Hawkhill (HAI), 1991. 16 min. Order No. 505 (\$49.00 U.S.)

An interview format is used to discuss how energy could be used more efficiently with emerging technologies and the use of renewable energy sources.

Suggested Use: PHYS 20: Heat
Other Uses: Science 10

Energy From Nuclear Fusion: A Video Interview with Gregory Moses and Leon Shohet (Videotape). Hawkhill (HAI), 1991. 16 min. Order No. 504 (\$49.00 U.S.)

The video presents an interview with two physicists currently involved in research into nuclear fusion. The potential of fusion reactors, a comparison between fusion and fission, and different types of fusion research are some of the topics covered.

Suggested Use: PHYS 30 - Atomic Theory

Entertaining Science Experiments with Everyday Objects (Print-Non-Fiction). Gardner, Martin. Dover (GNP), 1981. 127 p. ISBN 0-486-24201-3 (\$4.25 pbk.)

This material would serve as a teacher reference for both middle and secondary science and as a source for both student activities and teacher demonstrations. Many of the activities are built around general physics concepts, but concepts from other disciplines are included as well. The purpose of using this material is to stimulate critical and creative thinking.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|
CHEM 20 - General Reference|CHEM 30 - General Reference|
PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10, Middle Level Science

Enviro-Canada Series 1 (Wall Chart). J & L Macpherson (JLM), 1990. Includes 7 wall charts, 45 by 66 cm each and teacher's guide (\$30.00 set)

These colourful Canadian posters introduce students to the variety and interdependence within Canada's main ecological regions. Titles included: *Arctic Tundra Ecosystem*, *Canadian Shield*, *Great Plains or Prairie Ecosystem*, *Five Main Ecosystems of British Columbia's Interior Mountains*, *Great Lakes Region*, *Grand Banks of Newfoundland*, and *Pacific Coast*. The set provides information on atmosphere, animals, plants and soil. The teacher's guide includes reproducible activities.

Suggested Use: BIO 20 - Ecological Organization
Other Uses: Elementary & Middle Level Science

The Environment of Life (Print-Non-Fiction). Tudge, Colin. (An Equinox Book). Oxford University (OUP), 1992. 248 p. ISBN 0-19-520938-9 (\$31.50 hdc.)

This is a good source for dealing with ecology, population problems, loss of habitat and other threats

to the environment. Animal behaviours are also covered. There are many colour photographs with an easy to read text. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Diversity of Life, Ecological Organization|BIO 30 - Animal Systems
Other Uses: Science 10

Evolution Under the Microscope (Microslides). (BORE), Order No. 79704-23 (\$5.94 set of 8 Photomicrographs)

Topics in this set include:

1. Euglena (400X) peranema (200X)
2. The simple colony - pandorina (200X)
3. The simple body cavity - eudorina (200X)
4. The simplest differentiation - pleodorina (200X)
5. A dead end - volvox (150X)
6. The simple tube-hydra - wm/cs (14X and 100X)
7. The head forms - planaria (3X)
8. The tube in a tube - annelid worm (40X)

Microslides require use of microslide viewer (contact BORE)

Suggested Use: BIO 30 - Evolution

Experimenting With Illusions (Print-Non-Fiction). Gardner, Robert. (A Venture Book). Franklin Watts (GRO), 1990. 127 p. ISBN 0-531-10907-7 (\$16.50 hdc.)

Information is given on how visual perceptions are processed and suggestions on how illusions can be produced with images and graphics. Included are a table of contents, bibliography and an index.

Suggested Use: PHYS 20 - Optics
Other Uses: Middle Level Science

Exploring Chemical Elements and Their Compounds (Print-Non-Fiction). Heiserman, David L. TAB Books (MHR), 1992. 376 p. ISBN 0-8306-3018-X (\$36.95 hdc.) ISBN 0-8306-3015-5 (\$23.95 pbk.)

Understanding of the Dimensions of the Nature of Science, S-T-S Interrelationships, and Science-Related Interests and Attitudes can be enhanced by use of activities presented in this resource.

Suggested Use: CHEM 20 - Atoms & Elements, Independent Research, Molecules & Compounds|CHEM 30 - Independent Research

Exploring the Seashore In British Columbia, Washington and Oregon (Print-Non-Fiction). Snively, Gloria. Gordon Soules Book (SOU), 1978. 240 p. ISBN 0-919574-25-4 (\$19.95 pbk.)

The book presents knowledge about the seashore and the plants and animals which live there. The

contents include the identification of beach types, tidal zones and habitats as well as the type of plants and animals found in each. The author describes plant and animal structures and how particular behaviours help them survive in their habitat. The greatest value of this resource is its study of marine animal phyla and the marine biome, but it should be noted that this is essentially an excellent field guide.

Suggested Use: BIO 20: Diversity of Life, Ecological Organization
Other Uses: Science 9

The Extraordinary Chemistry of Ordinary Things (Print-Non-Fiction). Snyder, Carl. John Wiley (WIL), 1992. 686 p. ISBN 0-471-62971-5 (\$61.95 hdc.)

In addition to covering a large number of the objectives in the chemistry curriculum guide in a way that will make them meaningful to students, there is also a lot of material for enrichment, extension, independent research and case studies. The book makes the connection between the properties of chemicals and how they are used. The author does an excellent job of discussing the Nature of Science, the STSE Interrelationships, Values that Underlie Science and Science-Related Interests and Attitudes. Included are a table of contents, glossary and an index.

Suggested Use: BIO 30 - Chemical Basis of Life|CHEM 20 - Introduction to Chemistry, Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concept & Stoichiometry, Behaviour of Gases, Organic Chemistry|CHEM 30 - Energy Changes in Chemical Reaction, Equilibrium, Solubility & Solutions, Acid-Base Equilibria, Oxidation & Reduction

The Facts on File Dictionary of Biology. Rev. ed. (Print-Non-Fiction). Tootill, Elizabeth. Facts on File (CMG), 1988. 326 p. ISBN 0-8160-1865-0 (\$15.95 pbk.) ISBN 0-8160-2368-9 (\$31.95 hdc.)

The dictionary defines more than 3,000 biological terms and concepts. Some cross referencing of terms is provided. The content appears current and accurate. No pronunciation keys are given. Two column format on a page is used. Some 40 line drawings are used to illustrate. While this is considered a fine resource, this dictionary does not have as many entries, nor as many illustrations as the *Harper Collins Dictionary of Biology*. Examples are usually not provided. Both the Facts on File and the Harper Collins dictionaries are superior to *A Concise Dictionary of Biology* in their use of illustrations and binding.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference

The Facts on File Dictionary of Chemistry. Rev. ed. (Print-Non-Fiction). Daintith, John. Facts on File (CMG), 1988. 247 p. ISBN 0-8160-1866-9 (\$15.95 pbk.) ISBN 0-8160-2367-0 (\$31.95 hdc.)

As the title states, this material is a dictionary of chemical and chemistry related terms. There are over 2000 headwords. Some diagrams are included.

Suggested Use: CHEM 20 - General Reference|CHEM 30 - General Reference

The Facts on File Dictionary of Physics. Revised ed. (Print-Non-Fiction). Dainteth, John, ed. Facts on File (CMG), 1988. 235 p. ISBN 0-8160-1868-5 (\$31.95 pbk.) ISBN 0-8160-2366-2 (\$31.95 pbk.)

This is essentially a glossary of terminology in physics. Some of the laws of physics are stated in it as well. Some of the terms are beyond high school level, but most would be understandable by a grade 12 physics student. It is an excellent reference book. Included is a table of contents.

Suggested Use: PHYS 20 - General Reference|PHYS 30 - General Reference

The Fallacy of Wildlife Conservation (Print-Non-Fiction). Livingston, John A. McClelland and Stewart (MCC), 1981. ISBN 0-7710-5336-3 (\$10.95 pbk.)

The premise of this book is that conservation decisions are made on the basis of how valuable resources are to humans rather than on the health of the biosphere. Included is a table of contents.

Suggested Use: BIO 20 - Ecological Organization

Falling Through Air (Software). MacQueen, Ron. MacQueen (RON), 1987.

Contents: Disk, manual \$49.95/package (There is a two package price of \$79.95 for this title and Coulumb and Millikan)

System Requirements: Apple IIe, 48k, 5 1/4"

This highly recommended software tutorial and simulation helps students describe how an object moves as it falls through air and what forces cause the motion. The strength of the program is its ease of use; the weakness is that students need to know the required formulas before using the program.

Suggested Use: PHYS 30 - Kinematics & Dynamics

Fertile Soil: A Grower's Guide to Organic & Inorganic Fertilizers. 2nd ed. (Print-Non-Fiction). Parnes, Robert. AG Access (AGC), 1990. 190 p. ISBN 0-932857-035 (\$39.95 pbk.)

The content is information dealing with fertilizer and soil fertility. It has the "everything you wanted to know about soil" approach. It could be used as a reference as a grower's guide to soil improvement. Included are a table of contents, glossary and an index.

Suggested Use: BIO 20 - Agricultural Botany|CHEM 20 - Molecules & Compounds, Independent Research|CHEM 30 - Solubility & Solutions, Independent Research

A Fine Science 1985 Series (Videotape). Saskatchewan Education/Canadian Broadcasting Corporation (MHP), 1985. Dup. Order No. V02309-V02321 (Programs 1-13) (BB) BB 5908 (\$3.35 pbk. teacher's guide)

The series, produced in 1985 and 1986, looks at the state of science and technology in Saskatchewan. A variety of areas is examined--medicine, communications, natural resources,

agriculture, power systems, water management, and pure science research. It is useful for career awareness, and as a link between what the students are learning and their lives in this province. Excellent support for developing the Common Essential Learnings and the Dimensions of Scientific Literacy is given.

Programs are available from Media House Productions for the cost of the videotape plus a nominal duplication charge. Blank tapes may be purchased from Media House for this service or clients may supply their own tapes. Copies of the teacher's guides were sent to each school in 1985 and in 1986. See "Considerations for Acquiring Resources" section in this bibliography for series duplication discount information.

Suggested Use: BIO 20 - Agricultural Botany|BIO 30 - Animal Systems|CHEM 30 - Acid-Base Equilibria|PHYS 30 - Mechanical Energy
Other Uses: Science 10, Middle Level Science

The Flying Circus of Physics With Answers (Print-Non-Fiction). Walker, Jearl. John Wiley & Sons (WIL), 1977. 295 p. ISBN 0-471-02984-X (\$25.50 pbk.)

This is a great teacher resource book, in which the author provides an excellent source of ideas for making science relevant to the students and for taking science "out of the laboratory." Stereotype cautions are advised in using the material with students.

Suggested Use: PHYS 20 - General Reference|PHYS 30 - General Reference

Focus on ... Series (Print-Non-Fiction). Alberta Environment (ALB), (Free)

This series, developed in Alberta, is composed of a set of loose leaves on various environmental topics. An overview of each topic is given with a conclusion which speaks of the individuals' responsibility to help reduce environmental problems and also to make their concerns known to the various levels of government. Definitions of terms used are given in the margin. The material may be reproduced for classroom use with proper acknowledgement made to Alberta Environment.

Suggested Use: BIO 20 - Ecological Organization
Other Uses: Science 10

Food for Thought: Facts About Food and Farming In Canada (Print-Non-Fiction). Herscovici, Alan. Ontario Farm Animal Council (OFAC) 25 p. (\$2.00 each)

The booklet covers issues which arise within the food production or agriculture industry and society at large such as food safety, chemical use in farming, natural and organic foods, agriculture and the environment, and animal welfare and care. Most of the questions and issues are addressed from both sides with an attempt to inject some scientific and factual information on the various questions and points. This booklet, however, is written mainly from the viewpoint of defending the vast existing infrastructure of agriculture production and food processing in Canada.

Suggested Use: BIO 20 - Agricultural Botany|CHEM 20 - Organic Chemistry
Other Uses: Science 9

Foundations of Chemistry. 2nd ed. (Print-Non-Fiction). Toon, Ernest R., et al. Holt, Rinehart and Winston (HRW), 1990. 670 p. ISBN 0-03-922287-X (\$40.80 hdc.)

This is not a physically attractive text but it presents Chemistry 30 topics at an appropriate level. The solutions manual is well organized. Numerous biographies are presented. There are some excellent special feature articles. This text suitable for average to gifted student supplementary material or for teacher reference. Included are a table of contents and an index.

Suggested Use: CHEM 20 - Atoms & Elements, Chemical Reactions, Molecules and Compounds, Mole Concept & Stoichiometry, Organic Chemistry|CHEM 30 - Energy Changes in Chemical Reaction, Reaction Kinetics, Equilibrium, Acid-Base Equilibria, Oxidation and Reduction

From Quarks to the Cosmos: Tools of Discovery (Print-Non-Fiction). Lederman, Leon M. and David N. Schramm. Scientific American Library (GNP), 1989. 242 p. ISBN 0-7167-5052-X (\$44.95 hdc.)

This book is a historical account of scientific research in the areas of cosmology and particle physics over the last century. The authors focus particularly on the last few decades when this type of research has been most prevalent. The material serves as an excellent source of information for physics teachers in the area of nuclear physics. This is a superb book, intended for scientific enrichment, and would be useful for gifted students.

Suggested Use: PHYS 30 - Nuclear Physics, Teacher Reference

Fundamentals of Physics: An Introductory Course (Print-Non-Fiction). Martindale, David E., et al. D.C. Heath (BB), 1987. 771 p. BB 5353 (\$46.10 hdc. student edition) BB 2046 (\$30.35 teacher's guide)

The applications of the theory studied are excellent. Additional resources would be needed to support the Values that Underlie Science and Science-related Interests and Attitudes. Table of contents and an index are included.

Suggested Use: PHYS 20 - Waves, Light, Sound, Heat|PHYS 30 - Kinematics & Dynamics, Mechanical Energy, Fluid Mechanics, Electricity, Nuclear Physics

Fundamentals of Physics: A Senior Course (Print-Non-Fiction). Martindale, David G., Robert W. Heath and Philip C. Eastman. D.C. Heath (HTH), 1986. BB 1033 (\$58.65 hdc.) BB 1045 (\$29.30 teacher's guide)

For average to gifted students, this is considered to be good to excellent in supporting the DSLs.

Suggested Use: PHYS 20 - Physics of Everyday Things, Waves, Light, Sound, Heat|PHYS 30 - Kinematics & Dynamics, Momentum, Mechanical Energy, Fluid Mechanics, Electricity, Nuclear Physics

Gaia: The Growth Of An Idea (Print-Non-Fiction). Joseph, Lawrence E. St. Martin's (MCC), 1990. 276 p. ISBN 0-312-04318-X (\$27.95 hdc.)

Joseph expounds on the theory of Gaia which proposes that the planet earth is controlled by biological homeostatic forces as opposed to conventional theories which suggest that geophysical forces govern the planet's fate. This idea gives hope for the long term survival of the planet. This book could be used as background information for teacher reference.

Suggested Use: BIO 20 - Ecological Organization|BIO 30 - Evolution

Genes and Surroundings (Print-Non-Fiction). BSCS. Kendall/Hunt (KHP), 1983. 147 p. ISBN 0-8403-3065-0 (\$9.90 U.S., student text pbk.) ISBN 0-8403-3066-9 (\$17.90 U.S., teacher guide pbk.)

American in content, this material examines human genetics from the perspective of diversity. Students are asked to observe, record, and interpret the variability of life that surrounds them. They are asked to consider its biological roots and its ultimate expression in the myriad environments that constitute modern society. Included is a table of contents.

Suggested Use: BIO 30 - Genetics

Genethics: The Ethics of Engineering Life. Rev. ed. (Print-Non-Fiction). Suzuki, David and Peter Knudtson. Stoddart (STO), 1990. 372 p. ISBN 0-7737-5421-0 (\$16.95 pbk.)

This book has three parts: an introduction which discusses the limits of science, five chapters discussing basic genetic principles, and nine chapters that deal with the ethical implications of our current ability to understand and manipulate genes. The last nine chapters deal with several genetic disorders and the dual edge sword of technology. The authors state that this is written from a humanistic moral approach. This is an excellent resource for teachers or for enthusiastic, gifted students looking for resources for special projects. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Agricultural Botany|BIO 30 - Genetics, Evolution

Genetics and Heredity (Print-Non-Fiction). Edelson, Edward. (The Encyclopedia of Health - The Healthy Body). Chelsea House (NEL), 1990. 111 p. ISBN 0-7910-0018-4 (\$24.99 hdc.)

The reader is provided with an overview of the field of genetics and heredity. The history, genetic defects, treatments, technological advances and ethical considerations discussed provide support for Key Science Concepts, STSE Interrelationships and Science-Related Interests and Attitudes. The material is inspiring and well organized. Each new topic melds well with references to earlier discussions on a topic.

Suggested Use: BIO 30 - Genetics, Chemical Basis of Life

Genetics In Canadian Health Care: Summary of Report 421 (Print-Non-Fiction). Science Council of Canada. (CGPC), 1991. ISBN SS22-1991-42-1 (\$5.95 full report) ISBN SS22-1992-42-1 (\$2.95 summary)

When ordering, please specify full report 132 pages or summary 13 pages. The aim of this report is to raise the awareness of the role of genetics in both health and health care and to improve integration of genetic knowledge and technologies into our health care, research, and education systems. It is hoped that the goals and initiatives presented provide a framework upon which effective and ethical development and delivery of genetic services can proceed. This report is based on a three-year project by the Science Council of Canada. The text is in English and French.

Suggested Use: BIO 30 - Genetics

Genetics: Patterns of Diversity (Videodisc). Coronet/MTI Film & Video (CFV), 1991. 25 min. Order No. COR33107-VD (\$210.00)

Diversity of life is emphasized through a study of characteristics of snails in Britain and in the Pyrenees. Bar codes are given with the master script in the discussion guide. This allows for quick access to the information on the disc.

Suggested Use: BIO 30 - Genetics

Genetics: The Mystery and the Promise (Print-Non-Fiction). Leone, Francis. Tab Books (MHR), 1992. 232 p. ISBN 0-8306-3067-8 (\$19.95 pbk.)

A detailed account of historical developments in the field of genetics as well as the future of the diverse field of genetic engineering is given. A sense of how genetic research has changed the course of science in the past and how it may alter our future is presented.

Suggested Use: BIO 30 - Genetics|CHEM 20 - Independent Research, Molecules & Compounds|CHEM 30 - Independent Research

Global Atlas (Print-Non-Fiction). Draper, Graham. Gage Educational (GAG), 1991. 196 p. ISBN 0-7715-8170-X (\$30.00 pbk.)

A practical purchase, this is a good atlas with many good charts and graphs depicting various aspects of life. There are five major divisions in the atlas covering topics such as earthquakes and volcanoes, climate, ecosystems, renewable resources, non-renewable sources of energy and population patterns. One section is devoted specifically to Canada. Included are a table of contents, glossary and an index. The teacher resource package is useful.

Suggested Use: BIO 20: Ecological Organization
Other Uses: Middle Level Science, Social Studies

Global Science: Energy, Resources, Environment (Print-Non-Fiction). Christensen, John W. Kendall/Hunt (KHP), 1991. 699 p. ISBN 0-8403-4657-3 (\$31.90 student edition hdc.) ISBN 0-8403-4659-X (\$39.90 teacher's guide)

A good resource book that has many activities that could be used for independent learning, especially for the new Science 10 curriculum. Simulations, test items and labs are included. There is excellent information on alternative energy sources. This material is recommended as a teacher resource rather than a student resource because of its strong American content. The contents include the grand oasis of space, basic energy/resource concepts, growth and population, mineral resources, food, agriculture and population interactions, energy supply and demand, water quantity and quality, resource management and options for the future.

Suggested Use: BIO 20 - Introduction, Ecological Organization, Agricultural Botany, Teacher Reference|CHEM 20 - Atoms & Elements, Teacher Reference|CHEM 30 - Teacher Reference

Other Uses: Science 10|Middle Level Science - Teacher Reference

Globe Biology (Print-Non-Fiction). Bernstein, Leonard. Globe Book Company (GMC), 1990. 672 p. ISBN 1-55675-716-6 (\$51.88 hdc.)

Two of the major strengths of this material are its grade 7-8 reading level plus the objectives and science process skills at the beginning of each chapter. The activities are simple in design and easy to understand. For use in Science 10, chapters on the chemistry of life and cells plus the units on human biology and human health may be useful. As a textbook for Biology 20/30 there appears to be weakness in the illustrations and the depth of information provided.

Suggested Use: BIO 30 - Cell Structure & Function, Animal Systems, Chemical Basis of Life
Other Uses: Science 10

Grains and Seeds In Canadian Agriculture (Kit). CN Grain Communications (AGI), 1990. 1 display of grain samples with guide, 1 teacher's guide by AgInsight (\$25.00 kit) (\$5.00 teacher's guide)

The *Grains and Seeds in Canadian Agriculture* kit is a sturdy, oversize package consisting of a display board of 40 seed samples such as Durham Wheat, Sweet Clover, Field Peas and Buckwheat; a thirty-three page teacher's guide; and built-in instruction chart and booklet entitled *Canadian Agriculture from Sea to Sea*. The aim of the package is to help students and teachers recognize Canada's principal grain, oilseed and speciality crop seeds, to learn their uses and where they are produced. The 20-page booklet provides an overview of farming across every province and features coloured maps and graphs of farm income sources. Written by Larry McCullough, a teacher in Fort Qu'Appelle, Saskatchewan, the activities in the teacher's guide integrate language arts, science, mathematics, and social studies. Teachers may duplicate the material for their students. The kits were distributed to all Saskatchewan elementary schools in the fall of 1990. Each school also received a class set of 30 student booklets. This kit can be used in a number of ways, for discussing classification or seed production in elementary level science, for discussing plant reproduction and adaptations in Biology 20, or for raising awareness of all students about the diversity within the agricultural industry in Saskatchewan.

Suggested Use: BIO 20 - Agricultural Botany
Other Uses: Elementary Science, Mathematics, Language Arts, Social Studies

Graphical Analysis. Version 2.5 (Software). Vernier (VERN), 1988. (\$29.95 U.S., IBM) (\$29.95 U.S., Apple 5 1/4")

System Requirements: MS DOS 2.0, 256K, 5.25 or 3.5 disk drive, colour monitor (or black and white monitor with 320 K and Hercules graphics), printer.

Contents: program disk, user's manual, teachers guide.

As a tool for data analysis, used in conjunction with an activity-based science or math program, this software would be a useful resource for the classroom teacher. This program may also be useful for analysis of student evaluation marks. The program is easy to use and is quite highly recommended. Data can be entered directly or imported/exported to or from Lotus 1.2.3 or Microsoft Works. The computer station can be used to enter data by groups, or for the entire class. Printouts can be made of the graphs plotted. Statistical summaries can also be printed.

Suggested Use: CHEM 20 - General Reference|CHEM 30 - General Reference|BIO 20 - General Reference|BIO 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

Other Uses: Middle Level Science, Mathematics

Grasslands (Print-Poetry). Poirier, Thelma. Coteau Books (UTP), 1990. 79 p. ISBN 1-55050-006-6 (\$8.95 pbk.)

This poetry collection grew out of the submission Thelma Poirer made to the public hearings conducted in 1976 to determine the extent of support for the development of the Grasslands National Park in southwestern Saskatchewan. This resource deals mainly with the Dimension of Science-Technology-Society-Environment Interrelationships, but also fits directly into the factor of valuing natural environments under the Dimension of The Values That Underlie Science.

Suggested Use: BIO 20 - Ecological Organization|CHEM 20 - Independent Research|CHEM 30 - Independent Research

Guide to Farm Practice In Saskatchewan. Rev. ed. (Print-Non-Fiction). University of Saskatchewan, Saskatchewan Agriculture and Agriculture Canada. University of Saskatchewan. Division of Extension and Community Relations (BB), 1987. 240 p. BB 2150 (\$2.00)

Published every three years from 1933 to 1987, this material is no longer in print but many schools have copies. The Book Bureau has a limited number and copies may be available from extension agrologists. This resource contains much information which may be useful both for teacher background and for student research. Sections on the climate, soil productivity, and habitat protection in Saskatchewan will be especially useful. Included are a table of contents and an index.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life

A Guide to Laboratory Safety and Chemical Management In School Science Study Activities (Print-Non-Fiction). Saskatchewan Environment and Public Safety Air and Land Protection Branch (SKE), 1987. 19 p. (Free of charge)

The information presented covers areas such as laboratory safety procedures and emergency procedures and equipment. Areas of chemical management include procurement inventory and cost reductions, chemical storage by compatibility as well as chemical disposal. Appendices provide added information on chemical specific hazard, disposal, spill cleanup and storage group designations plus information on special chemical hazards. One copy was sent to each secondary school in the province.

Suggested Use: CHEM 20 - General Reference|CHEM 30 - General Reference

The Harper Collins Dictionary of Biology (Print-Non-Fiction). Hale, W.G. and J.P. Margham. Harper Perennial (HCP), 1991. 569 p. ISBN 0-00-434351-4 (\$14.95 pbk.)

More than 5,600 entries provide explanations. Nearly 300 diagrams are used. Examples aid in the clarification of terms. The major subjects of anatomy, biochemistry, ecology, evolutionary theories and others are covered. Biographies which detail the contributions of some biologists are included. Pronunciation keys are not included. Large, clear print without columns on non-cluttered pages is used. Some terms are cross-referenced for further inquiry. Flexible binding allows for ease in handling. This resource has more entries and more illustrations than *The Facts on File Dictionary of Biology*. Both these titles seem superior to the *Concise Dictionary of Biology* in use of illustrations and binding.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference

Harvest of Sand: Desertification and Land Degradation. E.D.I.T. File 2 (Print-Non-Fiction). Tooke, Moyra (ed.). Teacher's Press (TCH), 1990. (\$27.50 Loose leaf)

This package deals with the causes and effects, case studies and solutions and the issue in Canada of desertification and land degradation. The E.D.I.T. file system organizes complex up-to-date information about global environment and development issues for Canadian classrooms. The material is selected to give a broad perspective on changing world events and to provide a relevant resource base for student discussion and research. The material can be freely duplicated to allow class, group or independent study. Each reading presents opportunities for discussion and related activities. The biases of the writers may show. The readings have been edited for appropriate comprehension levels. Terms which are specific to development issues will be found in the E.D.I.T. *Glossary of Environment and Development Terms* which is available free of charge.

Every autumn an E.D.I.T. catalogue, listing new files and any new readings for existing files, will be mailed to teachers. Teachers can order reprints of individual readings by quoting the number in the top right-hand corner.

Suggested Use: BIO 20 - Ecological Organization
Other Uses: Social Studies 7

Healthy Homes, Healthy Kids (Print-Non-Fiction). Schoemaker, Joyce M. and Charity M. Vitale. Island Press (MEL), 1991. 221 p. ISBN 1-55963-056-6 (\$17.50 pbk.)

The topics include maintaining a chemical free yard, breathing defensively when outdoors and running safely. Techniques are suggested about how to remove pesticides from supermarket produce and additives from processed foods. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 20 - Ecological Organization|BIO 30 - Animal Systems|CHEM 20 - Independent Research|CHEM 30 - Independent Research
Other Uses: Science 10|Wellness 10|Life Transitions 20/30|Middle Level Health

Heat and Temperature Set (Kit). Boreal Laboratories (BORE), Order No. 64372 (\$145.20)

Contents:

Ball and ring Apparatus
Compound Bar
Gas Convection Apparatus
Pulse Glass
Radiometer
Calorimeter
Specific Heat Specimens (Set of 5)
Mercury thermometer (-20 degrees to 110 degrees C)

The *Heat and Temperature Set* could be used to demonstrate the effects of heat on various solids, liquids, and gases, allowing students to explore conduction, convection, radiation, and specific heat. Sample activities are included.

Suggested Use: PHYS 20 - Heat
Other Uses: Middle Level Science

Heath Chemistry. Canadian ed. (Print-Non-Fiction). Herron, J. Dudley. D.C. Heath (BB), 1987. 742 p. BB 6335 (\$53.45 student edition, hdc) BB 6336 (\$69.15 teacher's annotated edition, hdc)

This is a colourful, attractive text with numerous problems dealing with applications and review questions for practice. The material allows for integrated units with biology and physics. Good concrete examples of advanced technology such as superconductors and optical fibres are given. This text provides a good to excellent support for all the DSLs. The resource book and lab manual are excellent. Included are a table of contents, glossary and index.

Suggested Use: CHEM 20 - Introduction to Chemistry, Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concept & Stoichiometry, Behaviour of Gases, Organic Chemistry|CHEM 30 - Energy Changes in Chemical Reactions, Reaction Kinetics, Equilibrium, Solubility & Solutions, Acid-Base Equilibria, Oxidation & Reduction

Heath Physics (Print-Non-Fiction). Martindale, David G. D.C. Heath (BB), 1992. 840 p.
BB 6533 (\$47.10 hdc.) BB 6534 (\$29.33 teacher's edition)

This is the colourized American version of two Canadian texts, published by D.C. Heath. This text is visually more exciting and compact, but obviously lacks the Canadian content of the other versions. Diffraction and refraction of waves are omitted in this American version. Because of extra questions and examples, this may be useful as a teacher resource for educators using the Canadian versions. Included are a table of contents and an index.

Suggested Use: PHYS 20 - Physics of Everyday Things, Waves, Light, Sound, Heat|PHYS 30 - Kinematics & Dynamics, Momentum, Mechanical Energy, Fluid Mechanics, Electricity, Nuclear Physics

The History of Invention (Print-Non-Fiction). Williams, Trevor I. Facts on File (CMG), 1987. 352 p.
ISBN 0-8160-1788-3 (\$50.00 hdc.)

Technological innovations are explained in light of the need that each met while creating a demand and opportunity for the next breakthrough. Thousands of inventions are chronicled and placed in their historical, cultural and scientific context. The resource is well illustrated and incorporates the Dimensions of Scientific Literacy into the information presented, with an emphasis on the Science-Technology-Society-Environment Interrelationships. This resource is a good research reference book for grades nine to twelve.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research
Other Uses: Science 10

Holistic Resource Management (Print-Non-Fiction). Savory, Allen. Island (IPS), 1988. 564 p.
ISBN 0-933280-61-0 (\$27.50 pbk.) ISBN 0-933280-62-9 (\$45.00 hdc.)

This American resource would broaden gifted students' and teachers' perspective on the problem areas in ecology and raise awareness that these problems are very complex. The issues have wide application. Teachers could supplement this material with examples to show that Canadians are doing the same things and that we can expect or already have identical results. Teacher Resource.

Suggested Use: BIO 20 - Ecological Organization

Home Place: Essays on Ecology (Print-Non-Fiction). Rowe, Stan. (Henderson Book Series #12). NeWest (NEW), 1990. 253 p. ISBN 0-920897-78-9 (\$14.95 pbk.)

Rowe has put together a collection of essays on human ecology, comprising a selection of articles written over the last decade. They are centred around the theme of Earth-as-Home-Place and how we should value it. Included are a table of contents and a bibliography. All teachers of Biology 20 should read this book.

Suggested Use: BIO 20 - Ecological Organization, Agricultural Botany

Homemade Holograms: The Complete Guide to Inexpensive Do-It-Yourself Holography (Print-Non-Fiction). Sovine, John. (1990). TAB Books (MHR), 230 p. ISBN 0-8306-3460-8 (\$30.95 pbk.)

Directions are given for building such things as holograms and lasers. While the average student or teacher may not value this book highly, those of a technical bent may gain a great deal from it. Many sections have an excellent review or extension for Physics 20. The specific factors of scientific literacy, supported by this material are orderliness, accuracy, designing experiments, science and technology, the impact of science and technology and all the factors incorporated under Dimension of Scientific and Technical Skills.

Suggested Use: PHYS 30 - Science Challenge|PHYS 20 - Optics
Other Uses: Science 10

How Smart Are Animals? (Print-Non-Fiction). Patent, Dorothy Hinshaw. Harcourt Brace Jovanovich (CMG), 1990. 189 p. ISBN 0-15-236770-5 (\$17.95 hdc.)

The content concerns learning and intelligence in animals. Many issues are raised but no answer to the question stated in the title is given. The readers are left in the position of making a decision based on the information presented.

Suggested Use: BIO 30 - Animal Systems, Evolution

Human Activity and the Environment: A Statistical Compendium (Print-Non-Fiction). Statistics Canada (STATS), 1986. Order No. 11-509E (\$45.00 pbk.)

This volume supplies lots of statistical data about Canada's ecozones, physiography, industries, population and land use. The impact of human activity on the Canadian environment is made clear. Note that 1983 statistics are used. There is a strong support for the STSE Interrelationships. All Common Essential Learnings are supported in the material.

Suggested Use: BIO 20 - Ecological Organization
Other Uses: Science 10

Human Activity and the Environment: A Statistical Compendium (Print-Non-Fiction). Statistics Canada (STATS), 1991. Order No. 11-509E (\$35.00 pbk.)

A current edition of the above publication which was listed in the Science 10 bibliography, it contains 1986 census statistics and other recent data. Specify copyright date when ordering. This resource is also available in French.

The Human Body: An Overview (Print-Non-Fiction). Kittredge, Mary. (The Encyclopedia of Health - The Healthy Body Series). Chelsea House (NEL), 1990. ISBN 0-7910-0019-2 (\$24.99 hdc.)

The historical sketch in chapter one is a particularly useful survey of major advances in medicine. This volume from the series provides a good overview of basic physiology. It reviews the major

human body systems. Both structure and function are dealt with in a readable and easily understood manner. Included are a table of contents, glossary and an index.

Suggested Use: BIO 30 - Animal Systems
Other Uses: Science 10

The Human Body ... Series. 2nd ed. (16 mm). Coronet Instructional Films (MHP), 1980.
11 - 22 min. each

The titles in this series include:

Human Body: Digestive System	Order No. MP 8002
Human Body: Endocrine System	Order No. MP 8001
Human Body: Excretory System	Order No. MP 7999
Human Body: Muscular System	Order No. MP 7998
Human Body: Nervous System	Order No. MP 8006
Human Body: Reproductive System	Order No. MP 8008
Human Body: Skeletal System	Order No. MP 8004
Human Body: Systems Working Together	Order No. MP 8005

Suggested Use: BIO 30 - Animal Systems
Other Uses: Science 10

Human Form & Function (Print-Non-Fiction). Minett, Pamela, Wayne David and David Rubenstein. Unwin Hyman (IRW), 1989. 220 p. ISBN 0-7135-2714-5 (\$26.00 pbk.)

This highly recommended material would make an excellent reference for student or teacher use. Basic information on a vast number of topics in human anatomy and physiology are presented briefly and factually. The topics cover a large number of items in which students are interested. Many sections contain experiments or labs. The graphs, charts and diagrams are very clear. This resource supports many of the key science concepts. Included are a table of contents and an index.

Suggested Use: BIO 30 - Animal Systems
Other Uses: Life Transitions, Home Ec, Health, Wellness, Family Life

Human Life (Print-Non-Fiction). Mackean, Don. John Murray (IRW), 1988. 295 p. ISBN 0-7195-4500-5 (\$29.50 pbk.)

Human Life is considered a good general reference book for activities such as student research papers. It has colourful illustrations including photomicrographs. In many cases the author makes practical connections to the world around us. A very diverse range of topics is covered. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Ecological Organization|BIO 30 - Animal Systems
Other Uses: Science 10

Human Life Processes I: Cellular Physiology. Rev. ed. (Software). Classroom Consortia Media. (Biology Series). IBM (IBM), 1986. Order No. 6024-649 (\$69.30)

Contents: 1 - 3.5" diskette, 1 guide

System requirements: colour monitor, 256 KB of memory, printer is optional.

The objectives are for the students to apply biological principles to everyday life, interpret graphs and diagrams, understand relationships among organisms and synthesize biological concepts. The simulations presented make this program appropriate for slower students having difficulty with the cell unit in Biology 30.

Suggested Use: BIO 30 - Cell Structure & Function
Other Uses: Science 10

Human Life Processes II: Systems Level (Software). Classroom Consortia Media. (Biology Series). IBM (IBM), Version 1.01 Order No. 6024-616 (\$77.00)

Contents: 1 - 3.5" diskette, 1 guide

System Requirements: Colour monitor, 256 KB of memory, printer is optional.

Students are able to investigate how cells, tissues and organs work together in the human body and study the components and functions of the respiratory, excretory and digestive systems. This package would promote independent learning.

Suggested Use: BIO 30 - Animal Systems
Other Uses: Science 10

Human Reproduction: Social and Technological Aspects (Print-Non-Fiction). BSCS. (Innovations: The Social Consequences of Science and Technology Program). Kendall/Hunt (KHP), 1983. 89 p. ISBN 0-8403-3323-4 (\$6.90 U.S. student text pbk.) ISBN 0-8403-3324-4 (\$14.90 U.S. teacher's guide pbk.)

The activity topics for this module include the controversial innovations of contraception, sex preselection, adoption, artificial insemination, and population control. This American module is designed to deal with what the topic is, how it affects the student and the general population, how valuable the innovation is to the general population and what might be the future of the innovation.

Suggested Use: BIO 30 - Animal Systems

Idea Bank Collation, Vol. 1 (Print-Non-Fiction). Talesnick, Irwin. S17, Science Supplies & Services (S17), 1984. 530 p. ISBN 0-9691743-1-4 (\$33.95 pbk.)

This is an excellent collection of teaching ideas and hints for all areas of science. Many of the topics are older "tried and true" ideas which may be found in other science materials. The activities do not

always support the DSLs in and of themselves, but the activities could be immensely valuable in conjunction with normal science programs.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|
CHEM 20 - General Reference|CHEM 30 - General Reference|
PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10

In Search of Schrodinger's Cat: Quantum Physics and Reality (Print-Non-Fiction). Gribbin, John R. Bantam (BAN), 1984. 302 p. ISBN 0-553-34253-3 (\$15.00 pbk.)

Gribben's book supports the development of scientific literacy and is especially good for concepts in quantum mechanics. It does not emphasize mathematics. This material is suitable for teacher reference or for very able Physics 30 students. Included are a table of contents, bibliography and an index.

Suggested Use: PHYS 30 - Teacher Reference

In Search of the Big Bang (Print-Non-Fiction). Gribbin, John R. Bantam (BAN), 1986. 413 p. ISBN 0-553-34617-2 (\$15.00 pbk.)

This book is an excellent, understandable description of how scientists arrived at the current theory of the creation of the universe. To some extent, it is an historical and technical description. It addresses the scientific use of astronomy and gives an update on nuclear physics. This material is considered to be current and accurate. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 30 - Teacher Reference|CHEM 20 - Teacher Reference|
PHYS 20 - Teacher Reference

The Incredible Machine (Print-Non-Fiction). National Geographic Society (NGS), 1986. 384 p. Order No. 00619 (\$38.45 hdc.)

In this excellent material, the reader is introduced to the complexity of the human body. While the information primarily focuses on fact and information, the book has the ability to stimulate ethical discussion as well. The photographs and diagrams used make this an attractive text for research or browsing purposes. The writing style is one that most students will understand. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 30 - Animal Systems
Other Uses: Science 10

Indian Glvers (Print-Non-Fiction). Weatherford, Jack. Crown (RAN), 1988. 272 p. ISBN 0-517-56969-8 (\$24.95)

Various contributions Indian Peoples have made to the modern world are examined. It

would be possible to support all the DSLs with this background material. Included are a table of contents, references and an index.

Suggested Use: BIO 20 - Agricultural Botany
Other Uses: Science 10

Indian Handcrafts (Print-Non-Fiction). Wilbur, C. Keith. Globe Pequot (ALL), 1990. 135 p. ISBN 0-87106-496-0 (\$15.95)

This is an interesting and informative guide to making crafts using traditional Aboriginal techniques. Objects featured include weapons, clothing, containers, toys and structures. Drawings and decorative print detail the materials, tools and processes used in making the crafts, and wherever possible, define the era and peoples using the items. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 20 - Agricultural Botany|PHYS 20 - Physics of Everyday Things
Other Uses: Middle Level Science|Arts Ed

Indian Use of Wild Plants for Crafts, Food, Medicine, and Charms. 1st Canadian ed. (Print-Non-Fiction). Densmore, Frances. Irocrafts (IRO), 1987. 397 p. ISBN 0-919645-16-X (\$6.95 pbk.)

Reprint of *Uses of Plants by the Chippewa Indians from the 44th annual report (1926/27) of the U.S. Bureau of American Ethnology.*

As the title implies, the content of this book discusses the use of wild plants for food, medicine, dyes, charms and decoration. Extensive charts are provided to assist the reader with Indian and Latin names for these plants. The legend of Winabajo and the birch and cedar trees is also provided. Note should be taken of the dated terminology and some stereotypical language use. This could function as an excellent resource for delivering the historic, holistic and human/culture related factors of the Nature of Science; the Science-Technology-Society-Environment Interrelationships; the valuing of natural environments from the Values that Underlie Science; and the vocation, explanation preference and valuing contributors from the Science-Related Interests and Attitude Dimension; all in a cross culture setting. Included is a table of contents.

Suggested Use: BIO 20 - Introduction, Agricultural Botany, Various Options|BIO 30 - Various Options
Other Uses: Science 10

Indian Uses of Native Plants (Print-Non-Fiction). Murphy, Edith van Allen. Meyerbooks (MEY), 1990. 81 p. ISBN 0-916638-15-4 (\$6.95 pbk.)

As the title suggests, this material provides the reader with information about the uses and applications of a variety of plants and wild animals. Some specific uses mentioned are basketry, beverages, medicinal plants, ceremonials and magic, bows and arrows and tanning hides. Included are table of contents and index.

Suggested Use: BIO 20 - Agricultural Botany, Diversity of Life|CHEM 20 - Consumer Chemistry
Other Uses: Middle Level Science

Information Brochure on Wild Rice (Print-Non-Fiction). Wild Rice Council/LaRonge (NDSE), 1989. 8 p. (Free of charge)

Promotion of the use of wild rice as a "naturally grown" consumer choice is the focus of this glossy booklet. A very brief overview of the nutritional quality and traditional harvesting technique of wild rice is given.

Suggested Use: BIO 20 - Agricultural Botany
Other Uses: Home Economics

The Inner City In Transition (Print-Non-Fiction). Bali, Ram, Mary Jane Norris, and Karl Skof. Statistics Canada (STATS), 1989. 40 p. Order No. 98-123 (\$10.00 pbk.)

By analyzing census data from 1951 to 1986, this study has documented the patterns of similarity and dissimilarity between 12 inner cities and their outlying areas, in terms of demographic, family, cultural and socio-economic characteristics. English and French combined version.

Suggested Use: BIO 20 - Ecological Organization

Instructional Strategies Series (Print-Non-Fiction). Saskatchewan Instructional Development and Research Unit and the Saskatchewan Professional Development Unit (SIDRU), (\$10.00 each pbk.)

This highly recommended series has been developed to provide assistance for teachers in implementing a variety of instructional strategies in Saskatchewan classrooms. Some parts of the material are reproducible for use in schools. Not all the booklets in this series have been written as yet. The individual titles presently available are:

No. 1	<i>This is a Yes: Concept Attainment</i>	ISBN 0-7731-0202-7	\$10.00
No. 2	<i>What Would You Do? Inquiry in the Classroom</i>	ISBN 0-7731-0201-9	\$10.00
No. 3	<i>Glad You Asked That! Questioning in the Classroom</i>	ISBN 0-7731-0209-4	\$10.00
No. 4	<i>Planning Adventures: Syntectics</i>	ISBN 0-7731-0212-4	\$10.00
No. 5	<i>Opening the Door to Co-operative Learning</i>	ISBN 0-7731-0213-2	\$10.00
No. 6	<i>Think About It: Critical and Creative Thinking in the Classroom</i>	ISBN 0-7731-0220-5	\$10.00

Suggested Use: BIO 20 - Teacher Reference|BIO 30 - Teacher Reference|CHEM 20 - Teacher Reference|CHEM 30 - Teacher Reference|PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference
Other Uses: All subject areas

An Introduction to Physics (Print-Non-Fiction). Hatzic Secondary School. Pacific Education (PEP), 1991. 448 p. ISBN 0-88865-062-0 (\$12.50 pbk.)

This "home-brew" text is based on the author's extensive experience teaching at the secondary level. The main context areas of Physics 20 & 30 are well covered. This resource may be useful for ideas for activities, and questions for assignments and exams. Emphasis is on the factors of the Key Science Concepts, and the Processes of Science and Scientific and Technical Skills. Some of the

diagrams and illustrations were found to be of mediocre quality and the typesetting poor. The binding would not stand up to heavy use.

Suggested Use: PHYS 20 - Physics of Everyday Things, Waves, Light, Sound, Heat |PHYS 30 - Kinematics & Dynamics, Momentum, Mechanical Energy, Fluid Mechanics, Electricity, Nuclear Physics

Inventing the Future: Reflections on Science, Technology and Nature (Print-Non-Fiction). Suzuki, David. Stoddart (IRW), 1989. 247 p. ISBN 0-7737-2354-4 (\$24.95 hdc.)

Suzuki presents a collection of essays and reflections on the topics of science, technology and nature, with a focus on the environment and the effects technology is having on the environment. Many of the essays would be excellent discussion starters on environmental topics. The Nature of Science, Science-Technology-Society-Environment Interrelationships and the Values that Underlie Science Dimensions are addressed.

Suggested Use: BIO 20 - Ecological Organization|BIO 30 - Animal Systems|CHEM 20 - Independent Research|CHEM 30 - Independent Research

Inventors: Profiles In Canadian Genius (Print-Non-Fiction). Carpenter, Thomas. Camden House (FIR), 1990. 160 p. ISBN 0-920656-95-1 (\$15.95 hdc.) ISBN 0-920656-93-1 (\$9.95 pbk.)

Carpenter provides a biographical description of seven men and one woman who were driven from an early age by an intense curiosity in particular areas. The articles describe the Canadian inventors' personalities as well as their trials and tribulations as they strive to improve conditions around them. Some black and white illustrations are used. Included are table of contents, bibliography and index.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research
Other Uses: Social Studies

Inventors and Discoverers: Changing Our World (Print-Non-Fiction). National Geographic Society (NGS), 1988. 320 p. Order No. 00751 (\$32.50 hdc.)

This is an excellent book. It portrays science as a human endeavour within a social, historical, and technological framework. The book shows STSE Interrelationships and the Nature of Science, by describing how new inventions and discoveries, since the time of the scientific and industrial revolution, have changed our lives. This superbly written and illustrated book has a "coffee table" format for easy reading and high interest. The material is particularly well-suited for individual student research projects. Included are a table of contents and an index.

Suggested Use: BIO 30 - Genetics|CHEM 20 - Independent Research, Organic Chemistry|CHEM 30 - Independent Research|PHYS 20 - Optics|PHYS 30 - Kinematics & Dynamics, Electricity, Nuclear Physics
Other Uses: Science 10

Investigating Aquatic Ecosystems. 2nd ed. (Print-Non-Fiction). Andrews, William A. and Sandra J. McEwan. (Contours: Studies of the Environment Series). Prentice-Hall Canada (BB), 1987. 342 p. Order No. 6179 (\$31.30 pbk.)

This is a 1987 revision of *A Guide to the Study of Freshwater Ecology* in the *Contours: Studies of the Environment* series. The book combines information, activities and suggestions for investigations into a very useful package. The book is an excellent resource for Biology 20. Chapters 4 through 6 will be valuable for classes studying the topic of water quality in Science 10.

Suggested Use: BIO 20 - Diversity of Life, Ecological Organization
Other Uses: Science 10

Investigating Terrestrial Ecosystems. 2nd ed. (Print-Non-Fiction). Andrews, William A., and Donna K. Moore. (Contours: Studies of the Environment Series). Prentice Hall (PRN), 1986. BB 1055 (\$30.00 pbk)

The authors describe the major biomes of North America and the factors which determine the composition and extent of these biomes. A strength of the book is the large number of ideas for both indoor and outdoor activities dealing with the examination of ecosystems. This book was previously listed in *Textbooks Circular*.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life|BIO 30 - Animal Systems

Investigating the Human Environment: Land Use (Print-Non-Fiction). BSCS. Kendall/Hunt (KHP), 1984. 106 p. ISBN 0-8403-3318-8 (\$6.90 U.S., student edition looseleaf)
ISBN 0-8403-3319-6 (\$14.90 U.S., teacher's guide, looseleaf)

This material was designed to provide sources of information about land use that will affect the land use decisions of the future. The program focuses on the development of independent thought. It is intended to sharpen the problem-solving skills that lead to good decision making. The content is American. Included are a table of contents and a bibliography.

Suggested Use: BIO 20 - Ecological Organization

Invitations to Science Inquiry. 2nd ed. (Print-Non-Fiction). Liem, Tik L. Science Inquiry Enterprises (SIE), 1987. 467 p. ISBN 0-878106-00-7 (\$40.00 U.S. pbk.)

Excellent for teacher use, this compilation of activities could be used to arouse students' curiosity about discrepant events or as reinforcement activities. The activities are arranged under the broad headings of environment, energy, force and motion and living things. Included are a table of contents and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10

Iroquois Use of Maize and Other Food Plants (Print-Non-Fiction). Parker, A.C. (Iroquois Reprints Series). Iroqrafts (IRO), 1983. 120 p. ISBN 0-919645-08-9 (\$6.95 pbk.)

The origin of maize and its cultivation are discussed by the author. Attention is also given to cooking and eating customs associated with maize and other food plants such as beans, squashes, fungi, and lichen. While the information provided is good, it should be noted that many of the quotations use stereotypical terms. Included are a table of contents and an index.

Suggested Use: BIO 20 - Agricultural Botany
Other Uses: Science 10

Is Our Food Safe? A Discussion of Crop Protection In a Modern World (Print-Non-Fiction). Faust, Edgar W. Hoechst Canada (HCI), 24 p. (Free of charge)

Hoechst Canada provides answers to the question, "Given the widespread use of crop protection products in modern agriculture, is our food safe?" The information is divided into three chapters. The first discusses whether the term "natural" is truly synonymous with "healthy". The second summarizes why crop protection products are necessary in today's society, and analyzes the safety of these products to consumers and producers of food. Chapter three looks at the issue of residues and toxicity. This publication gives reasons for why crop chemicals are used, and why they are more important today than ever before.

Suggested Use: BIO 20 - Ecological Organization|CHEM 20 - Independent Research|
CHEM 30 - Independent Research
Other Uses: Science 9

Issues for Today: Acid Rain, Genetic Engineering, Herbicides and Pesticides, The Greenhouse Effect (Print-Non-Fiction). Smallwood, William. GLC Silver Burdett (BB), 1985. BB 6180 (\$12.55 pbk.)

Discussed are four major environmental issues: acid rain, herbicide and pesticide use, genetic engineering and the greenhouse effect. Of these, the greenhouse effect section will be useful for the Science 10 curriculum. The other sections will be useful in Biology 30 and Chemistry 30. Rather than being definitive presentations of each issue, these readings serve to initiate student interest and research on the topic.

Suggested Use: BIO 30 - Genetics|CHEM 30 - Acid-Base Equilibria
Other Uses: Science 10, Social Studies

Issues in Agriculture (Print-Non-Fiction). Saskatchewan Education (BB), 1986. 48 p. BB 5238 (\$2.00 loose leaf)

Teachers may find some use for the objectives, activities and student information sheets in providing information for independent student research activities. This resource was distributed to all secondary level schools in Saskatchewan in 1987.

Suggested Use: BIO 20 - Various Options|BIO 30 - Various Options|CHEM 20 - Independent Research
Other Uses: Science 10|Middle Level Science|Social Studies

It's A Matter of Survival (Print-Non-Fiction). Gordon, Anita and David Suzuki. Stoddart (IRW), 1990. 278 p. ISBN 0-7737-2421-4 (\$29.95 pbk.)

This is a book of general interest, which may be useful for individual research projects at the secondary level. This book will provide a teacher in Science 10 and the new Biology 20 course with a wealth of information on explosive population growth, pollution, and consumption of natural resources. There are some models which could be made from the information that would allow critical thinking. This book is not sensitive in its treatment of the topic. The author paints a picture of despair spread over the earth, and suggests that tough measures are required for human survival. Included are a table of contents and an index.

Suggested Use: BIO 20 - Various Options|BIO 30 - Various Options|CHEM 20 - Independent Research|CHEM 30 - Independent Research|PHYS 20 - Science Challenge|PHYS 30 - Science Challenge

Other Uses: Science 10

Keepers of the Animals (Print-Non-Fiction). Caduto, Michael J. and Joseph Bruchac. Fifth House (FIF), 1991. 266 p. ISBN 0-920079-88-1 (\$22.95 pbk.)

Twenty-seven Aboriginal stories, each with related activities, promote responsible stewardship toward all animals on earth, including human beings. Included are a table of contents, glossary, an index and in each section, a bibliography. This resource has potential for use in a variety of subject areas.

Suggested Use: BIO 20 - Diversity of Life

Landscapes: A Guide to Landforms and Ecology of Southern Saskatchewan (Kit). Rowe, J.S. Saskatchewan Environment (out of print), 1983.

Consisting of a teacher reference manual, landscape guides, a set of slides, a landscape map, and posters, this series was sent to each school in Saskatchewan in the early 1980s. The series is invaluable for the teacher who wants to apply the study of ecology to the environment of Southern Saskatchewan. This material is currently out-of-print but may be available in many schools.

Suggested Use: BIO 20 - Ecological Organization

Other Uses: Middle Level Science

The Learning Cycle: Chemistry (Print-Non-Fiction). Utah State University (UTH), 1988. (\$15.75 U.S.)

Twelve modules in two magazine file boxes give activities for the units listed below. These modules present clearly described activities which can be carried out in virtually any laboratory. They would be excellent support for first year teachers or teachers without a chemistry background.

Suggested Use: CHEM 20 - Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concept & Stoichiometry|CHEM 30 - Energy Changes in Chemical Reactions, Reaction Kinetics, Solubility & Solutions

The Learning Cycle: Life Science (Print-Non-Fiction). Utah State University (UTH), 1988.
(\$16.50 U.S.)

Thirteen modules in two magazine file boxes provide activities for the units listed below. The material covers a wide variety of topics, giving teaching tips, objectives and student handouts.

Suggested Use: BIO 20 - Diversity of Life, Ecological Organization
Other Uses: Middle Level Science

The Learning Cycle: Physical Science (Print-Non-Fiction). Utah State University (UTH), 1988.
(\$19.00 U.S.)

Sixteen modules in two magazine file boxes give activities for the units listed below. The material is intended to allow students to derive meaning from these experiences.

Suggested Use: PHYS 20 - Light, Sound, Heat
Other Uses: Middle Level Science

Learning Cycle: Physics (Print-Non-Fiction). Utah State University (UTH), 1988. (\$19.00 U.S.)

Thirteen modules in two magazine file boxes provide activities for the units listed below. These are good resources for setting up learning or investigating stations in a lab. The material may be useful for students having difficulty understanding the concepts.

Suggested Use: PHYS 20 - Waves, Heat, Optics|PHYS 30 - Kinematics & Dynamics

Levitating Trains and Kamikaze Genes: Technological Literacy for the 1990s (Print-Non-Fiction). Brennan, Richard P. John Wiley & Sons (WIL), 1990. 262 p. ISBN 0-471-62295-8 (\$26.95 hdc.)

This excellent resource deals with some familiar topics in science, but primarily with the technological perspective of the biological and physical sciences. Technology, its applications and implications are addressed. There is a diagnostic quiz on technological literacy at the front of the book. This would be a great resource for students who ask questions such as "why are we taking this course?" Included are a table of contents and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10

Life In the Soil (Microslide). (BORE), Order No. 79704-17 (\$5.94) Set of 8 Photomicrographs

Topics in this set include:

1. Algae - wm (400X)
2. Bacteria - wm/st (2000X)
3. Tardigrade - scanning em (300X)
4. Nematode - wm (400X)

5. Nematodes on tomato root - wm (200X)
6. Predaceous Fungi (300X, 1000X)
7. Springtail - scanning em (34X)
8. Mite - scanning em (114X)

Microslides require use of microslide viewer (contact BORE)

Suggested Use: BIO 20 - Ecological Organization

Life Study: A Textbook of Biology (Print-Non-Fiction). Mackean, D.G. John Murray (IRW), 1981. 266 p. ISBN 0-7195-3783-5 (\$21.00)

This resource would be easy reading for most grade 11 and 12 students. The diagrams and illustrations are excellent. The summaries at the end of the chapters are well done. The questions provided are the type which provoke thoughtful consideration and relate the concepts to the world around the student. The factors of scale, system and model of the Key Science Concepts, predicting and questioning of the Processes of Science and the consideration of consequences of the Values that Underlie Science are supported by this material. Included are a table of contents, glossary, and index.

Suggested Use: BIO 20 - Agricultural Botany, Diversity of Life|BIO 30 - Cell Structure & Function, Animal Systems, Genetics, Evolution

Other Uses: Middle Level Science|Physical Education 20/30|Wellness

Looking at Microscopes (Print-Non-Fiction). Riley, Peter D. Batsford Academic and Educational (IRW), 1985. ISBN 0-7134-4632-3 (\$22.20 hdc.)

Riley deals with the concept of seeing small particles. Various types of microscopes and their applications in various scientific fields are highlighted. Black and white illustrations are used. The cover looks suitable for middle level but the content is appropriate for secondary level.

Suggested Use: BIO 30 - General Reference|PHYS 20 - Light

Making the Grade: Evaluating Student Progress (Print-Non-Fiction). Etobicoke Board of Education. Prentice-Hall Canada (BB), 1987. 272 p. BB 5685 (\$26.70 pbk.)

Making the Grade is a comprehensive guide to student evaluation. Several approaches are described including observation, projects, tests and examinations, essay-style questions and objective-style questions. The resource discusses differentiating evaluation procedures for different levels of ability. A table of contents and an index are provided.

Suggested Use: BIO 20 - Teacher Reference|BIO 30 - Teacher Reference|
CHEM 20 - Teacher Reference|CHEM 30 - Teacher Reference|
PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference

Management of Saskatchewan Park Lands (Print-Non-Fiction). Saskatchewan Parks and Renewable Resources (SPK), 1990. 13 p. (Free of charge)

An explanation of Saskatchewan Parks and Renewable Resources policies and resources, this is essentially an information brochure on the parks. The content is limited, but it might provide the basis for further discussion and investigation.

Suggested Use: BIO 20 - Ecological Organization

Mapping Our Genes: The Genome Project and the Future of Medicine (Print-Non-Fiction). Wingerson, Lois. Dutton (MCC), 1990. 338 p. ISBN 0-515-24877-3 (\$26.95 hdc.)

Lois Wingerson's book is a collection of case studies which look at people who have a variety of genetic disorders and at the scientists who study these disorders in order to identify the gene which causes the disorder. Each of the first 10 chapters is a case study on some genetic conditions. Tourette's syndrome, cystic fibrosis, bipolar disorder, Huntington's chorea, Freidrich's ataxia, juvenile (type I) diabetes, retinal blastoma, Turner's syndrome and familial polyposis are discussed in the context of the search for, and discovery of the genes which trigger these conditions.

Suggested Use: BIO 30 - Genetics

Other Uses: Science 10

Measurement Under the Microscope (Micrometry) (Microslides). (BORE), Order No. 79703-91 (\$5.94) Set of 8 photomicrographs

Topics in this set include:

1. Calibrating planaria
2. Average onion root tip
3. Volume starfish egg
4. Volume spirogyra
5. Counting trypanosoma gambiense smear
6. Thickness taste buds
7. Growth 48-hour chick embryo
8. Growth 96-hour chick embryo

Microslides require use of microslide viewer (contact BORE).

Suggested Use: BIO 20 - Introduction

MECC: Dataquest North American Mammals. Version 1.x (Software). MECC (--), 1988. 55 p. ISBN 0-87490-486-2

Contents: 1 computer disk; 5 1/4" and 1 manual.

System Requirements: Apple IIe, IIc, or IIGS; 64K; DOS 3.3; 1 disk drive; monochrome monitor, printer optional; Dataquest composer necessary to edit or add to database.

MECC has provided a database containing diverse information on the characteristics and behaviour

of ninety-eight mammals native to North America. This material is designed as a research tool and an aid in the inquiry process as students formulate questions and use the database to access, compare, analyze, and evaluate information. This material is no longer available for purchase, but will be available in many schools.

Suggested Use: BIO 20 - Diversity of Life
Other Uses: Middle Level Science

MECC Probability Lab. Version 1.0 (Software). MECC (--), 1990. ISBN 0-7929-0149-5

System requirements are:

- an Apple II series computer with at least 128K of memory
- a single disk drive (3.5" or 5.25")
- a monochrome or colour monitor, and
- a printer (recommended, but not required)

A utility program that enables students to model problems, to investigate concepts or rules of probability, and to test ideas involving probability. Included are six experiments for use in probability lessons. Examples include flipping coins, rolling dice, drawing cards, etc. This package is no longer available for purchase, but schools may have copies which could be used for the new biology and middle level curricula.

Suggested Use: BIO 30 - Genetics
Other Uses: Science 9

The Mechanical Universe Series (Videotape). The Annenberg/CPB Project (MHP), 1986.
28 (8-23 min.) programs

Various topics in physics are covered in this series. It is highly recommended. Check the "Possible Starting Points for Acquiring Resources" section in this bibliography to obtain series duplication pricing discount information.

Titles	Dup. Order No.	Curriculum Correlation
1 Harmonic Motion Navigating in Space Newton's Laws The Apple & the Moon	V03340 V03341 V03338 V03339	PHYS 30 - Dynamics PHYS 30 - Dynamics PHYS 30 - Dynamics PHYS 30 - Dynamics
2 Angular Momentum Conservation of Energy Conservation of Momentum The Fundamental Forces	V03344 V03342 V03343 V03345	PHYS 30 - Momentum PHYS 30 - Mechanical Energy PHYS 30 - Momentum PHYS 30 - Mechanical Energy
3 Inertia Moving in Circles The Law of Falling Bodies The Millikan Experiment	V03347 V03348 V03346 V03349	PHYS 30 - Dynamics PHYS 30 - Dynamics PHYS 30 - Dynamics PHYS 30 - Nuclear Physics

4	Curved Space & Black Holes	V03353	
	Introduction to Waves	V03351	PHYS 20 - Wave Motion
	Kepler's Laws	V03350	PHYS 30 - Dynamics
	Temperature & The Gas Laws	V03352	PHYS 20 - Heat Energy
5	Electric Fields & Forces	V03354	PHYS 30 - Electricity
	Equipotentials & Fields	V03355	PHYS 30 - Electricity
	Potential Difference & Capacitance	V03356	PHYS 30 - Electricity
	Simple DC Circuits	V03357	PHYS 30 - Electricity
6	Alternating Current	V03360	PHYS 30 - Electricity
	Electromagnetic Induction	V03359	PHYS 30 - Electricity
	Magnetic Fields	V03358	PHYS 30 - Electricity
	The Michelson-Morley Experiment	V03361	PHYS 20 - Light
7	Models of the Atom	V03364	PHYS 30 - Nuclear Physics
	Special Relativity	V03365	
	The Wave Nature of Light	V03362	PHYS 20 - Light
	Wave-Particle Duality	V03363	PHYS 30 - Wave motion

Suggested Use: PHYS 20 - Waves, Heat, Light|PHYS 30 - Kinematics & Dynamics, Momentum, Mechanical Energy, Nuclear Physics, Electricity

Merrill Physics: Principles and Problems (Print-Non-Fiction). Zitzewitz, Paul W. and Robert F. Neff. Glencoe (BB), 1992. 736 p. BB 1018 (\$48.95 hdc.)

This text has excellent colour graphics and photography. It has a good section on pocket labs with simple experiments to illustrate concepts. Each chapter stresses applications, the majority of which fit the STSE approach. Excellent support materials accompany the text. A Canadian edition will be available from the Book Bureau in fall, 1992. Maxwell Macmillan Canada will leave the content essentially the same, but provide SI Units only, Canadianize spellings, replace U.S. photographs with Canadian ones and, where possible, feature Canadian physicists. The US Teacher Wrap Around Edition will remain the same. Included are a table of contents, glossary and an index.

Suggested Use: PHYS 20 - Waves, Light, Sound, Heat|PHYS 30 - Kinematics & Dynamics, Momentum, Electricity, Nuclear Physics

Micro Data Cards (Microscope slide card). Science Kit & Boreal Laboratories (BORE), Order No. 63723-00 (\$17.95 Medium set of 11)

A labelled illustration of the specimen is provided above four mounted parts prepared for microscope viewing. This particular set features a dragonfly, dandelion, butterfly, rape, bee, lily, locust, pansy, iris, prawn and tulip.

Suggested Use: BIO 20 - Agricultural Botany|BIO 30 - Animal Systems
Other Uses: Middle Level Science

The Microscope: A Tool for Learning (Microslide). (BORE), Order No. 79704-18 (\$5.94)
Set of 8 photomicrographs

Titles in this series include:

1. The letter "e" (100X)
2. Cheek cells - wm(100X, 400X)
3. Cheek cells - wm(900X)
4. Onion skin cells - wm/st(110X)
5. Hydra - is(50X) - cs(175X)
6. Paramecium - bright field (200X)
7. Paramecium - interference (200X)
8. Paramecium - scanning em(1500X)

Microslides require use of microslide viewer (contact BORE).

Suggested Use: BIO 20 - Introduction

Mothers of Invention: From the Bra to the Bomb: Forgotten Women and Their Unforgettable Ideas (Print-Non-Fiction). Vare, E.A. and G. Ptacek. Quill/William Morrow (GAG), 1987. 256 p. ISBN 0-688-08907-0 (\$12.50 pbk.)

The authors address the role of women in the field of invention. Even though the examples are American, they may be useful in the secondary sciences. The "Scientists" section may be useful in biology, chemistry and physics. This section has a science, society, technology implication. It would be good to supplement this material with more detailed information about the women inventors' successes, struggles and failures. Included are a table of contents and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|
CHEM 20 - General Reference|CHEM 30 - General Reference|
PHYS 20 - General Reference|PHYS 30 - General Reference

Other Uses: Grade 10

The Mushroom Hunter's Field Guide (Print-Non-Fiction). Smith, Alexander and Nancy Smith Weber. University of Michigan (FHW), 1980. 316 p. ISBN 0-471-85610-3 (\$23.95 hdc.)

This field guide to mushrooms includes classification, photographs, locations where the mushrooms may be found, key identification marks and edibility. It is an excellent reference for identifying mushrooms and would be especially helpful on field trips. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Diversity of Life

Native Trees of Canada. 8th ed. (Print-Non-Fiction). Hosie, R.C. Fitzhenry & Whiteside (FHW), 1990. 380 p. ISBN 0-88902-572-X (27.95 hdc.) ISBN 0-88902-558-2 (21.95 pbk.)

Good, clear non-colour diagrams and photographs provide a reference for the various forest regions of Canada. Forest types are identified and shown on maps. Various plants are identified with

pictorial and descriptive keys. Included are a table of contents and an index.

Suggested Use: BIO 20 - Agricultural Botany
Other Uses: Saskatchewan Studies: Agriculture

The Nature of Life. 2nd ed. (Print-Non-Fiction). Postlethwait, John H. and Janet L. Hopson. McGraw-Hill (MHR), 1989. 820 p. ISBN 0-07-050633-7 (\$63.95 hdc.)

American perspectives and examples are used in covering the topics. The operation of the cell and the biochemical processes, heredity, a survey of the plant, animal and protist phyla, an analysis of physiological systems in different animals and a discussion of ecological and environmental issues are included. Much emphasis is placed on human physiology with little emphasis being placed on other phyla's members. This book does not go into details of the anatomies of different species such as crayfish, grasshopper and perch which may be found in other texts. This may be useful for physics with a chapter on the body in motion. Included are a table of contents, glossary and an index. References are listed at the end of chapters.

Suggested Use: BIO 20 - Diversity of Life, Agricultural Botany|BIO 30 - Cell Structure & Function, Genetics, Animal Systems, Evolution
Other Uses: Science 9

The Nature of Things: Chaos, Science and the Unexpected (Videotape). CBC (CBC), (\$109.00)

This video could be used with upper level math, physics and computer science students. The concept of fractals and chaos are mainly studied in post-secondary institutions; however, this video is very good and may be of interest to those students who are very keen and mathematically motivated.

Suggested Use: PHYS 30 - Science Challenge
Other Uses: Mathematics, Computer Science

Nature Projects For Young Scientists (Print-Non-Fiction). Rainis, Kenneth G. (Projects for Young Scientists). Franklin Watts (GRO), 1989. 142 p. ISBN 0-531-107892 (\$17.50 hdc.)

An excellent collection of activities for science classes has been compiled in this resource. The projects and experiments explore the five kingdoms of life, from bacteria to plants and animals.

Suggested Use: BIO 20 - Agricultural Botany, Diversity of Life|BIO 30 - Animal Systems
Other Uses: Middle Level and Elementary Science

Nerve and Muscle Action (Microslides). (BORE), Order No. 66110-05 (\$5.94)

Titles in this set of 8 photomicrographs include:

1. Single cell (100X)
2. Synapses (200X) - em (300,000X)
3. Axons (400X and 200X)
4. Myelinated axons (600X)
5. Nerve-muscle junction (400X)

6. Synaptic kobs - em (300,000X)
7. Striated muscle cell (1,000X)
8. Sarcomeres - em (45,000X and 31,000X)

Microslides require use of microslide viewer (contact BORE)

Suggested Use: BIO 30 - Animal Systems

The New Book of Popular Science. Deluxe Library Edition (Print-Non-Fiction). Grolier (GRO), 1992. ISBN 0-7172-12181 (\$339.00/set hdc.)

Topics covered in each book appear to be appropriate for grades 9 - 12. Some of the topics are related to those in the curriculum; some would be good for independent research or general interest. Index includes list of Nobel Prize winners in science.

6 Volume Set

Vol. 1 Astronomy
Space Science
Mathematics

Vol. 2 Earth Sciences
Energy
Environmental Sciences

Vol. 3 Physical Sciences
General Biology

Vol. 4 Plant Life
Animal Life

Vol. 5 Mammals
Human Sciences

Vol. 6 Technology
Index

Suggested Use: BIO 20 - General Reference, Various Options|BIO 30 - General Reference, Various Options|CHEM 20 - General Reference, Independent Research|CHEM 30 - General Reference|PHYS 20 - General Reference, Science Challenge|PHYS 30 - General Reference, Science Challenge

Other Uses: Science 10

The New Migrations of People: Balancing Control and Compassion. 2nd ed. (Print-Non-Fiction). Tooke, Moyra (ed.). Teacher's Press (TCH), 1987. (\$30.00 + 1.50 postage & handling)

Tooke examines issues related to the migration of the human race including the environmental impact, social impact, legal aspects, economic impacts, and global and international issues. File articles would allow an interdisciplinary look at the effects of human migration in today's world. The articles are not directly science-related but are more pertinent to history, economics, or human geography courses. However, it is difficult to discuss immigration and human population problems without an interdisciplinary focus. These articles are most useful as a resource to help biology teachers introduce these issues concerning human migration in a class discussion or to encourage students to deal with these topics in assignments or individual and group projects. The articles provide both an international or global and a Canadian view to the problem.

Suggested Use: BIO 20 - Ecological Organization

Other Uses: Social Studies|Economics|Geography

New Theories on the Origins of the Human Race (Print-Non-Fiction). Lampton, Christopher. Franklin Watts (GRO), 1989. 158 p. ISBN 0-531-10783-3 (\$18.50 hdc.)

The author portrays several ongoing debates among supporters of the molecular clock theory, Leakey's view of *Australopithecus*, *Homo sapiens neanderthalensis* and others regarding the ancestry of modern humans. This book is easy reading for most students.

Suggested Use: BIO 30 - Genetics, Evolution

Newton At The Bat. Rev. ed. (Print-Non-Fiction). Schrier, Eric W. and William E. Allman. Charles Scribner's Sons (MMC), 1987. 205 p. ISBN 0-684-18820-1 (\$13.95 pbk.)

This is a good book for general interest and for encouraging students to take a look at how science can be used to understand what goes on around us. Concepts from science, especially physics, are used to explain occurrences related to sports. Diverse topics such as curveballs, frisbees, nutrition and knee injuries are covered. The editors appear to be observing and describing as well as formulating models. The information supports the Dimensions of Scientific Literacy. This enjoyable book was selected by the American Library Association as a "Best Book for Young Adults." Included are a table of contents and an index.

Suggested Use: BIO 30 - Animal Systems|PHYS 30 - Kinematics & Dynamics; Momentum & Equilibrium; Mechanical Energy
Other Uses: Wellness 10|Physical Education 20, 30

The Next One Hundred Years: Shaping the Fate of Our Living Earth (Print-Non-Fiction). Weiner, Jonathan. Bantam Books (BAN), 1990. 312 p. ISBN 0-553-35228-8 (\$15.95 pbk.) ISBN 0-553-05744-8 (\$24.95 hdc.)

Weiner cites many studies about the ecology of the world today. He gives a brief history of scientific advancement and covers major problems in the biosphere, summarizing their causes. Projections for the future are also given. This resource supports all the DSLs except Scientific and Technical Skills. Included are a table of contents and index.

Suggested Use: BIO 20 - Ecological Organization|CHEM 20 - Independent Research|CHEM 30 - Independent Research

1989 Yearbook of Science and the Future (Print-Non-Fiction). Encyclopaedia Britannica (EBP), 1988. 510 p. State year. No order no. is necessary (\$35.95 hdc.)

The first half of the volume comprises feature articles by different authors. Topics are as diverse as "energy from the ocean" and "volunteers for science". Critical thinking skills may be refined using these articles. The second half of the volume provides an overview of science related information for the year, grouped according to various subject headings. A table of contents is provided for each section. There is an index for the entire volume.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10

1990 Yearbook of Science and the Future (Print-Non-Fiction). Encyclopaedia Britannica (EBP), 1989. 510 p. State year. No order no. needed (\$37.95 hdc.)

Feature articles by different authors comprise the first half of the volume. Sample articles include 'Chaos: Does God Play Dice' which discusses apparently random natural phenomena and 'Energy Technologies for the 21st Century'. Critical thinking skills may be promoted using these articles. The second half of the volume provides an overview of science-related information for the year. This information is grouped according to various subject headings. A table of contents is provided for each section. There is an index for the complete volume.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

Other Uses: Science 10

1991 Environmental Scan: National and International Environment (Print-Non-Fiction). Resources Futures International and Institute for Research on Public Policy. Canadian Council on Ministers of the Environment (CCME), 1991. 102 p. (Free of charge)

This document covers global issues such as climate change, forestry, and long range transport of air pollutants plus bilateral issues such as acid rain and the North American Waterfowl Management Plan. National issues such as environmental protection and rehabilitation, renewable resource management and energy are also addressed. Included are a table of contents and a bibliography.

Suggested Use: BIO 20 - Ecological Organization

Nuclear War: Opposing Viewpoints (Print-Non-Fiction). Bender, David L. and Bruno Leone, ed. (Opposing Viewpoints). Greenhaven (NEL), 1985. 249 p. ISBN 0-89908-353-6 (\$13.50 pbk.)

The Opposing Viewpoints series uses various sources such as journals, books, newspapers, as well as statements and position papers from a range of individuals and organizations to provide discussion activities on controversial topics. The viewpoints expressed in this book address questions such as "How could a nuclear war begin?" "Would humanity survive such a war?" "Will civil defense work?" "Will nuclear arms agreements work?" and "Can space weapons reduce the risk of nuclear war?" This material is excellent for developing critical thinking skills. Included are a table of contents, bibliography and an index.

Suggested Use: PHYS 30 - Nuclear Physics

Other Uses: Science 10

Numbers In Science (Print-Non-Fiction). Goodstein, Madeline P. Addison-Wesley (ADD), 1987. 87 p. ISBN 0-201-22118-7 (\$18.00 pbk.)

Goodstein gives clear explanations together with drill and practice exercises for mathematical operations which are essential in science. This resource covers some of the DSLs in that it uses an empirical approach, requiring quantification and interpretation of data. This resource demands the

use of quantitative analysis and promotes a respect for logic. It is a good reference book for teachers of secondary science. Included is a table of contents.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10

An Old Man's Toy (Print-Non-Fiction). Zee, A. Collier Books (MMC), 1990. 272 p. ISBN 0-02-040915-X (\$12.95 pbk.)

This resource is enjoyable and interesting to read. It is a layman's description of general relativity, written in a very humanistic manner. It is a gambol through the history of science and provides a glimpse of the physics of the future. Through the central theme of gravity, Zee is able to introduce many theories in the quantum mechanics of particle physics. His style of writing, using many analogies, brings across many difficult concepts, notably the superstring theory. This is an excellent popular work of wide scope. The level of prerequisite physics knowledge required by the reader would place it at an advanced grade 12 level. Included are a table of contents and an index.

Suggested Use: PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference

One Body (Software). SUN. (Physics Explorer). Wings for Learning (Sunburst) (SUN), 1991. Order No. 3679-02 (\$160.00)

The software is based on the concept of microworlds. The user is in control of developing a microworld where many variables may be controlled. The choice of variables depends on the particular module being used. For instance, the *One Body* module has a ruler, protractor, velocity tool, force tool, gravity tool and damping coefficient tool. The high degree of user control built into the programs in the *Physics Explorer* series means the user may change one or more variables at a time to see what effect they will have on the rest of the system. However, this much freedom comes at a price. It would be very easy for a student (or teacher) who is new to this type of software to be overwhelmed by the number of available choices. If too many variables are changed at one time, it becomes almost impossible to develop a sense of what relationships exist among the variables.

Suggested Use: PHYS 20 - Waves|PHYS 30 - Kinematics & Dynamics, Electricity, Nuclear Physics

One Minute Readings: Issues In Science, Technology and Society (Print-Non-Fiction). Brinckerhoff, Richard F. Addison-Wesley (ADD), 1992. 136 p. ISBN 0-201-23157-3 (\$11.71 pbk.)

Brinckerhoff has compiled approximately 80 short and to-the-point articles on issues in the areas of biology, chemistry, physics, earth and space science and social science. The articles could be used as attention grabbers or highlights for lessons. The author proposes that the readers may not be able to find the "right" answers to the questions raised, but the best ones. He encourages the

readers to debate their "best possible" answer with someone whose answer differs from the one they have proposed. There is a strong Science-Technology-Society Interrelationship presentation.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|Chem 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10

Order Out of Chaos: Man's New Dialogue With Nature (Print-Non-Fiction). Prigogine, Ilya and Isabelle Stengens. Bantam Books (BAN), 1984. 349 p. ISBN 0-553-34363-7 (\$15.50 pbk.)

This is a very intense book that challenges the reader to examine the changing views of science and the concept that order and organization can actually arise spontaneously out of disorder and chaos through a process of self-organization. This is considered by some to be an excellent book for teachers to read as a background for the changing views in science and technology. It would not be considered a book for students unless they were keenly interested in the topic. Included are a table of contents and an index.

Suggested Use: PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference

Our Common Future (Print-Non-Fiction). World Commission on Environment and Development. Oxford University (OUP), 1987. 400 p. ISBN 0-19-282080-X (\$14.95 pbk.)

Our Common Future is the culmination of reports presented to The World Commission on Environment and Development, set up as an independent body in 1983 by the United Nations headed by Gro Harlem Brundtland, Prime Minister of Norway. This commission began looking at sustainable development and the sustainable agriculture movement. Included are a table of contents, glossary and an index.

Suggested Use: BIO 20 - Ecological Organization

Our Endangered Earth: What We Can Do To Save It (Print-Non-Fiction). Langone, John. Little, Brown (LIT), 1992. 197 p. ISBN 0-316-51415-2 (\$20.95 hdc.)

A useful resource for middle level to secondary science, this material deals with sensitive issues. It may be considered very general for secondary students, but excellent for middle level students or secondary ones in a modified program. It is an introductory reader on the environmental impact of most of the significant forms of pollution such as chemical, noise, air, water, waste and radiation, and the impact of global warming, deforestation, wildlife extinction, poverty and overpopulation and energy. This is a great resource to get students thinking about how these aspects of science affect them in their daily lives. Included are a table of contents, glossary and an index.

Suggested Use: BIO 20 - Ecological Organization|CHEM 20 - Independent Research, Molecules & Compounds|CHEM 30 - Independent Research|PHYS 30 - Nuclear Physics
Other Uses: Science 10

Out to Learn: Guidelines and Standards for Outdoor Environmental Education. 2nd ed. (Print-Non-Fiction). Saskatchewan Outdoor and Environmental Education Association and Saskatchewan Education (SOEEA), 1991. 111 p. No order no. needed (\$8.00 pbk.)

This manual provides an administrative guide to planning, organizing and conducting an outdoor environmental education experience for kindergarten to grade 12 students. It focuses on environmental protection, planning, health and safety, and responsibilities of groups and individuals. Specific learning activities which make up the educational program during an outdoor environmental education experience are discussed only briefly within the context of the Common Essential Learnings. A list of community organizations and educational programs is given in an appendix.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life, Agricultural Botany|
BIO 30 - Various Options

Ozone (Print-Non-Fiction). Gay, Kathlyn. (An Impact Book). Franklin Watts (GRO), 1989. 128 p. ISBN 0-531-10777-9 (\$17.50 hdc.)

The effects of ozone on the environment are dealt with by the author. Pollution in the lower atmosphere due to ozone, the decrease of ozone in the stratosphere and research techniques used to monitor ozone levels are described. The book is easy to read and informative. One drawback is the reference to U.S. legislation. Included are a table of contents, bibliography and an index.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Reaction Kinetics

Ozone Crisis: The 15-year Evolution of a Sudden Global Emergency (Print-Non-Fiction). Roan, Sharon. John Wiley & Sons (WIL), 1990. 1270 p. ISBN 0-471-52823-4 (\$13.95 pbk.)

Written by a scientist, this book reflects the author's opinions which show a science bias based on the experimental evidence of a 15-year analysis of the ozone crisis. This is a good resource which covers all of the Dimensions of Scientific Literacy, but emphasizes A, C, D and F.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research, Reaction Kinetics

Paradise Won: The Struggle for South Moresby (Print-Non-Fiction). May, Elizabeth. McClelland & Stewart (MCC), 1990. 318 p. ISBN 0-7710-5772-5 (\$9.98 hdc.)

May presents a behind-the-scene look at the logging controversy in South Moresby, Haida Gwaii and the eventual creation of the wilderness park area. The ecological and Aboriginal lobbies versus the forest corporations and government ministries is discussed. This is a controversial, yet what appears to be a well documented, chronology of political and legal actions by both sides.

Suggested Use: BIO 20 - Ecological Organization, Various Options
Other Uses: Science 10, Social Studies, Native Studies

Path of the Paddle: An Illustrated Guide to the Art of Canoeing (Print-Non-Fiction). Mason, Bill. Key Porter Books (KEY), 1984. ISBN 0-919493-38-6 (\$19.95 pbk.)

This is excellent material that is beautifully illustrated. There is an excellent section on reading and manoeuvring in whitewater situations. It has highly suitable Indian and Métis content and is useful as a student and teacher resource.

Suggested Use: PHYS 30 - Fluid Mechanics, Kinematics & Dynamics
Other Uses: Science 10

Path of Water In Plants (Microslides). (BORE), Order No. 79703-96 (\$5.94)

Titles in this set of 8 photomicrographs include:

1. Epidermal cell - root hair (260X)
2. Buttercup root (40X)
3. Basswood stem (18X), red clover stem (34X)
4. Celery (40X), basswood (100X)
5. Celery vascular bundle (40X)
6. Lilac leaf (60X)
7. Network of veins in leaf (40X)
8. Air space and stomata (480X)

Microslides require use of microslide viewer (contact BORE).

Suggested Use: BIO 20 - Agricultural Botany

People and Caribou In the Northwest Territories (Print-Non-Fiction). Hall, Ed, ed. Government of the Northwest Territories. Dept. of Renewable Resources (NWT), 1989. 190 p. ISBN 0-7708-7181-X (\$20.00 pbk.)

People and Caribou has chapters on stories and legends, clothing and caribou use, past and present, that give the reader information about the culture of peoples dependent on caribou. The biology and management of the barren-ground caribou is reported by experts.

Suggested Use: BIO 20 - Ecological Organization
Other Uses: Middle Level Science

Peterson's Job Opportunities for Engineering, Science, and Computer Graduates 1992. 13th ed. (Print-Non-Fiction). Peterson's Guides (MON), 1991. 589 p. ISBN 156079-072-5 (\$32.95 pbk.)

This is an American resource, but it lists some locations in Canada for job placement. The guide gives employer profiles and descriptions. There is also a classification by opportunities for major fields of study and special interest areas. It would help a high school student interested in pursuing a career in the sciences to see what types of opportunities are available and the type of formal education needed for specific jobs. Ways of gaining experience in the area, such as summer job

placement, internship and co-op study programs are also listed. Application information is given. Included are a table of contents and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

Other Uses: Computer Science, Agriculture, Mathematics, Geology

pH of Saskatchewan Soils (Map). (SIP Publication M84). University of Saskatchewan. Saskatchewan Institute of Pedology (USA), 1987.

The Institute of Pedology, University of Saskatchewan has produced a four colour map showing the pH levels of Saskatchewan soils. The leaflet also provides brief information on soil pH values.

Suggested Use: BIO 20 - Ecological Organization

Other Uses: Middle Level Science

Photonics: The New Science of Light (Print-Non-Fiction). Burkig, Valerie C. Enslow (MEA), 1986. 128 p. ISBN 0-89490-107-9 (\$29.95 hdc.)

This resource is organized as if it is an essay on light. Students would find it handy for doing reports on specific topics related to light. It does not provide material to help students to develop skills in experimentation and mathematics. The illustrations are not colourful and the dull cloth cover gives the book a 1930s look which may make the resource unattractive to students. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: PHYS 20 - Light

Photosynthesis (Microslides). (BORE), Order No. 79703-59 (\$5.94)

Titles in this set of 8 photomicrographs include:

1. Green leaf - cs/st (110X)
2. Green leaf - cs/st (350X)
3. Root hair - wm/st (35X)
4. Vascular bundles - cs/st (145X)
5. Leaf - with and without sunlight - wm/st (35X)
6. Leaf - variegated - wm/st (35X)
7. Starch grains - wm/unstained (135X)
8. Bean seed - wm/st (2X)

Microslides require use of microslide viewer (contact BORE)

Suggested Use: BIO 30 - Cell Structure & Function

PhysicAL: An Activity Approach to Physics (Print-Non-Fiction). Martin, Brian and Cornelia Spronk. LeBel (LEB), 1989. 571 p. ISBN 0-920008-30-5 (\$45.95 hdc.)

Nineteen units provide lab activities which will assist teachers in delivering physics lessons. Included are a table of contents, glossary and index.

Suggested Use: PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference

The Physics 12 Handbook: A Student Guide. 2nd ed. (Print-Non-Fiction). Roberts, Michael. LPL Publishers (LPLP), 1992. 224 p. (\$11.95 pbk.)

The Physics 12 Handbook was written on the basis of British Columbia's present senior physics curriculum. It contains a wide variety of detailed solutions to physics problems. Many of the comments relating to exams are general, such as those about preparing for a final exam, and are applicable to students in other provinces as well. This edition contains sample final exams with solutions.

Suggested Use: PHYS 30 - Mechanical Energy, Electricity, Kinematics & Dynamics, Momentum

Physics for Poets (Print-Non-Fiction). March, Robert H. Contemporary Books (FHW), 1978. 287 p. ISBN 0-8092-55324 (\$16.50 pbk.)

March's book is very highly recommended. The title may be misleading. This resource contains a selection of essays on classical and modern physics. The Nature of Science is revealed throughout the book. The theoretical challenges that profoundly influenced physics are described beautifully. This is excellent reading material for the serious physics student.

Suggested Use: PHYS 20 - General Reference|PHYS 30 - General Reference

Physics In Action (Print-Non-Fiction). Dyer, Frank S. and William R. Tallman. Harcourt Brace Jovanovich (BB), 1991. 483 p. BB 1019 (\$41.90 hdc.) BB 1020 (\$41.90 Teachers resource manual)

One of the strongest features of this resource is that it is very readable for the students with an interesting activity oriented approach. It is particularly strong in providing resource material for optional units. This material would make an excellent introduction to each topic, suitable for teachers without a physics background who must teach physics. This text may not be in depth enough for experienced physics teachers. Included are a table of contents, glossary and index.

Suggested Use: PHYS 20 - Wave, Light, Sound, Heat|PHYS 30 - Kinematics & Dynamics, Mechanical Energy, Electricity, Nuclear Physics

The Physics of Dance (Print-Non-Fiction). Laws, Kenneth. Schirmer Books (MMC), 1984. 160 p. ISBN 0-02-873360-6 (\$23.75 pbk.)

Laws provides a qualitative analysis of the physics of dance. Important physical principles such as mass, acceleration, centre of gravity, and momentum are considered through this interesting biomechanical application. Technical dance movements such as balancing, jumping, pirouettes,

arabesque turns, and fouette turns are analyzed in depth. The physical principles of dance are presented in a clear, conceptual manner. The book is very technical, appealing to serious physics students who have an interest in dance. The book also reveals how physics, and understanding the nature of science, can be extended and applied to human biomechanics. The Dimensions of the Nature of Science, Science-Technology-Society-Environment Interrelationships, the Values that Underlie Science and Science Related Interests and Attitudes are enhanced by this resource. Included are a table of contents, glossaries of dance terms and physics terms and an index.

Suggested Use: PHYS 30 - Kinematics & Dynamics, Applications of Kinematics & Dynamics
Other Uses: Arts Ed

Physics: Principles With Applications. 3rd ed. (Print-Non-Fiction). Giancoli, Douglas C. Prentice-Hall (PRN), 1991. ISBN 0-13-672510-4 (\$49.00 hdc.)

This is a very mathematical approach to introductory college physics. Teachers would find it useful as a source of ideas for examples while teaching and an excellent source of good questions and problems.

Suggested Use: PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference

Physics Today 1 (Print-Non-Fiction). Wolfe, T.J. Elgin, et al. Prentice Hall (BB), 1989. 778 p. BB 1025 (\$50.10 student edition hdc.) BB 1032 (\$132.80 teacher's edition)

Considered suitable for the average student, this text is a good support for the DSLs. It adequately covers the Physics 20 course topics, but needs supplementation for Physics 30 topics. Included are a table of contents and an index.

Suggested Use: PHYS 20 - Waves, Light, Sound, Heat|PHYS 30 - Kinematics & Dynamics, Momentum, Mechanical Energy, Fluid Mechanics, Electricity, Nuclear Physics

Poisoned Skies: Who'll Stop Acid Rain. 2nd ed. (Print-Non-Fiction). Howard, Ross and Michael Perley. Stoddart (IRW), 1991. 248 p. ISBN 0-7737-5446-6 (\$19.95 pbk.)

The authors tell of acid rain, of the damage it is causing the ecosystem and our health, of the staggering costs in not cleaning up the problem, and of decades-long battles to move governments, industry and complacent populations to admit to the problem. Canadian and U.S. maps are used. This is interesting reading and would be a good student and teacher reference. Included are a table of contents and an index.

Suggested Use: CHEM 30 - Acid-Base Equilibria

The Practical Botanist (Print-Non-Fiction). Imes, Rick. Simon & Schuster (IRW), 1990. 160 p. ISBN 0-671-69305-0 (\$19.95 pbk.)

Imes has written a good, easy to read and follow botanical resource with colourful and useful illustrations. The contents include some basics of botany, how to practice botany, urban botany,

botany on agricultural lands, gardening and various ecosystems. Included are a table of contents, glossary and an index.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life, Agricultural Botany
Other Uses: Middle Level Science

A Prairie Coulee (Print-Non-Fiction). Willock, Thomas. Lone Pine (LPP), 1990. 95 p.
ISBN 0-919433-56-1 (\$8.95 pbk.)

This is an excellent companion to Gayton's *Wheatgrass Mechanism*. Together they form a comprehensive resource for almost all of the grade 11 biology curriculum. The book is indispensable for those who want to use field trips to southern and western Saskatchewan as integral parts of their Biology 20 courses. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life.

Prentice Hall Chemistry: The Study of Matter. 3rd. ed. (Print-Non-Fiction). Dorin, Henry, Peter E. Demmin and Dorothy L. Gabel. Prentice Hall (BB), 1989. 816 p. BB 6526 (\$65.26 student edition) BB 6527 (\$83.70 annotated teacher's edition) BB 6528 (\$267.85 teacher resource binder)

The material is strong in terms of supporting critical and creative thinking, content and concept mastery, cumulative and summative evaluation, course objectives and in its variety of instructional techniques. This is an easy to read book with student appeal. The text is attractively complemented by pictures and diagrams. Sections such as "Explorations" and "Can You Explain This" would provide strong support for the STSE Dimension. The material is American in content. Included are a table of contents, glossary and an index.

Suggested Use: CHEM 20 - Introduction to Chemistry, Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concepts and Stoichiometry, Behaviour of Gases, Organic Chemistry|CHEM 30 - Energy Changes in Chemical Reactions, Reaction Kinetics, Equilibrium, Solubility & Solutions, Acid-Base Equilibria, Oxidation & Reduction

Probing Levels of Life: A Laboratory Manual (Print-Non-Fiction). Humer, Paul J., et al. Merrill (BB), 1989. 231 p. BB 6341 (\$13.00 pbk.) BB 6342 (\$20.70 teacher's edition)

This manual encourages students to think about what they see, question their observations and interpretations and then extend them. The manual presents problems in an open-ended manner.

Suggested Use: BIO 20 - Introduction, Agricultural Botany, Ecological Organization, Diversity of Life|BIO 30 - Chemical Basis of Life, Cell Structure & Function, Genetics, Animals Systems, Evolution

Project Wild (1990) Activity Guide (Print-Non-Fiction). (Canadian Wildlife Federation). Canadian Wildlife Federation (--), 1990. 462 p. ISBN 1-55029-036-3 (No price - Must take course and materials are free)

The 1990 version of the Project WILD activity guide contains both aquatic activities and "aquatic extensions" to many of the activities from the previous editions. Project WILD activity guides are free to teachers attending a Project WILD workshop. Those attending the workshops in 1991 and subsequent years will receive the 1990 edition of the guide. The guide can not be purchased. (Contact the Project WILD coordinator at 787-2314, Regina.)

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life
Other Uses: Science 10|Middle Level Science

Prudent Practices for Handling Hazardous Chemicals In Laboratories (Print-Non-Fiction). National Research Council, Committee on Hazardous Substances in the Laboratory. National Academy (NAP), 1981. 291 p. ISBN 0-309-03128-1 (\$24.95 hdc. U.S. funds)

While the book and many of its recommendations are written for the large commercial or university laboratory, the information on hazards is excellent. A teacher with knowledge of the hazards could adapt the recommendations to the secondary school setting.

Suggested Use: CHEM 20 - Introduction to Chemistry, Independent Research, Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concept & Stoichiometry, Behaviour of Gases, Consumer Chemistry, Organic Chemistry, Teacher Developed Unit|CHEM 30 - Review of Basic Principles, Independent Research, Energy Changes in Chemical Reaction, Reaction Kinetics, Acid-Base Equilibria, Oxidation & Reduction

Race to Save the Planet (Videodisc). WGBH Educational Foundation. (SCH), Order No. SSCS 2-019 (\$495.00)

Components: 12" videodiscs; 3.5" Macintosh discs containing HyperCard stacks; user's handbook; teaching guide; icon reference chart; and information sheet.

System Requirements: Macintosh computer with a 20 megabyte or larger hard disc; a videodisc player (Pioneer 2200, 4200, 6000A, 6010A, or 8000; Sony 1200, 1450, 1500, or 1550); a colour video monitor (composite type); and RS-232 cables to connect videodisc player and Macintosh. Requires System 6.05 or higher.

Water and air pollution, waste disposal, the global warming theory, citizen activism and other topics are presented as worldwide issues and as case studies that illustrate how we are confronting the issues in specific parts of the world. *Race to Save the Planet* is available on videodisc for teachers who want the ease of instantaneously accessing specific information on this program by way of a computer. In the interactive part of the package, students learn about the interrelationships between environmental and economic decisions as they play the role of president of a juice factory in the Activity. The VideoEditor lets you put together sequences of video clips and slides for customized video presentations. See the entry below for videotape duplication information on this program from Media House Productions.

Race to Save the Planet Series (Videotape). (MHP), Approx. 1 hr each - 10 programs

See annotation above.

Titles in this series are: Dup. Order No.

The Environmental Revolution	V5077
Only One Atmosphere	V5078
Do we Really Want to Live This Way?	V5079
In the Name of Progress	V5080
Remnants of Eden	V5081
More For Less	V5082
Save the Earth - Feed the World	V5083
Waste Not Want Not	V5084
It Needs Political Decisions	V5085
Now or Never	V5086

Suggested Use: BIO 20 - Ecological Organization|CHEM 20 - Independent Research|
CHEM 30 - Independent Research

Other Uses: Science 10

Rainbows, Curve Balls and Other Wonders of the Natural World Explained (Print-Non-Fiction). Flatow, Ina. (Perennial Library I Series). Harper and Row (HCP), 1988. 240 p.
ISBN 0-06-097237-8 (\$10.95 pbk.)

Natural phenomena and interesting questions are given complete, but not lengthy, explanations. In connection with each concept there are often simple demonstrations of the principle. Included are a table of contents and an index.

Suggested Use: CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 -
General Reference|PHYS 30 - General Reference

Other Uses: Science 10

Rap-O-Matics (Videotape). LRS Trimark (CHI), 1991. 12 min. (\$14.95)

Through drama, song and rap music, the viewer is shown the necessity of staying in school. The importance of keeping career options open by taking science and math is also stressed.

Suggested Use: CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 -
General Reference|PHYS 30 - General Reference|BIO 20 - General
Reference|BIO 30 - General Reference

Other Uses: Mathematics, Career Education

Reading About Biology (Print-Non-Fiction). Heinemann Educational Books (IRW), 1986. 64 p.
ISBN 0-435-57522-8 (\$12.55 pbk.)

Two page articles on 30 various topics such as diets around the world and cells are given. Each article is followed by a set of questions. The short, easy to read presentation may grasp the attention

of students. The information presented may be used as a start for further questioning and research. Included are a table of contents and an index.

Suggested Use: BIO 20 - Agricultural Botany|BIO 30 - Chemical Basis of Life, Genetics, Animal Systems|CHEM 30 - Acid-Base Equilibria
Other Uses: Science 10

Reading About Chemistry (Print-Non-Fiction). Martyn, Berry and Stewart Kellington. Heineman Educational Books (IRW), 1989. ISBN 0-9692230-3-X (\$14.95 pbk.)

Each of thirty topics is introduced by a two-page overview. Topics discussed include periodicity, chemical reactions, salts, soaps, detergents, pollution, insecticides and hydrology. Included are a table of contents and an index.

Suggested Use: CHEM 20 - Atoms & Elements, Organic Chemistry|CHEM 30 - Acid-Base Equilibria, Oxidation & Reduction
Other Uses: Science 10

Rediscovery (Print-Non-Fiction). Henley, Thom. Western Canada Wilderness Committee (WCWC), 1989. ISBN 0-9692230-3-X (\$14.95 hdc.)

This is an excellent, comprehensive handbook for teachers who wish to bolster the self-esteem of Aboriginal and non-Aboriginal students while simultaneously promoting a respect for the environment. This material is presented within the context of Aboriginal traditions. This book contains many colour photographs and an activity guide.

Suggested Use: BIO 20 - Diversity of Life, Ecological Organization|BIO 30 - Teacher Reference
Other Uses: Science 10

Relativity for the Layman: A Simplified Account of the History, Theory and Proofs of Relativity. Rev. ed. (Print-Non-Fiction). Coleman, James A. Penguin (PBC), 1969. 143 p. ISBN 0-14-0135960 (\$12.95 pbk.)

The title of this book aptly explains its contents. It could be used as a resource book for the introduction of relativity. This material may be useful for independent reading by gifted students. The author does not use SI metrification.

Suggested Use: PHYS 30 - Atomic Physics

Relativity Visualized (Print-Non-Fiction). Epstein, Lewis Carroll. Insight (INP), 1988. 209 p. ISBN 0-935218-05-X (\$17.95 U.S. pbk.)

Epstein attempts to explain relativity in simple, straight forward terms. The material is easy to read and is interesting. Models are constructed to assist the reader's understanding. Occasionally, true or false questions are used to stimulate and challenge the reader. Non-SI units and some American content are used. Included are a table of contents and an index.

Suggested Use: PHYS 30 - Atomic Physics

The Risks of Nuclear Power: A Video Interview With Bernard Cohen (Videotape). (Scientists Speak Out) Hawkhill (HAI), 1991. 33 min. Order No. 502 (\$49.00 U.S.)

A distinguished physicist presents arguments supporting nuclear fission. Environmental issues are given strong emphasis. Radon gas in homes, risk analysis, alternative energy sources, and pesticides are other peripheral issues covered.

Suggested Use: PHYS 30 - Atomic Physics
Other Use: Science 10

The Role of Animal Agriculture In the Ecosystems: Resource Kit (Print-Non-Fiction). Beef Information Centre (BIC), (Free of charge)

This is a collection of materials from which teachers could select things of use to them. The material examines the myth of the relationship between extensive use of cattle, increasing methane levels, global warming, and, as an aside, nutrition. The materials may be photocopied for classroom use. It primarily supports STSE Interrelationships, Values that Underlie Science and Science-Related Interests and Attitudes. This material was previously distributed to Saskatchewan secondary schools.

Suggested Use: BIO 20 - Ecological Organization
Other Uses: Science 10

Safety In Academic Chemistry Laboratories. 5th ed. (Print-Non-Fiction). American Chemical Society, Committee on Chemical Safety (AMCS), 1990. 73 p. ISBN 0-8412-1763-7 (\$3.00 U.S. pbk.)

This book has a very good section on safe laboratory techniques. Appendix III contains a list of incompatible chemicals and Appendix VII contains a facilities safety checklist. Considered an excellent resource for all chemical laboratories, this resource deals with personal protection, lab techniques, chemical hazards, and emergency procedures with an overview for administrators. The manual is intended to provide basic guidelines for safe practices. Included are a table of contents and an index.

Suggested Use: CHEM 20 - General Reference|CHEM 30 - General Reference
Other Uses: Science 10

Safety Oriented Guidelines for Outdoor Education (Print-Non-Fiction). Hanna, Glenda. CAHPER (CAHPER), 1986. 86 p. ISBN 0-919068-52-9 (\$16.95 pbk.)

Guidelines and various forms for use when planning field trips are provided in this excellent coil-bound book. Some of the checklists such as those for equipment needed on various types of trips may be especially useful. Included is a table of contents.

Suggested Use: BIO 20 - Various Options
Other Uses: Science 10

Saskatchewan Biotechnology (Print-Non-Fiction). Saskatchewan Science and Technology (SED), 1988. (Free of Charge)

A review of the state of biotechnological research being done in Saskatchewan and how this research applies to Saskatchewan's people are presented in this kit. Contents include a collection of teacher resource materials, student information sheets and student activities. There is also a master for a game board. Presently out-of-print, Saskatchewan Economic Development is willing to photocopy their master upon request for limited numbers. One copy of this resource was sent free of charge to secondary schools. This material is especially strong in showing STS interrelationships. Excerpts from the teacher guide may be reproduced with credit given to the Government of Saskatchewan.

Suggested Use: BIO 30 - Genetics

Saskatchewan Electrical Energy Options Review Panel Final Report to SaskPower (Print-Non-Fiction). SaskPower (SKP), 1991. 216 p. (Free of charge)

The demand and supply sides of electrical generation are examined for Saskatchewan. Background information on energy sources such as coal, hydro, natural gas, nuclear, biomass, wind, solar, thermal, geothermal, oil and future advanced technologies are highlighted. Key Science Concepts and Science-Technology-Society-Environment Interrelationships are supported by this material. Included are table of contents, glossary and bibliography.

Suggested Use: BIO 20 - Ecological Organization
Other Uses: Middle Level Science

Saskatchewan Field Crops (Kit). Saskatchewan Education/Saskatchewan Agriculture (MHP), 1983.

This kit was produced by the above agencies in 1983 and distributed to all Saskatchewan middle and secondary level schools. It consists of a filmstrip with an audio cassette tape sound track, a transcript containing the text and pictures from the above, and a set of line drawings and fact sheets on eleven major crops. The kit is now out of print. It is an excellent resource for the Agricultural Botany unit. The audiotape only is available from Media House.

Suggested Use: BIO 20 - Agricultural Botany

Saskatchewan Flora and Fauna: Kingdoms of the Spore, An Invertebrate World (Kit). Saskatchewan Education (BB), 1984. BB 2505 (\$20.00)

See annotation below.

Each kit contains 4 filmstrips, 4 audiotapes, 2 booklets, 1 teacher's guide.

Suggested Use: BIO 20 - Diversity of Life

Saskatchewan Flora and Fauna 2: Vertebrates (Kit). Saskatchewan Education (BB), 1987. BB 290 (\$25.00)

Each kits contains 3 filmstrips, 3 audiotapes and 1 teacher's guide.

The flora and fauna kits were distributed to all schools in Saskatchewan during 1984 and 1987, respectively. Each consists of a filmstrip with a cassette audio tape sound track, a transcript of the sound track, and a teacher's guide. Some species found in Saskatchewan are used to illustrate groups of organisms. The kits are invaluable for the teacher who wishes to set the study of biology in a Saskatchewan context, and who wishes to make best use of field trips.

Suggested Use: BIO 20 - Diversity of Life

Science & Religion: Opposing Viewpoints (Print-Non-Fiction). Rohr, Janelle, ed. (Opposing Viewpoints). Greenhaven Press (NEL), 1988. 233 p. ISBN 0-89908-406-0 (13.50 pbk.) ISBN 0-89908-431-1 (23.99 hdc.)

This could be used as a resource for preparation for debates. The editors attempt to present balanced and opposing viewpoints of the debate between Judeo-Christian religion and western science. The topics of evolution, the role of religion in science, origin of the universe, origin of life, and whether ethics should limit scientific research are presented. Several activities focus on critical thinking skills such as evaluating primary sources, recognizing provable statements, recognizing deceptive arguments, and understanding words in context.

Suggested Use: BIO 30 - Evolution, Genetics

Science Abled (Videotape). University of Michigan School of Dentistry (KIN), 1987. (\$245.00 each program) Order No. 7770C (\$325.00 for both)

Disabled scientists in these two programs encourage talented young people with physical and/or sensory disabilities to pursue coursework and careers in science or technology. A resource guide to each program includes biographical sketches of featured scientists and a list of organizations dealing with disability concerns.

Program 1. Science Abled: Good Minds at Work - Addressed to students, this program features female and male scientists of varying occupations, levels of education, disabilities, ethnic backgrounds, and life-styles. Included are a science teacher, a computer programmer, a psychiatrist, a physicist, a medical technologist, a systems engineer, and a chemistry professor. It is available with closed captions.

Program 2. Science Abled: Return on Equity - Intended primarily for employers, this program includes the opinions of supervisors, co-workers, and other employees about the contributions of disabled scientists in general, and those people who serve as role models featured in the first program in particular. It addresses other general concerns about employing people with disabilities.

Awards received by this videotape are the Presentation Award, Superfest XV, Corporation for Disabilities & Telecommunication, 1988, for program 2; Awards Portfolio, Media & Methods, 1990, for program 1.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

Science Edition 3 Series (Videotape). TVOntario (MHP), 1984. 13 - 29 min. programs

Topics in biology, chemistry and physics are covered in this series. Check "Possible Starting Points for Acquiring Resources" section in this bibliography to obtain information on pricing discounts for series duplication.

Topics	Dup. Order No.		Curriculum Correlation
Interactive TV advertising, Neonatal ICUs Lighting - holograms	Program 3	V03302	Bio 30 - Animal Systems
	Program 5	V03304	Phys 20 - Light, Optics, Sound
Speaker technology	Program 11	V03310	Phys 20 - Sound
Occupational hazards of the performing arts	Program 12	V03311	Bio 30 - Animal Systems
Fireworks, mosquitoes	Program 13	V03312	Chem 20 - Independent Research Bio 20 - Diversity of Life

Suggested Use: BIO 20 - Animal Systems, Diversity of Life|BIO 30 - Animal Systems|PHYS 20 - Optics, Light, Sound|CHEM 20 - Independent Research

Other Uses: Science 10|Middle Level Science

Science Fair (Print-Non-Fiction). Iritz, Maxine Haren. TAB Books (BORE), 1987. 88 p.
Order No. 68455-00 (\$13.14 pbk.)

This well illustrated book explains how to make a good science fair project. It includes information on choosing a topic, writing a background research paper, formulating a hypothesis, conducting an experiment, drawing conclusions and creating a display. Some of the regulations and categories are American and do not apply to Canadian science fairs; however, the resource is considered an excellent guide for science fairs, especially for a student or teacher who has not previously been involved in a science fair project. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Various Options|BIO 30 - Various Options|CHEM 20 - Independent Research|CHEM 30 - Independent Research|PHYS 20 - Science Challenge|PHYS 30 - Science Challenge

Other Uses: Science 10

Science Fairs: Organization, Regulations Judging and Project Ideas (Print-Non-Fiction). Youth Science Foundation (YSF), 1990. 97 p. No order no. needed (\$12.00 pbk.)

These are the definitive guidelines for science fair projects entered in regional, provincial and Canada-wide science fairs. Project ideas are organized by grade and classified by subject area.

Suggested Use: BIO 20 - Various Options|BIO 30 - Various Options|CHEM 20 - Independent Research|CHEM 30 - Independent Research|PHYS 20 - Science Challenge|PHYS 30 - Science Challenge
Other Uses: Science 10, Middle Level Science

Science In Cinema: Teaching Science Fact Through Science Fiction Films (Print-Non-Fiction). Dubeck, Leroy W., Suzanne E. Moshier, and Judith E. Boss. Teachers College (GUC), 1988. 208 p. ISBN 0-8077-2915-9 (\$25.95 pbk.) ISBN 0-8077-2916-7 (\$28.95 cloth)

Responding to a need for improvement in the teaching of science, the authors propose a method utilizing science fiction films to illustrate scientific principles. By using modern technology, such as the VCR, in combination with commentary during the film and structured, post-film discussions, the authors believe that students achieve a better understanding of scientific principles and consequently develop motivation to explore the sciences on their own. The book includes in-depth analyses of the science content of ten films and less detailed discussions of twenty-five others, providing the teacher with all the information necessary for embarking on this approach to science education. The films themselves have not been evaluated by Saskatchewan Education. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

Science Matters: Achieving Scientific Literacy (Print-Non-Fiction). Hazen, Robert M. and James Trefil. Doubleday (DOU), 1991. 294 p. ISBN 0-385-24796-6 (\$24.95 hdc.)

This could be used for teacher background information in all grades, and for student reference at the middle level and secondary level. In an attempt to demystify some of the concepts of science, the authors have given brief explanations for a potpourri of scientific terms. The authors hope that the information provided will help readers to understand the scientific issues of the day. This material would be useful in developing technological literacy. A variety of topics such as chemical bonding, ecosystems and black holes are developed in a readable manner. Short descriptive passages, but few illustrations and no colour are used. Some of the ideas could be used in preparation of certain lessons. Caution is advised on comments about creationism, p. 243 and the heading "Sex-A Good Idea" p. 235, although the intent of this heading is explained. Included are a table of contents and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference
Other Uses: Science 10, Middle Level Science

Science: Process and Discovery (Print-Non-Fiction). Field, Denis. Addison Wesley (BB), 1985. 187 p. Order No. 6177 (\$16.70 pbk.) Order No. 6178 (\$22.45 teacher's guide, 1989)

An inquiry into the nature of science and scientific inquiry, Part One of the book introduces the principles by which all science operates. Parts Two through Five offer 24 case studies which illustrate the principles described in Part One and give a behind-the-scenes look into how scientists work and think. The case studies are classified as from general science, physics, chemistry and biology. This book is a valuable resource in dealing with the Dimensions of Scientific Literacy, especially Dimension A (Nature of Science) and Dimension C (Processes of Science). A teacher's guide gives valuable suggestions on how to use this book in class.

Suggested Use: BIO 30 - Evolution, Genetics|CHEM 20 - Atoms & Elements|
PHYS 20 - Heat|PHYS 30 - Kinematics & Dynamics, Nuclear Physics
Other Uses: Science 10

Science Safety Manual (Print-Non-Fiction). British Columbia Educational Programs, Dept. Curriculum Dev. Branch (BB), 1988. 183 p. Order No. 1017 (\$16.30 looseleaf format in three ring binder)

This safety manual was developed in response to safety needs as identified in various British Columbia Provincial Science Assessments, as well as concerns identified by various school districts and the British Columbia Science Teachers Association. It is intended that this manual will be used by schools and school districts to examine science safety in schools and initiate actions to improve science safety for all students and teachers. Included are a table of contents and bibliography.

Suggested Use: CHEM 20 - General Reference|CHEM 30 - General Reference|BIO 20 - General Reference|BIO 30 - General Reference|PHYS 20 - General Reference|
PHYS 30 - General Reference

Science, Technology and Society (Print-Non-Fiction). BSCS. (Innovations: The Social Consequences of Science and Technology Program). Kendall Hunt (KHP), 1984. 49 p. ISBN 0-8403-3272-6 (\$6.90 U.S., student text pbk.) ISBN 0-8403-3273-4 (\$14.90 U.S., teacher's guide pbk.)

American in content, this resource was developed to provide information regarding the issues of science, technology and society that have important consequences for both present and future social policies. The materials are designed to provide a means to assess the effects of selected technological innovations in order to make intelligent decisions regarding chemistry. Included is a table of contents.

Suggested Use: BIO 20 - Ecological Organization

Science Toolkit (Software). Broderbund (BDB)

System Requirements: Apple II+, IIe, IIc, IIGS, 5 1/4" disk drive, 64 k, joystick port adapter, printer is optional. Interface box in master module connects the sensory probe to computer via joystick port.

Apple Master School Edition (includes teachers' manual)

Order #40650	\$ 99.95 - 2 discs for use with master
Order #45150 - Lab Pack	\$259.95 - 5 disks with master
Order #42750 - Module 1: Speed and Motion 1987	\$ 49.95
Order #42850 - Module 2: Earthquake Lab, 1986	\$ 49.95
Order #41950 - Module 3: Body Lab, 1987	\$ 49.95

IBM Master School Edition

Order #40610 - 5 1/4"	Order #40611 - 3 1/2"	\$ 89.95
-----------------------	-----------------------	----------

IBM Lab Pack set of 5

Order #45010 - 5 1/4"	Order #45011 - 3 1/2"	\$249.95
-----------------------	-----------------------	----------

IBM Module 1: Speed and Motion

Order #42710 - 5 1/4"	Order #42711 - 3 1/2"	\$ 49.95
-----------------------	-----------------------	----------

Experiments in light, heat, mechanics and biology including speed and motion, simple harmonics, wave motion and the circulatory, respiratory and nervous system could be conducted by use of these software packages. There are four modules. With the Master Module come four on screen instruments in a timer, a thermometer, a light meter and a strip-chart recorder, plus light and temperature probes, and an illustrated guide to dozens of experiments that use common household objects.

Module 1: Speed and Motion adds a second light probe and a balloon-powered car to the toolkit, plus two more software instruments, speedometer and a tachometer. It comes with Speed and Motion Experiment Guide and requires Master Module.

Module 2: Earthquake Lab includes a highly sensitive seismoscope and on-screen seismograph plus plotter for printing out the results of experiments recorded with the seismograph and Master Module strip chart. It comes with Earthquake Lab Experiment Guide and requires Master Module.

Module 3: Body Lab displays heart rate on an on-screen chart, then plots and prints out the results. A response timer displays the hundredth of a second, how quickly one responds to light, sound or touch. The spirometer measures lung power and other critical respiratory functions. It comes with Body Lab Experiment Guide and requires Master Module.

Suggested Use: BIO 30 - Human Body Systems|PHYS 20 - Light, Optics|PHYS 30 - Kinematics & Dynamics

Other Uses: Science 10, Middle Level and Elementary Science

The Secret Life of Quanta (Print-Non-Fiction). Han, M.Y. TAB Books (MHR), 1990. 183 p. ISBN 0-8806-3397-9 (\$24.95 hdc.)

This book covers various topics in chemistry and physics as it relates to the basic properties of atoms, molecules, light, electricity, magnetism and electromagnetic radiation. The nature of light, quantum mechanics, quarks and nuclear technologies are all studied. The application of light to lasers, superconductors, gamma emissions, etc. are investigated. Advanced students or teachers may find the material worth reading.

Suggested Use: CHEM 20 - Atoms & Elements, Molecules & Compounds|
PHYS 20 - Light|PHYS 30 - Electricity, Nuclear Physics

Selling Science to Students: A Guide for Frontrunners and Innovators In the Schools
(Print-Non-Fiction). Science World (APES), (Free of charge)

The rationale for developing the *Scientists in the Schools* and *Innovators in the Schools* programs in Canada is to place scientists, engineers and other professionals directly in the classroom. It is believed that students become more interested in science when they have a chance to see a real scientist, engineer, technician or technologist in action. This resource is intended to help facilitate such visits to the schools by giving the presenters information on planning and delivering a presentation and doing follow up. Model lesson plans and speaking notes on Canadian scholarship programs are appended. The material covers K-12 presentations. It is available in French and English.

- Suggested Use:** BIO 20 - Teacher Reference|BIO 30 - Teacher Reference|CHEM 20 - Teacher Reference|CHEM 30 - Teacher Reference|PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference
- Other Uses:** Science 10|Middle Level Science|Elementary Science

Serendipity: Accidental Discoveries In Science (Print-Non-Fiction). Roberts, Royston M. (Wiley Science Editions). John Wiley & Sons (WIL), 1989. 270 p. ISBN 0-471-50658-3 (\$27.95 hdc.) ISBN 0-471-60203-5 (\$18.50 pbk.)

The short, easy to read chapters present a large number of interesting "serendipitous" or accidental discoveries in science-related fields. The ideas could be used in a wide variety of topic areas. The material primarily promotes the Dimensions of the Nature of Science, S-T-S-E Interrelationships and Science-Related Interests and Attitudes.

- Suggested Use:** BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 30 - General Reference

Sexuality: An Education Resource Book (Print-Non-Fiction). Judith Campbell and Jill Gollick. Globe/Modern (GMC), 1988. 454 p. ISBN 0-88996-146-8 (\$34.40 pbk.)

Various aspects of sexuality such as what it is, sexuality education, sexual anatomy, and physiology plus sexual actions and relationships are described by the authors. Contraception, sexually transmitted diseases and sexual safety are some of the issues discussed. This is an excellent source on matters related to human sexuality. Included are table of contents, glossary, bibliography and index.

- Suggested Use:** BIO 30 - Chemical Basis of Life, Animal Systems, Various Options
- Other Uses:** Life Transitions 20/30|Home Economics 8, 9, 30|Health 7-9|Wellness 10

Sexually Transmitted Diseases: What You Should Know (Videotape). Sunburst (SUN), 1988. Order No. 2245-TR (\$169.00)

To heighten awareness of the causes, symptoms and health consequences of sexually transmitted diseases; to provide information and dispel myths about how AIDS and other STDs are transmitted; and to identify and supply facts about specific STDs, including AIDS, syphilis, gonorrhea, chlamydia, herpes, genital warts and trichomoniasis, are the objectives of this program. Information is also given

on encouraging sexual abstinence and modelling assertive behaviour for teenagers who wish to say "no" to sexual activity, stressing the importance of low-risk behaviour and routine check-ups for teenagers who are sexually active, and to urge immediate treatment for anyone who has had symptoms of, or exposure to an STD.

Suggested Use: BIO 30 - Animal Systems
Other Uses: Wellness 10

Social Science Unit: The Role of Chemicals in Agriculture and Food Production

(Print-Non-Fiction). Mansfield, T. Dickson. (Environmental Literacy). Key Foundation (KYF), 1992. 38 p. No order no. needed (\$4.00 pbk.)

Contents of this attractive booklet include consumers and the issue stated in the title, agricultural chemicals and the environment, chemicals and world agriculture plus the costs and benefits of chemical use in Canadian agriculture. Many colour illustrations such as charts and graphs are used. Included are a table of contents and a glossary. With accompanying class set, teacher's guide is available free on computer disc in IBM or Macintosh format. Please specify format when ordering. For workshop information phone (705) 726-2276 or write to the address listed in the distributor directory.

Suggested Use: BIO 20 - Ecological Organization, Agricultural Botany|CHEM 20 - Independent Research|CHEM 30 - Independent Research

Soil Science and Management. 2nd ed. (Print-Non-Fiction). Plaster, Edward J. Delmar (NEL), 1985. 454 p. ISBN 0-8273-2450-8 (\$52.95 hdc.)

This provides good teacher background information and a good source of information for independent student research. It is an excellent source for relating the concepts of biology to the societal and environmental problems related to soils in Saskatchewan. The information is American in content. Included are a table of contents, glossary and an index.

Suggested Use: BIO 20 - Agricultural Botany
Other Uses: Agriculture, Middle Level Science, Teacher Resource

Song of the Paddle: An Illustrated Guide to Wilderness Camping (Print-Non-Fiction). Mason, Bill. Key Porter Books (KEY), 1988. ISBN 1-55013-079-X (\$29.95 hdc.) ISBN 1-55013-082-X (\$19.95 pbk.)

This book provides insights into the various aspects of wilderness camping. Many skills are presented and some of them are direct applications of the principles studied in physics. The material is presented in an interesting manner with the help of pictures and diagrams. Credit is given to some of the Indian and Métis inventions. Included are a table of contents, bibliography and index.

Suggested Use: PHYS 20 - Heat|PHYS 30 - Kinematics & Dynamics, Mechanical Energy, Fluid Mechanics
Other Uses: Science 10, Outdoor Education

Sound Science (Print-Non-Fiction). Kaner, Etta. Kids Can (HMF), 1991. 96 p. ISBN 1-55074-054-7 (\$7.96 pbk.)

A fun introduction to basic physics, students discover what sound is and how it works in this easy-to-follow book of experiments. Following each experiment, a "How does it Work?" section explains the science behind the results in simple, concise terms. Included are a table of contents, glossary and index.

Suggested Use: PHYS 20 - Sound
Other Uses: Middle Level Science

A Sourcebook for the Biological Sciences. 3rd ed. (Print-Non-Fiction). Morholt, Evelyn and Paul F. Brandwein. Harcourt, Brace Jovanovich (HBJC), 1986. 813 p. ISBN 0-15-582852-5 (\$58.95 hdc.)

Background knowledge, illustrations, tables, and instructional suggestions are provided by Morholt and Brandwein for all of the core units in the new Biology 20/30 programs. There is a strong section on maintaining organisms for laboratory and classroom activities. Many helpful biological techniques and skills are covered. Highly recommended, this is considered the type of resource that every biology teacher should have for reference for core and optional unit planning.

Suggested Use: BIO 20 - Teacher Reference|BIO 30 - Teacher Reference
Other Uses: Science 10

South Moresby: Decisions of Conservation and Development (Print-Non-Fiction). Tooke, Moyra. (E.D.I.T. Series). Teachers' Press (TCH), 1987. (\$87.50)

This binder contains all the materials needed to conduct a simulated Royal Commission hearing on the future of South Moresby. The simulation consists of a set of 16 slides with commentary, twenty-five role playing character cards, background information on the South Moresby issue including readings, maps and charts, and a teacher's guide.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life
Other Uses: Science 10

Space for All: Careers In Science, Mathematics, Engineering and Computer Science for Students with Disabilities (Print-Non-Fiction). American Assoc. for the Advancement of Science (AAAS), 19 p. (Free of charge while quantities last)

The purpose of this booklet is to encourage a choice of careers in science, mathematics, engineering or computer science. Some of the career opportunities at NASA installations are highlighted. Seventeen NASA employees are profiled to serve as role models for disabled youth, their families, teachers and counsellors. This information supports the Dimension of Science Related Interests and Attitudes.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

Spaceship Earth (Videotape). Hawkhill (HAI), 1991. 88 min. (\$149.00 U.S.)

To make a bridge between science and the humanities was the intent of the producers of this video. Concepts such as conservation of matter are presented in a very interesting manner. The following six parts can each stand alone:

Part 1 The Universe	18 min.
Part 2 The Biosphere	14 min.
Part 3 Living Things	12 min.
Part 4 The Cell	15 min.
Part 5 Atoms & Molecules	17 min.
Part 6 A Little While Aware	12 min.

Suggested Use: BIO 20 - Agricultural Botany, Diversity of Life|BIO 30 - Cell Structure & Function|CHEM 20 - Molecules & Compounds, Atoms & Elements

Speech and Hearing (Print-Non-Fiction). Allstetter, William D. (The Encyclopedia of Health - The Healthy Body). Chelsea House (NEL), 1991. 111 p. ISBN 0-7910-0029-X (\$24.99 hdc.)

Allstetter examines the vital mechanics of human communication, speech, and hearing through a discussion of the body's role in these functions. This material would be useful for the application of science into everyday life in physics classes. Black and white photographs and drawings are used. Many factors are supported.

Suggested Use: BIO 30 - Animal Systems|PHYS 20 - Sound
Other Uses: Science 10

Standing Room Only (Software). Sunburst (SUN), 1988. APPLE 5 1/4 Order No. 164802 (\$87.00)

Contents: 2 discs and a teacher's guide:

System Requirements: Apple II, 5 1/4" format with 128 K memory

Standing Room Only is a computer simulation of human population growth. The program allows students to enter values for a range of variables, and receive a projection of population growth into the 21st century.

Suggested Use: BIO 20 - Ecological Organization

Stephen Hawking: Quest for a Theory of the Universe (Print-Non-Fiction). Ferguson, Kitty. Franklin Watts (GRO), 1991. 192 p. ISBN 0-531-11067-2 (\$20.50 hdc.)

Ferguson presents the life of the British theoretical physicist who has taken the study of cosmology farther than most in his field, despite the need for a wheelchair and computer in order to travel and communicate. Hawking's scientific ideas are presented as simply as possible, with essentially no mathematics. This book is highly recommended as being motivational for students. The controversy over science and religion is outlined in this book.

Suggested Use: PHYS 30 - Atomic Physics

STSC Chemistry 10 - Science Technology Society Communication (Print-Non-Fiction). Dzwiniel, Michael, et al. Karitann (KARP), 1986. ISBN 0-921445-00-8 (\$4.75 student edition, looseleaf format) (\$29.95 teacher's edition)

See annotation for STSC Chemistry 30.

Suggested Use: CHEM 20 - Introduction to Chemistry, Atoms & Elements, Chemical Reactions, Molecules & Compounds, Mole Concept & Stoichiometry

STSC Chemistry 20 - Science Technology Society Communication (Print-Non-Fiction). Dzwiniel, Michael, et al. Karitann (KARP), 1987. ISBN 0-921445-20-2 (\$5.50 student edition, looseleaf format) (\$34.95 teacher's edition)

See annotation for STSC Chemistry 30.

Suggested Use: CHEM 20 - Atoms & Elements, Organic Chemistry|CHEM 30 - Review of Basic Principles, Solubility & Solutions

STSC Chemistry 30 - Science Technology Society Communication (Print-Non-Fiction). Dzwiniel, Michael, et al. Karitann (KARP), 1988. ISBN 0-921445-28-8 (\$6.00 student edition, looseleaf format) (\$39.95 teachers edition)

The material relates topics to societal issues and describes modern technologies. There is ample provision for students to think about and discuss issues in science and technology. This is an excellent resource for providing Canadian content. The STSC Chemistry materials will be published in a one textbook format in the future. Upon a positive review, the text will be available from the Book Bureau. Until this review process is complete, it is suggested that orders for the STSC materials to be used in the 1992-93 school year be placed directly with Karitann Publishers.

Suggested Use: CHEM 30 - Review of Basic Principles, Energy Changes in Chemical Reaction, Reaction Kinetics, Equilibrium, Acid-Base Equilibria, Oxidation & Reduction

Superconductivity: From Discovery To Break Through (Print-Non-Fiction). Billings, Charlene W. Cobblehill Books/Dutton (MCC), 1991. 63 p. ISBN 0-525-65048-2 (\$21.95 hdc.)

Billings explores the history and development of superconductivity from its discovery in 1911 to 1991. The Nature of Science is heavily demonstrated in the content which includes theories and models. Key Science Concepts in the areas of electrical conductivity, insulators, resistance, force, energy, matter interaction and replication are covered. This is a good example of the way in which science can benefit society in that practical and current uses and applications of superconductivity are listed.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research|
PHYS 30 - Electricity, Science Challenge

Symbiosis: Nature In Partnership (Print-Non-Fiction). Nicolette, Perry. Blandford (BORE), 1990. 128 p. Order No. 67498-10 (\$61.50 pbk.)

By means of colour photographs, line drawings and an informative text, this book describes symbiotic

relationships in themes or topics such as the coral reef, milkers, cleaners, protection, pollination and seed distribution, algae, micro-organisms, fungi and humans. The author covers the range of symbiotic associations, from those among microscopic organisms to human relationships with other living creatures.

Suggested Use: BIO 20 - Ecological Organization|BIO 30 - Animal Systems

Taxonomy (Microslides). (BORE), Order No. 66110-08 (\$5.94)

Topics covered in this set of 8 photomicrographs include:

1. Bacteria in pairs (1200X)
2. Spore producer - st(1000X)
3. Bacteria in chains - st(1000X)
4. Rod shaped bacteria - st(200X)
5. Anaerobic spore producer -st(1000X)
6. Boils and abscess bacteria - st(1000X)
7. Syphilis bacterium - em(30,000X)
8. Sauerkraut bacteria - st(2000X)

Microslides require use of microslide viewer (contact BORE)

Suggested Use: BIO 20 - Diversity of Life

Teacher Wild Rice Resource Package (Print-Non-Fiction). Saskatchewan Wild Rice Council (NDSE), 1989. (Free of charge)

A photocopied set of information sheets provide facts about the history, growth, harvest, nutrition and versatility of wild rice. Student activities and diagrams showing the wild rice growth cycle are provided.

Suggested Use: BIO 20 - Agricultural Botany

Thinking Physics: Practical Lessons In Critical Thinking. 2nd ed. (Print-Non-Fiction). Epstein, Lewis Carroll. Insight (INP), 1988. 262 p. ISBN 0-935218-06-8 (\$23.95 U.S. pbk.)

Hundreds of physics problems and answers which provide practical lessons in critical thinking are presented. This book may be useful in providing questions for group discussion and review. The material supports the Nature of Science, Key Science Concepts, Processes of Science and Scientific and Technical Skills. Imperial measurements are used. Included are a table of contents and an index.

Suggested Use: PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference

Third Row Elements of the Periodic Table (Videotape). Classroom Video (CV), 1988. 30 min. (\$69.00)

This video illustrates reactions with oxygen, bromine, sodium, cesium and fluorine. Also demonstrated is conductivity testing and pH testing of the reactions with chlorine.

Suggested Use: CHEM 20 - Atoms & Elements, Molecules & Compounds
Other Uses: Science 10

This Marsh Is Ours (16 mm). SaskMedia (MHP), 1978. 20 min. Order No. MP 7413

Marshes play a vital role in the delicately balanced ecological system. They are also fascinating places to explore and to study the food web, from microscopic food producers to the highest order consumers, back to microscopic decomposers. During recent decades, thousands of acres of marshland have been lost due to draining. *This Marsh Is Ours* examines the consequences and alternatives to draining, weighing the value of marshes to the environment, against the monetary value of the land for farming.

Suggested Use: BIO 20 - Ecological Organization, Agricultural Botany

Today's Pollution Dilemma: Industry and Environment. E.D.I.T. File 6 (Print-Non-Fiction). Tooke, Moyra, ed. (Environment and Development Issues and Trends Series). Teachers' Press (TCH), 1985. (\$25.00 + 1.50 handling, loose leaf)

This package comes with a reader's guide and various discussions on the topics of the pesticide dilemma, chemicals and waste disposal, the spread of acid rain, the effects on climate and special problems in developing nations. The E.D.I.T. file system organizes information on global environment and development issues for Canadian classrooms. The files are edited by teachers for classroom use. The readings can be freely duplicated to allow for class, group or independent study. Terms which are specific to development issues are identified and will be found in the *E.D.I.T. Glossary of Development Terms* that is supplied free of charge to each new purchaser of the E.D.I.T. files.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research
Other Uses: Science 10

Together We Learn (Videotape). Outlook Communications (MHP), 1989. 23 min Dup. Order No. V02705

Conversations with teachers regarding cooperative learning in primary through senior grades are featured. Teachers discuss why they are interested in using cooperative learning approaches and explain some of the practical ways in which they use them in their classrooms.

Suggested Use: BIO 20 - Teacher Reference|BIO 30 - Teacher Reference|CHEM 20 - Teacher Reference|CHEM 30 - Teacher Reference|PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference
Other Uses: All Subject Areas

Together We Learn: A Handbook on Cooperative Small Group Learning (Print-Non-Fiction). Clarke, Judy, et al. Prentice-Hall (BB), 1990. 216 p. BB 6119 (\$30.60 pbk.)

A comprehensive teacher's handbook information is provided on the dynamics of groups, how to create and sustain group work, reasons for using groups, and ways and means of evaluating both the process and product of group work. Includes a table of contents and an index to evaluation forms.

Suggested Use: BIO 20 - Teacher Reference|BIO 30 - Teacher Reference|CHEM 20 - Teacher Reference|CHEM 30 - Teacher Reference|PHYS 20 - Teacher Reference|PHYS 30 - Teacher Reference
Other Uses: All Subject Areas

Trashing the Planet: How Science Can Help Us (Print-Non-Fiction). Ray, Dixy Lee. Regnery Gateway (BCN), 1990. 206 p. ISBN 0-89526-544-3 (\$26.50 hdc.)

The information in this book gives an overview of the many problems facing our environment and global status. Topics such as acid rain, depletion of the ozone, radiation, nuclear and solar power plus environmentalism and the future are covered. Included are a table of contents and an index.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Acids-Base Equilibria|PHYS 30 - Atomic Physics
Other Uses: Science 10

Turning the World Inside Out and 174 Other Simple Physics Demonstrations (Print-Non-Fiction). Ehrlich, Robert. Princeton University (BCN), 1990. 216 p. ISBN 0-691-08534-X (\$52.50 hdc.) ISBN 0-691-02395-6 (\$19.95 pbk.)

Ehrlich provides a collection of simple experiments and demonstrations in basic physics. The information could be used to stimulate students' interest or as a sourcebook for students' projects. The demonstrations deal with most of the core areas of Physics 20 and 30.

Suggested Use: PHYS 20 - Science Challenge|PHYS 30 - Science Challenge

Two Minutes a Day for a Greener Planet (Print-Non-Fiction). Lamb, Marjorie. HarperCollins (HCP), 1990. 271 p. ISBN 0-00-637691-6 (\$4.95 pbk.)

In response to environmental concerns, Lamb gives suggestions for individual action on a small scale. The premise of the book is that if each of us would spend just two minutes a day using some of these tips, we could make a difference. This is a book which would be useful for all science classes.

Suggested Use: CHEM 20 - Consumer Chemistry

Under the Microscope (Print-Non-Fiction). Burgess, Jeremy, Michael Marten and Rosemary Taylor. Cambridge University (BORE), 1987. Order No. 63817-00 (\$26.34 pbk.)

In this resource there are a number of excellent photos of things not normally seen. The first half of

the book deals with biological aspects of the human body, animals, seed plants, micro-organisms and the cell. The last three chapters deal with chemistry and its applications in the areas of the inorganic world, industrial world and our everyday world. The explanations are quite in depth. The material corresponds to the Dimension of Science-Related Interests and Attitudes as it provides technological literacy.

Suggested Use: BIO 20 - Introduction, Diversity of Life|BIO 30 - Cell Structure & Function|
CHEM 20 - Atoms & Elements
Other Uses: Middle Level Science

Understanding Lasers (Print-Non-Fiction). Gibilisco, Stan. TAB Books (MHR), 1989. 169 p. ISBN 0-8306-9275-4 (\$32.95 hdc.)

Gibilisco gives a brief overview of the development of lasers and their use in the areas of medicine, communication, industry and warfare.

Suggested Use: BIO 30 - Various Options|PHYS 20 - Light

Uneasy Careers and Intimate Lives (Print-Non-Fiction). Abir-Am, Pnina G. and Dorinda Outram, eds. Rutgers University (RUP), 1987. 265 p. ISBN 0-8135-1256-5 (\$14.00 pbk.)

Although the reading level is high, the descriptions of the careers of women in science should motivate interested students and serve as a good background for all high school science teachers. Included are a bibliography and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|
PHYS 30 - General Reference

Uranium (Kit). (Saskatchewan Resource Series). Saskatchewan Education (BB), 1991.

Kit includes: VHS videocassette and manual (BB) BB 6091 (\$29.15)

Manual only (BB) BB 6092 (\$7.60)

Video only (MHP) Dup. Order No. V03562

In February 1991, one copy was sent to each school with grade 10 students enrolled. Print materials can be purchased from the Book Bureau. The videotape may be acquired from Media House Productions for the cost of the tape, plus duplication charge. The video provides an interesting look at uranium as a resource and at the Saskatchewan uranium industry. The printed material provides background information and a number of suggested classroom activities. The material may be duplicated for classroom use.

Suggested Use: PHYS 30 - Nuclear Physics
Other Uses: Science 10

Uranium (Videotape). National Film Board (NFB), 1990. 48 min. Order No. 10190-053 (\$26.95)

The consequences of uranium mining in Canada are explored. The video explains that because of toxic and radioactive waste, there are profound, long-term environmental hazards associated with uranium mining. For miners who work at the sites, there is the substantially increased risk of getting cancer and, because most of the mining to date has been on land historically used by Canada's Indian and Métis populations, uranium mining violated the traditional economic and spiritual lives of many Aboriginal people.

Suggested Use: PHYS 30 - Nuclear Physics
Other Uses: Science 10

Vectors (Videotape). Classroom Video (CV), 1990. 19 min. (\$69.00)

Various aspects of vectors such as what they are, the addition of vectors, two and three dimensional components of vectors and the commutative nature of vector addition are dealt with on this video. Some good examples of vectors in action are also shown.

Suggested Use: PHYS 30 - Kinematics & Dynamics

Vision (Print-Non-Fiction). Koop, C. Everett. (The Encyclopedia of Health - The Healthy Body). Chelsea House (NEL), 1990. 103 p. ISBN 0-7910-0031-1 (\$24.99 pbk.)

Koop presents the history of our knowledge of human vision, how we see and some of the defects of human vision. This material is only moderately technical and does not use mathematics to explain concepts. It is very clearly written and strongly shows the science and society interrelationship. The book also supports the Nature of Science, Key Science Concepts and the Processes of Science. If this resource were to be purchased solely for support of the physics section on optics, it may be too expensive for the amount of physics explained.

Suggested Use: BIO 30 - Animal Systems|PHYS 20 - Optics
Other Uses: Science 10

The Visual Dictionary of Plants (Print-Non-Fiction). (Eyewitness Visual Dictionaries Series). Stoddart (STO), 1992. 64 p. ISBN 0-7737-2563-6 (\$17.95 hdc.)

Using colourful micrography, various plants, their structures and plant processes are briefly and picturesquely described. This is an attractive resource which would motivate student browsing in this subject area.

Suggested Use: BIO 20 - Agricultural Botany
Other Uses: Middle Level Science

What Goes Up: The Global Assault on Our Atmosphere (Print-Non-Fiction). Nance, John J. Wm. Morrow (GAG), 1991. 324 p. ISBN 0-688-08952-6 (\$27.95 hdc.)

Nance provides a "behind the scenes look" into events and people involved in the headlines on global warming and ozone depletion. The writing is in layman's terms. There is an emphasis in this

material on the human factor in science and scientific research. This material relates very well to factors in the Nature of Science, STSE Interrelationships and the Values that Underlie Science Dimensions. The format of this material limits its use in that it would not be very effective in part, but would need to be read in its entirety. Teachers and some students looking for an in-depth reading resource on this topic may find it a good reference. The content is historical. Included are a table of contents, bibliography and an index.

Suggested Use: CHEM 20 - Independent Research|CHEM 30 - Independent Research
Other Uses: Science 10

What Light Through Yonder Window Breaks? More Experiments In Atmospheric Physics (Print-Non-Fiction). Bohren, Craig F. John Wiley & Sons (WIL), 1991. ISBN 0-471-52915-X (\$18.50 pbk.)

Solid illustrations are given of the physical principles behind various natural phenomena involving light, sound and thermal energy. This is a useful resource for teachers and students. The explanation of concepts are done at a fairly readable level. Through examples drawn from everyday situations, the authors bring many of the DSLs into the book.

Suggested Use: PHYS 20 - Light, Sound, Heat
Other Uses: Science 10

The Wheatgrass Mechanism (Print-Non-Fiction). Gayton, Don. Fifth House (FIF), 1990. 156 p. ISBN 0-920079-70-9 (\$16.95 jacketed pbk.) ISBN 1-895618-09-6 (\$12.95 pbk.)

Gayton provides a fascinating look at how plants adapt to prairie conditions. This is considered a must for anyone teaching Biology 20 in Saskatchewan. It is an excellent reference for keen students who want to understand the prairie ecosystem. Humour and imagery are used in the narrative writing style. Some statements of opinion should foster discussion and should be recognized as opinion. The DSLs of the Values that Underlie Science and Science-Related Interests and Attitudes receive excellent support in this material. Saskatchewan examples are used. There is a wide range of Indian and Métis content with some outdated terminology. Included are a table of contents and bibliography.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life, Agricultural Botany|
BIO 30 - Chemical Basis of Life, Cell Structure & Function

When Do Fish Sleep? (Print-Non-Fiction/Audiocassette). Feldman, David. Caedmon Audio/Harper & Row (BORE), 1989. 56:24 min./260 p. Order No. 68044-000 (\$13.13 text) Order No. 68044-01 (\$11.81 cassette)

The book is a great resource which gives more detailed imponderables and their solutions/answers than the tape. The two formats deal with mysteries, questions, and topics that cover a wide range of subjects. The imponderables should aid in developing skills in critical and creative thinking, communication, role-playing, debating, as well as developing inquiry skills and skills in making value

judgements. Use of this material could add fun to science classes. Included are a bibliography and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

The Who's Who of Nobel Prize Winners 1901 - 1990. 2nd ed. (Print-Non-Fiction). Schlessinger, Bernard S. and June H. Schlessinger. Oryx (ORYP), 1991. 231 p. ISBN 0-89774-599-X (\$39.50 U.S. hdc.)

While not essential for support of the curricula, this compilation of Nobel Prize winners and their contributions, fits well as supplementary material especially in the areas of STSE Interrelationships and Science-Related Interests and Attitudes. Included are a table of contents and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

Why Do Clocks Run Clockwise? and Other Imponderables (Print-Non-Fiction). Feldman, David. Harper & Row (HCP), 251 p. ISBN 0-06-091515-3 (\$13.50 pbk.)

The book attempts to answer many interesting and unusual kinds of questions. Some of the questions may be dismissed as trivial by adults, but they are typical of the kinds of questions children ask. Each "imponderable" is followed by a short answer. Included are a table of contents and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

Other Uses: Middle Level Science

Wild & Free: Living with Wildlife In Canada's North (Print-Non-Fiction). Wilson, Jan and Sally Wilson. Gordon Soules (SOU), 1989. 190 p. ISBN 0-919574-87-4 (\$14.95 pbk.)

Interesting little stories about the habitat and behaviour of wild animals in the forests are presented in this book. It is easy to read. Drawings and photographs accentuate the text. Included are a table of contents, bibliography and an index.

Suggested Use: BIO 20 - Diversity of Life

Wild Rice Growers Training Manual (Print-Non-Fiction). Weinstein, G. and B. Plunz. Saskatchewan Education - Northern Division (NDSE), 1987. (Free of Charge)

Providing an overview of provincial regulations, growing, harvesting, processing and business

management of wild rice, this coil-bound book is a very comprehensive yet readable source. Large illustrations add to the information provided.

Suggested Use: BIO 20 - Agricultural Botany
Other Uses: Agriculture

Wilderness and Wildlife: Issues of Conservation and Preservation. E.D.I.T. File 9
(Print-Non-Fiction). Tooke, Moyra, ed. Teachers' Press (TCH), (\$25.00 Loose leaf)

A useful resource for information on Canadian Wildlife processes, the material addresses the major issues of conservation and preservation. The E.D.I.T. file system organizes complex up-to-date information about global environment and development issues for Canadian classrooms. The material is selected to give a broad perspective on changing world events and to provide a relevant resource base for student discussion and research. The material can be freely duplicated to allow class, group or independent study. Each reading presents opportunities for discussion and related activities. The readings have been edited for appropriate comprehension levels. Terms which are specific to development issues will be found in the E.D.I.T. *Glossary of Environment and Development Terms* which is available free of charge. Every Autumn, an E.D.I.T. catalogue, listing new files and any new readings for existing files, will be mailed to teachers. Teachers can order reprints of individual readings by quoting the number in the top right-hand corner.

Suggested Use: BIO 20 - Ecological Organization

Wildflowers Across the Prairies. Rev. ed. (Print-Non-Fiction). Vance, Fenton, James Jowsey, and James McLean. Western Producer Prairie Books (BB), 1984. 214 p. BB 2558 (\$16.05 pbk.)

This is an excellent book for identifying species of flowering plants which are native to Saskatchewan and for encouraging students to become interested in the diversity of Saskatchewan angiosperms. One or more colour illustrations and line drawings are given for some of 270 species of plants of Saskatchewan and similar areas including Manitoba, Alberta, Northwest Territories, Montana, the Dakotas and Minnesota. Scientific and popular names identify each plant. Information on the flowers, fruit, leaves, growth habit and habitat is provided. This book was previously listed in the *Textbooks Circular*. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Diversity of Life
Other Uses: Middle Level Science

Women In Science (Print-Non-Fiction). Gornick, Vivian. Simon & Schuster (IRW), 1983. ISBN 0-671-69592-4 (\$12.25 pbk.)

Some of the struggles and successes of women involved in the field of science are depicted by Gornick. This material may not be interesting enough for students to read from cover to cover, but would be useful for students wanting information in this area. The Dimension of Values and Attitudes that Underlie Science is addressed. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - General Reference|BIO 30 - General Reference|CHEM 20 - General Reference|CHEM 30 - General Reference|PHYS 20 - General Reference|PHYS 30 - General Reference

The Wonder of Canadian Birds (Print-Non-Fiction). Savage, Candace. Western Producer Prairie Books (DGL), 1985. 211 p. ISBN 0-88833-273-4 (\$24.95 hdc.)

Colourful, often full page photography and some distribution maps add to the one to two pages of written information on specific Canadian birds. This book would be useful for research projects, but also is attractive enough for general interest browsing by students.

Suggested Use: BIO 20 - Ecological Organization, Diversity of Life|BIO 30 - Animal Systems

The World Map (Map). (A Developing World Series). Media-Sphere (CIDA), 1990. 82 cm by 96 cm
No order no. is needed (Free of charge)

This large folding wall map offers information on population, health, education, economy and environment. Based on the United Nation's classification, the developed countries, the developing countries and the least developed countries are shown in various colours. Order forms for this and other free materials can be obtained from CIDA. The map is available in French and English.

Suggested Use: BIO 20 - Ecological Organization
Other Uses: Social Studies

World of Chemistry Series (Videotape). Annenberg/CPB Project (MHP), 1988. 26 - 29 min.
programs Dup. Order No. V03120 - V03145

Various topics in chemistry are covered. The series is highly recommended. Check "Possible Starting Points for Acquiring Resources" section in this bibliography for information on duplication of series pricing discounts from Media House.

Titles	Dup. Order No.	Curriculum Correlation
The Age of Polymers	V03141	Chem. 20: Organic Chemistry
The Atom	V03125	Chem. 20: Atoms & Elements
The Busy Electron	V03134	Chem. 20: Atoms & Elements
Carbon	V03140	Chem. 20: Organic Chemistry
Chemical Bonds	V03127	Chem. 20: Molecules & Compounds
Chemistry & the Environment	V03144	Chem. 20/30: Independent Research
Colour	V03121	Chem 20: Molecules & Compounds
The Driving Force	V03132	Chem 20: Chemicals Reactions/Rates of Reactions
Futures	V03145	Chem 20/30: Independent Research
The Genetic Code	V03143	Bio 30: Genetics
A Matter of State	V03124	Chem 20: Atoms & Elements
Measurement: The Foundation of Chemistry	V03122	Chem. 20: Introduction to Chemistry
Metals	V03138	Chem 20: Atoms & Elements
Modelling the Unseen	V03123	Chem 20: Atoms & Elements Chem 20: Mole Concept & Stoichiometry
Molecular Architecture	V03128	Chem 20: Molecules & Compounds
Molecules in Action	V03133	Chem 30: Molecules & Compounds
On the Surface	V03139	Chem 30: Reaction Kinetics

The Periodic Table	V03126	Chem 30: Atoms & Elements
The Precious Envelope	V03136	Chem 20: Behaviour of Gases
Proteins: Structure and Function	V03142	Bio 30: Chemical Basis of Life
The Proton in Chemistry	V03135	Chem 20: Atoms & Elements
Signals from Within	V03129	Chem 20: Atoms & Elements, Molecules & Compounds
Water	V03131	Chem 20/30: Independent Research
The World of Chemistry	V03120	Chem 20: Introduction to Chemistry

Suggested Use: BIO 30 - Genetics, Chemical Basis of Life|CHEM 20 - Organic Chemistry, Atoms & Elements, Molecules & Compounds, Chemical Reactions, Independent Research, Introduction to Chemistry, Mole Concept & Stoichiometry, Behaviour of Gases|CHEM 30 - Independent Research, Reaction Kinetics

The World's Wetlands. E.D.I.T. File 17 (Print-Non-Fiction). Tooke, Moyra, ed. Teacher's Press (TCH), 1991. (\$27.50 loose leaf)

Very recent articles give insights into the extent of the problem of wetlands, the search for solutions and the issue in Canada. The E.D.I.T. file system organizes complex up-to-date information about global environment and development issues for Canadian classrooms. The material is selected to give a broad perspective on changing world events and to provide a relevant resource base for student discussion and research. With all the work that has been done on the North American Waterfowl Plan and endangered habitats, this kit would supply valuable support for the teacher. The Saskatchewan scene would need to be supplemented. The material can be freely duplicated to allow class, group or independent study. Each reading presents opportunities for discussion and related activities. Biases of the writers may show. The readings have been edited for appropriate comprehension levels. Terms which are specific to development issues will be found in the *E.D.I.T. Glossary of Environment and Development Terms* which is available free of charge. Every autumn, an E.D.I.T. catalogue, listing new files and any new readings for existing files, will be mailed to teachers. Teachers can order reprints of individual readings by quoting the number in the top right-hand corner. Included are a reader's guide and fact sheets.

Suggested Use: BIO 20 - Ecological Organization

You and Toxicology (Print-Non-Fiction). Schiefer, H. Bruno, Donald Girvine, Shirley B. Buzik. University of Saskatchewan (USB), 1986. 114 p. ISBN 0-88880-195-5 (\$10.00 pbk.)

Information is provided on the never-ending dream: zero risk, food additives, poisonous plants, industrial chemicals and others. This is a very good book concerning safety with chemicals, and very applicable to Saskatchewan with a chapter on farm chemicals. This material could be used as reference for the section in Chemistry 20 on lab safety as well as for independent work. The material is considered to be an excellent support for the Dimension of Science-Technology-Society-Environment Interrelationships. Included are a table of contents, glossary, bibliography and an index.

Suggested Use: BIO 20 - Agricultural Botany, Various Options, Ecological Organization, Diversity of Life|BIO 30 - Various Options|CHEM 20 - Independent Research, Consumer Chemistry|CHEM 30 - Case Studies, Independent Research
Other Uses: Science 10|Science 9 - Teacher Reference

Indexes

Biology Indexes

The titles listed in this bibliography have been indexed according to the following topics listed in *Science: A Curriculum Guide for the Secondary Level: Biology* (p. 5). For the purposes of this bibliography, the additional headings of "General Reference" and "Teacher Reference" have also been included. Titles under these headings may be useful in support of the curriculum and are found at the end of this topical index. Please refer to the curriculum document for time allotments for each topic.

Biology 20

1. Introduction
2. Ecological Organization
3. Diversity of Life
4. Agricultural Botany of Saskatchewan
- * Various Options

Biology 30

1. Chemical Basis of Life
2. Cell Structure and Function
3. Genetics
4. Animal Systems
5. Evolution
- * Various Options

Biology 20 Topical Index

Agricultural Botany

Beginning Hydroponics
Biological Science
Biology
Biology: Discovering Life. Vol. 3
Biology: Living Systems
Biology Matters
Biology Unit
Biology: Your Bodyworks
Canadian Women in Science Series
Common Weeds of Canada
Contemporary Readings for General Biology
Economics of Wild Rice Farming ...
Fertile Soil

Fine Science 1985 Series
Food for Thought
Genethics
Global Science
Grains and Seeds in Canadian Agriculture ...
Home Place
Indian Givers
Indian Handcrafts
Indian Use of Wild Plants for ...
Indian Uses of Native Plants
Information Brochure on Wild Rice
Iroquois Use of Maize ...
Life Study

Micro Data Cards
Native Trees of Canada
Nature of Life
Nature Projects For Young Scientists
Out to Learn
Path of Water in Plants
Practical Botanist
Reading About Biology
Saskatchewan Field Crops

Science Edition 3 Series
Social Science Unit
Soil Science and Management
Spaceship Earth
Teacher Wild Rice Resource Package
This Marsh Is Ours
Visual Dictionary of Plants
Wheatgrass Mechanism
Wild Rice Growers Training Manual
You and Toxicology

Diversity of Life

Alaska's Wilderness Medicines
Biosphere 2
Biological Science
AIDS: Deadly Threat
Animal Rights
Biology: A Systems Approach
Biology: Discovering Life. Vol. 2
Biology: Living Systems
Biology of Series
Butterfly Garden
Canadian Social Trends
Contemporary Readings for General Biology
Encyclopedia of Animal Behaviour
Encyclopedia of Animal Biology
Environment of Life
Exploring the Seashore in British ...
Future for Canada's Wilderness
Guide to Farm Practice in Saskatchewan
Indian Uses of Native Plants
Investigating Aquatic Ecosystems
Investigating Terrestrial Ecosystems
Keepers of the Animals
Learning Cycle: Life Science

Life Study: A Textbook of Biology
MECC: Dataquest North American Mammals
Mushroom Hunter's Field Guide
Nature of Life
Nature Projects for Young Scientists
Out to Learn
Practical Botanist
Prairie Coulee
Probing Levels of Life
Project Wild (1990) Activity Guide
Rediscovery
Saskatchewan Flora and Fauna
Saskatchewan Flora and Fauna 2
Science Edition 3 Series
South Moresby
Spaceship Earth
Taxonomy
Under the Microscope
Wheatgrass Mechanism
Wild & Free
Wildflowers Across the Prairies
Wonder of Canadian Birds
You and Toxicology

Ecological Organization

Biological Science
Biology
Biology: A Systems Approach
Biology: Discovering Life. Vol. 1
Biology: Living Systems. 6th ed.
Biology Unit: Chemicals in Agriculture
Biosphere 2: The Human Experiment
Canada's Farm Population
Canadian Social Trends
Common Weeds of Canada
Concepts in Science Series
Contemporary Readings for General Biology

Deforestation & "Development"
Drinking Water Hazards
Ecology and Our Endangered Life ...
Encyclopedia of Animal Ecology
Enviro-Canada Series 1
Environment of Life
Exploring the Seashore in ...
Fallacy of Wildlife Conservation
Focus on Series
Future for Canada's Wilderness
Gaia: The Growth Of An Idea
Global Atlas

Global Science
 Grasslands
 Guide to Farm Practice in Saskatchewan...
 Harvest of Sand
 Healthy Homes, Healthy Kids
 Holistic Resource Management
 Home Place: Essays on Ecology
 Human Activity and the Environment
 Human Life
 Inner City in Transition
 Inventing the Future
 Investigating Aquatic Ecosystems
 Investigating Terrestrial Ecosystems
 Investigating the Human Environment
 Is Our Food Safe?
 Landscapes
 Learning Cycle
 Life in the Soil
 Management of Saskatchewan Park Lands
 New Migrations of People
 Next One Hundred Years
 1991 Environmental Scan
 Our Common Future
 Our Endangered Earth

Out to Learn
 Outdoor Environmental Education. 2nd ed.
 Paradise Won
 People & Caribou in the Northwest Territories
 pH of Saskatchewan Soils
 Practical Botanist
 Prairie Coulee
 Probing Levels of Life: A Laboratory Manual
 Project Wild (1990) Activity Guide
 Race to Save the Planet
 Rediscovery
 Role of Animal Agriculture in the Ecosystems
 Saskatchewan Electrical Energy Options
 Science, Technology and Society
 South Moresby: Decisions of ...
 Standing Room Only
 Symbiosis: Nature in Partnership
 This Marsh Is Ours
 Wheatgrass Mechanism
 Wilderness and Wildlife
 Wonder of Canadian Birds
 World's Wetlands. E.D.I.T. File 17
 You and Toxicology
 World Map

General Reference

Animals in the Classroom
 Book for Women Who Invent or Want To
 Careers for the Future
 Claiming the Future
 Concise Dictionary of Biology
 Entertaining Science Experiments ...
 Facts on File Dictionary of Biology
 Graphical Analysis
 Harper Collins Dictionary of Biology
 Idea Bank Collation, Vol. 1
 Invitations to Science Inquiry
 Levitating Trains and Kamikaze Genes
 Mothers of Invention
 1989 Yearbook of Science and the Future
 1990 Yearbook of Science and the Future
 New Book of Popular Science

Numbers in Science
 One Minute Readings
 Peterson's Job Opportunities for ...
 Rap-O-Matics
 Science Abled
 Science in Cinema
 Science Matters
 Science Safety Manual
 Serendipity
 Space for All
 Under the Microscope
 Uneasy Careers and Intimate Lives
 When Do Fish Sleep?
 Who's Who of Nobel Prize Winners ...
 Why Do Clocks Run Clockwise?
 Women in Science

Introduction

Biological Science
 Biology: A Systems Approach
 Biology Matters
 Cell Biology
 Concepts in Science Series

Global Science
 Indian Use of Wild Plants ...
 Measurement Under the Microscope
 Microscope
 Probing Levels of Life
 Under the Microscope

Teacher Reference

Biology: Life on Earth
Chaos: Making a New Science
Global Science
Instructional Strategies Series
Making the Grade

Selling Science to Students
Sourcebook for the Biological Sciences
Together We Learn
Together We Learn: A Handbook ...

Various Options

Ages of Gaia: A Biography of Our Living ...
Biology: Your Bodyworks
Complete Handbook of Science Fair Projects
Indian Use of Wild Plants for Crafts ...
Issues in Agriculture
It's A Matter of Survival

New Book of Popular Science
Paradise Won
Safety Oriented Guidelines for ...
Science Fair
Science Fairs: Organization, Regulations ...
You and Toxicology

Biology 30 Topical Index

Animal Systems

AIDS: Deadly Threat
Animal Rights
Biological Science
Biology
Biology: A Systems Approach
Biology: Discovering Life
Biology: Discovering Life: Vol. 4
Biology in Action
Biology: Living Systems
Biology Matters
Biology of Ourselves
Biology: Your Bodyworks
Biomedical Ethics
Biomedical Technology
Biotechnology: The Search for Wisdom
Canadian Social Trends
Chemical Engineer and ...
Circulatory System
Concepts in Science Series
Contemporary Readings for ...
Digestive System
Encyclopedia of Animal Behaviour
Encyclopedia of Animal Biology
Endocrine System
Environment of Life
Fine Science 1985 Series
Globe Biology
Healthy Homes, Healthy Kids

How Smart Are Animals?
Human Biology
Human Body Series
Human Body: An Overview
Human Form & Function
Human Life Processes II
Human Life
Human Reproduction
Incredible Machine
Inventing the Future
Investigating Terrestrial Ecosystems
Life Study
Micro Data Cards
Nature of Life
Nature Projects For Young Scientists
Nerve and Muscle Action
Newton At The Bat
Probing Levels of Life
Reading About Biology
Science Edition 3 Series
Science Toolkit
Sexuality: An Education ...
Sexually Transmitted Diseases
Speech and Hearing
Symbiosis: Nature in Partnership
Vision
Wonder of Canadian Birds

Cell Structure and Function

Biological Science: An Ecological Approach
Biology
Biology: A Systems Approach
Biology: Discovering Life. Vol. 1
Biology: Living Systems
Biology: Your Bodyworks
Cell Biology. Vol 1
Chemical Engineer and the Puzzle of ...
Concepts in Science Series

Globe Biology
Human Life Processes I
Life Study
Nature of Life
Photosynthesis
Probing Levels of Life
Spaceship Earth
Under the Microscope
Wheatgrass Mechanism

Chemical Basis of Life

Biological Science
Biology: A Systems Approach
Biology: Living Systems
Chemcom. 2nd ed.
Concepts in Science Series
Extraordinary Chemistry of ...
Genetics and Heredity

Globe Biology
Probing Levels of Life
Reading About Biology
Sexuality: An Education Resource Book
Wheatgrass Mechanism
World of Chemistry Series

Evolution

Biological Science: An Ecological Approach
Biology: A Systems Approach
Biology: Discovering Life
Biology: Discovering Life: Vol. 1 & 2
Biology: Living Systems
Concepts in Science Series
Contemporary Readings for General Biology
Ecology and Our Endangered Lives
Encyclopedia of Evolution
Encyclopedia of Animal Evolution

Evolution Under the Microscope
Gaia: The Growth of An Idea
Genethics: The Ethics of Engineering Life
How Smart Are Animals?
Life Study
Nature of Life
New Theories on the Origins of the Human ...
Science: Process and Discovery
Science & Religion: Opposing Viewpoints

General Reference

Animals in the Classroom
Book for Women Who Invent or Want To
Careers for the Future
Claiming the Future
Concise Dictionary of Biology
Entertaining Science Experiments ...
Facts on File Dictionary of Biology
Graphical Analysis. Version 2.5
Harper Collins Dictionary of Biology
Idea Bank Collation, Vol. 1
Invitations to Science Inquiry
Levitating Trains and Kamikaze Genes
Looking at Microscopes

Mothers of Invention
New Book of Popular Science
1989 Yearbook of Science and the Future
1990 Yearbook of Science and the Future
Numbers in Science
One Minute Readings
Peterson's Job Opportunities for ...
Rap-O-Matics
Science in Cinema
Science Matters
Science Safety Manual
Serendipity

Space for All
Uneasy Careers and Intimate Lives
When Do Fish Sleep?

Who's Who of Nobel Prize Winners ...
Why Do Clocks Run Clockwise?
Women in Science

Genetics

Advances in Genetic Technology
Basic Genetics: A Human Approach
Beyond the Crime Lab
Biological Science
Biology
Biology: A Systems Approach
Biology: Discovering Life
Biology: Discovering Live. Vol. 1
Biology in Action
Biology: Living Systems
Biology Matters: Science ...
Biology: Your Bodyworks
Biomedical Ethics
Biomedical Technology
Biotechnology: The Search for Wisdom
Canadian Social Trends
Chromosomes and Genes in Action
Cloning and the New Genetics
Concepts in Science Series
Contemporary Readings for General Biology
DNA: Laboratory of Life
DNA: The Thread of Life

Double Helix: A Personal Account ...
Evolution: Contemporary Readings ...
Genes and Surroundings
Genethics: The Ethics of Engineering Life...
Genetics and Heredity
Genetics in Canadian Health Care
Genetics: Patterns of Diversity
Genetics: The Mystery and the Promise
Inventors and Discoverers
Issues for Today
Life Study
Mapping Our Genes
MECC Probability Lab
Nature of Life
New Theories on the Origins of ...
Probing Levels of Life
Reading About Biology
Saskatchewan Biotechnology
Science: Process and Discovery
Science & Religion
World of Chemistry Series

Teacher Reference

Biology: Life on Earth
Chaos: Making a New Science
In Search of the Big Bang
Instructional Strategies Series
Making the Grade
Rediscovery

Selling Science to Students
A Sourcebook for the Biological ...
Together We Learn
Together We Learn: A Handbook ...

Various Options

Ages of Gaia: A Biography of Our ...
Biology: Your Bodyworks
Complete Handbook of Science Fair ...
The Future for Canada's Wilderness
Indian Use of Wild Plants for ...
Issues in Agriculture
It's A Matter of Survival

New Book of Popular Science
Out to Learn
Science Fair
Science Fairs: Organization, Regulations ...
Sexuality
Understanding Lasers
You and Toxicology

Biology 20 Media Index

16 mm

This Marsh Is Ours

Kit

Saskatchewan Field Crops
Saskatchewan Flora and Fauna 2
Saskatchewan Flora and Fauna
Grains and Seeds in Canadian ...
Landscapes

Map

pH of Saskatchewan Soils
The World Map

Microscope Slide Card

Micro Data Cards

Microslide

Life in the Soil
Measurement Under the Microscope The
Microscope: A Tool for Learning
Path of Water in Plants
Taxonomy

Print-Poetry

Grasslands

Software

Graphical Analysis. Version 2.5
MECC: Dataquest North American Mammals
Science Toolkit
Standing Room Only

Videodisc

Cell Biology. Vol. 1
Race to Save the Planet

Videotape

The Acme School of Stuff Series
The Biology of . . . Series
Canadian Women in Science Series
A Chemical Engineer and the Puzzle ...
Concepts in Science Series
A Fine Science 1985 Series
Race to Save the Planet Series
Rap-O-Matics
Science Abled
Science Edition 3 Series
Spaceship Earth
Together We Learn

Wall Chart

Enviro-Canada Series 1

Biology 30 Media Index

16 mm

The Human Body Series. 2nd ed.

Microscope Slide Card

Micro Data Cards

Microslide

Chromosomes and Genes in Action
Evolution Under the Microscope
Nerve and Muscle Action
Photosynthesis

Software

Graphical Analysis. Version 2.5
Human Life Processes I
Human Life Processes II
MECC Probability Lab. Version 1.0
Science Toolkit

Videodisc

Cell Biology. Vol. 1
Genetics: Patterns of Diversity

Videotape

The Biology of ... Series
Chemical Engineer and the Puzzle ...
Concepts in Science Series
DNA: Laboratory of Life
A Fine Science 1985 Series
Rap-O-Matics
Science Abled
Science Edition 3 Series
Sexually Transmitted Diseases
Spaceship Earth
Together We Learn
World of Chemistry Series

Chemistry Indexes

The titles listed in this bibliography have been indexed according to the following topics listed in *Science: A Curriculum Guide for the Secondary Level: Chemistry* (p. 4). For the purposes of this bibliography, the additional headings of "General Reference" and "Teacher Reference" have also been included. Titles under these headings may be useful in support of the curriculum and are found at the end of this topical index. Please refer to the curriculum document for time allotments for each topic.

Chemistry 20

- Introduction to Chemistry
- Laboratory Activities (integrated with other units)
- Independent Research
- Atoms and Elements
- Molecules and Compounds
- Chemical Reactions
- Mole Concept and Stoichiometry
- Optional: Behaviour of Gases
- Optional: Consumer Chemistry
- Optional: Organic Chemistry
- Optional: Teacher Developed Unit

Chemistry 30

Each of the compulsory units offers extensive latitude for enrichment and extension.

- Review of Basic Principles
- Laboratory Activities (Integrated with other units)
- Independent Research
- Optional: Case Studies
- Solubility and Solutions
- Energy Changes in Chemical Reactions
- Reaction Kinetics
- Equilibrium
- Acid-Base Equilibria
- Oxidation and Reduction
- Optional: Teacher Developed Unit

Chemistry 20 Topical Index

Atoms and Elements

Acme School of Stuff Series
Atom: Journey Across Subatomic Cosmos
Atoms and the Big Bang
Chemcom. 2nd ed.
Cycle: Chemistry

Chemicals in Action
Chemistry: A First Course
Chemistry Counts
Concepts in Science Series
Electric Chemistry Building

Exploring Chemical Elements and Their ...
Extraordinary Chemistry of Ordinary Things
Foundations of Chemistry. 2nd ed.
Global Science
Heath Chemistry
Learning Cycle: Chemistry
Prentice Hall Chemistry
Prudent Practices for Handling ...

Reading About Chemistry
Science: Process and Discovery
Secret Life of Quanta
Spaceship Earth
STSC Chemistry 10
STSC Chemistry 20
Third Row Elements of the Periodic Table
Under the Microscope
World of Chemistry Series

Behaviour of Gases

Chemcom. 2nd ed.
Chemical Demonstrations: A Hand ... Vol. 2
Chemistry: A First Course
Chemistry Counts
Concepts in Science Series
Electric Chemistry Building

Extraordinary Chemistry of Ordinary Things
Heath Chemistry
Prentice Hall Chemistry
Prudent Practices for Handling ...
World of Chemistry Series

Chemical Reactions

Canadian Women in Science Series
Chemcom. 2nd ed.
Chemicals in Action
Chemistry: A First Course
Chemistry Counts
Concepts in Science Series
Electric Chemistry Building

Extraordinary Chemistry of Ordinary Things
Foundations of Chemistry. 2nd ed.
Heath Chemistry. Canadian ed.
Learning Cycle: Chemistry
Prentice Hall Chemistry
Prudent Practices for Handling ...
STSC Chemistry 10
World of Chemistry Series

Consumer Chemistry

Chemicals in Action
Chemistry Counts
Consumer Chemistry

Indian Uses of Native Plants
Prudent Practices for Handling ...
Two Minutes a Day for a Greener Planet
You and Toxicology

General Reference

Book for Women Who Invent or Want To
Careers for the Future
A Chemical Engineer and the Puzzle of ...
Chemistry Counts
Claiming the Future
Concepts in Science Series
A Concise Dictionary of Chemistry
Facts on File Dictionary of Chemistry
Graphical Analysis. Version 2.5
A Guide to Laboratory Safety ...
Entertaining Science Experiments ...
Invitations to Science Inquiry
Levitating Trains and Kamikaze Genes

Mothers of Invention
New Book of Popular Science
1989 Yearbook of Science and the Future
1990 Yearbook of Science and the Future
Numbers in Science
One Minute Readings
Peterson's Job Opportunities ...
Rainbows, Curve Balls and Other Wonders ...
Rap-O-Matics
Safety in Academic Chemistry Laboratories
Science Abled
Science in Cinema
Science Matters

Science Safety Manual
Serendipity: Accidental Discoveries in Science
Space for All
Uneasy Careers and Intimate Lives

When Do Fish Sleep?
Who's Who of Nobel Prize ...
Why Do Clocks Run Clockwise?
Women in Science

Independent Research

Beyond the Crime Lab
Biology Unit: Chemicals in Agriculture
Chemical Activities
Chemistry and Crime
Chemistry Around You
Chemistry Counts
Chemistry: The Salter's Approach
Cold Fusion
Complete Handbook of Science Fair Projects
Concepts in Science Series
Consumer Chemistry
Drinking Water Hazards
Exploring Chemical Elements and ...
Fertile Soil: A Grower's Guide to ...
Genetics: The Mystery and the Promise
Grasslands
Healthy Homes, Healthy Kids
History of Invention
Inventing the Future
Inventors and Discoverers

Inventors: Profiles in Canadian Genius
Is Our Food Safe?
Issues in Agriculture
It's A Matter of Survival
New Book of Popular Science
Next One Hundred Years
Our Endangered Earth
Ozone
Ozone Crisis
Prudent Practices for Handling ...
Race to Save the Planet
Science Edition 3 Series
Science Fair
Science Fairs: Organization ...
Social Science Unit
Superconductivity
Today's Pollution Dilemma: Industry ...
Trashing the Planet
What Goes Up: The Global Assault ...
World of Chemistry Series
You and Toxicology

Introduction to Chemistry

Chemistry: A First Course
Chemistry Counts
Chemists at Work
Concepts in Science Series
Extraordinary Chemistry of Ordinary Things

Heath Chemistry
Prentice Hall Chemistry
Prudent Practices for Handling ...
STSC Chemistry 10
World of Chemistry Series

Mole Concept and Stoichiometry

Chemicals in Action
Chemistry: A First Course
Concepts in Science Series
Electric Chemistry Building
Extraordinary Chemistry of Ordinary Things
Foundations of Chemistry

Heath Chemistry
Learning Cycle: Chemistry
Prentice Hall Chemistry
Prudent Practices for Handling ...
STSC Chemistry 10
World of Chemistry Series

Molecules and Compounds

Acme School of Stuff Series
Buckyballs: A New Molecule ...
Chemical Demonstrations: A Sourcebook ...

Chemicals in Action
Chemistry Counts
Chemistry: A First Course

Concepts in Science Series
Crystals and Crystal Growing
Electric Chemistry Building
Exploring Chemical Elements ... Compound
Extraordinary Chemistry of Ordinary Things
Fertile Soil
Foundations of Chemistry
Genetics: The Mystery and the Promise

Heath Chemistry
Learning Cycle: Chemistry
Prentice Hall Chemistry
Prudent Practices for Handling ...
Secret Life of Quanta
Spaceship Earth
STSC Chemistry 10
Third Row Elements of the Periodic
World of Chemistry Series

Organic Chemistry

Chemcom. 2nd ed.
Chemical Demonstrations: A Hand ... Vol. 1
Chemical Demonstrations: A Sourcebook ...
Chemicals in Action
Chemistry: A First Course
Chemistry Counts
Chemistry Unit: Petrochemicals
Concepts in Science Series
Electric Chemistry Building

Food for Thought
Foundations of Chemistry
Heath Chemistry
Inventors and Discoverers
Prentice Hall Chemistry
Prudent Practices for Handling ...
Reading About Chemistry
Secret Life of Quanta
STSC Chemistry 20
World of Chemistry Series

Teacher Developed Unit

Chemistry Counts
Concepts in Science Series

Prudent Practices for Handling ...

Teacher Reference

Chaos: Making a New Science
Global Science
In Search of the Big Bang
Instructional Strategies Series

Making the Grade: Evaluating ...
Selling Science to Students
Together We Learn
Together We Learn: A Handbook ...

Chemistry 30 Topical Index

Acid-Base Equilibria

Acid Rain: A Sourcebook ...
Acid Rain Series
Chemical Demonstrations: A Hand ... Vol. 3
Chemistry: A Second Course
Chemistry Counts
Electric Chemistry Building
A Fine Science 1985 Series
Issues for Today

Poisoned Skies
Prentice Hall Chemistry
Prudent Practices for Handling ...
Reading About Biology
Reading About Chemistry
STSC Chemistry 30
Trashing the Planet

Case Studies

Chemistry Counts
You and Toxicology

Energy Changes in Chemical Reactions

Chemcom. 2nd ed.
Chemical Demonstrations: A Hand ... Vol. 1
Chemical Demonstrations: A Source ... Vol. 1
Chemicals in Action
Chemistry: A Second Course
Chemistry Counts

Foundations of Chemistry
Heath Chemistry
Learning Cycle: Chemistry
Prentice Hall Chemistry 3rd. ed.
Prudent Practices for Handling ...
STSC Chemistry 30

Equilibrium

Chemical Demonstrations: A Hand ... Vol. 2
Chemistry: A Second Course
Chemistry Counts

Concepts in Science Series
STSC Chemistry 20
STSC Chemistry 30

General Reference

Book for Women Who Invent or Want To
Careers for the Future
Chemical Engineer and the Puzzle of ...
Chemistry Counts
Claiming the Future
Concise Dictionary of Chemistry
Entertaining Science Experiments with ...
Facts on File Dictionary of Chemistry
Graphical Analysis
Guide to Laboratory Safety ...
Idea Bank Collation, Vol. 1
Invitations to Science Inquiry
Levitating Trains and Kamikaze Genes
Mothers of Invention
New Book of Popular Science
1989 Yearbook of Science and the Future
1990 Yearbook of Science and the Future

Numbers in Science
One Minute Readings
Peterson's Job Opportunities ...
Rainbows, Curve Balls and Other Wonders ...
Rap-O-Matics
Safety in Academic Chemistry Laboratories
Science Abled
Science in Cinema
Science Matters: Achieving Scientific ...
Science Safety Manual
Serendipity: Accidental Discoveries in Science
Space for All: Careers in Science ...
Uneasy Careers and Intimate Lives
When Do Fish Sleep?
Who's Who of Nobel Prize ...
Why Do Clocks Run Clockwise?
Women in Science

Independent Research

Acid Rain: A Sourcebook for Young People
Beyond the Crime Lab
Biology Unit: Chemicals in Agriculture
Chemical Activities
Chemistry and Crime
Chemistry Around You
Chemistry Counts

Chemistry: The Salter's Approach
Cold Fusion
Complete Handbook of Science Fair Projects
Concepts in Science Series
Consumer Chemistry
Drinking Water Hazards
Electric Chemistry Building

Exploring Chemical Elements ...
Fertile Soil
Genetics: The Mystery and the Promise
Grasslands
Healthy Homes, Healthy Kids
History of Invention
Inventing the Future
Inventors and Discoverers
Inventors: Profiles in Canadian Genius
Is Our Food Safe?
It's A Matter of Survival
Next One Hundred Years
Our Endangered Earth

Oxidation and Reduction
Ozone Crisis
Prudent Practices for Handling ...
Race to Save the Planet
Reading About Chemistry
Science Fair
Science Fairs: Organization ...
Social Science Unit: The Role of ...
Superconductivity: From Discovery ...
Today's Pollution Dilemma
What Goes Up
You and Toxicology

Oxidation and Reduction

Acme School of Stuff Series
Chemistry Counts
Chemical Demonstrations: A Hand ... Vol. 4
Chemistry: A Second Course
Concepts in Science Series

Electric Chemistry Building
Prentice Hall Chemistry
Prudent Practices for Handling ...
Reading About Chemistry
STSC Chemistry 30

Reaction Kinetics

Acme School of Stuff Series
Chemical Demonstrations: A Hand ... Vol. 4
Chemistry: A Second Course
Chemistry Counts
Concepts in Science Series
Electric Chemistry Building
Foundations of Chemistry

Learning Cycle: Chemistry
Ozone
Ozone Crisis
Prentice Hall Chemistry
Prudent Practices for Handling ...
Reading About Chemistry
STSC Chemistry 30

Review of Basic Principles

Chemistry: A Second Course
Chemistry Counts

STSC Chemistry 20
STSC Chemistry 30

Solubility and Solutions

Chemical Demonstrations: A Hand...Vol. 1 & 3
Chemical Demonstrations: A Sourcebook ...
Chemistry: A Second Course
Chemistry Counts

Crystals and Crystal Growing
Fertile Soil
Learning Cycle: Chemistry
Prentice Hall Chemistry
STSC Chemistry 20

Teacher Developed Unit

Chemistry Counts
Concepts in Science Series

Prudent Practices for Handling ...

Teacher Reference

Chaos: Making a New Science
Global Science: Energy, Resources ...
Instructional Strategies Series

Making the Grade: Evaluating ...
Selling Science to Students
Together We Learn
Together We Learn: A Handbook on ...

Chemistry 20 Media Index

Print-Poetry

Grasslands

Software

The Electrical Chemistry Building
Graphic Analysis

Videodisc

Race to Save the Planet

Videotapes

The Acme School of Stuff Series
Atoms and the Big Bang
Buckyballs: A New Molecule ...
Canadian Women in Science Series
A Chemical Engineer and the Puzzle of ...
Chemists at Work
Concepts in Science Series
Race to Save the Planet Series
Rap-O-Matics
Science Abled
Science Edition 3 Series
Spaceship Earth
Third Row Elements of the Periodic Table
Together We Learn
World of Chemistry Series

Chemistry 30 Media Index

Print-Poetry

Grasslands

Software

Electrical Chemistry Building
Graphical Analysis

Videodisc

Race to Save the Planet

Videotapes

Acid Rain Series
The Acme School of Stuff Series
A Chemical Engineer and the Puzzle of ...
Concepts in Science Series
A Fine Science 1985 Series
Race to Save the Planet Series
Rap-O-Matics
Science Abled
Together We Learn
World of Chemistry Series

Physics Indexes

The titles listed in this bibliography have been indexed according to the following topics listed in *Science: A Curriculum Guide for the Secondary Level: Physics* (p. 81, 165). For the purposes of this bibliography, the additional headings of "General Reference" and "Teacher Reference" have also been included. Titles under these headings may be useful in support of the curriculum and are found at the end of this topical index. Please refer to the curriculum document for time allotments for each topic.

Physics 20

- I. The Physics of Everyday Things
- II. Waves
- III. Light
- IV. Heat
- V. Optional: Sound
- VI. Optional: Optics

Physics 30

- I. Kinematics and Dynamics
- II. Mechanical Energy
- III. Electricity
- IV. Nuclear Physics
- V. Optional: Applications of Kinematics and Dynamics
- VI. Optional: Fluid Mechanics
- VII. Optional: Electromagnetism
- VIII. Optional: Atomic Physics

Physics 20 Topical Index

<h3>General Reference</h3>

Book for Women Who Invent or Want To
Careers for the Future
Claiming the Future
Concise Dictionary of Physics
Entertaining Science Experiments ...
Facts on File Dictionary of Physics
Flying Circus of Physics with Answers
Graphical Analysis
Idea Bank Collation
Invitations to Science Inquiry
Levitating Trains and Kamikaze Genes
Mothers of Invention
1989 Yearbook of Science and the Future

1990 Yearbook of Science and the Future
Numbers in Science
One Minute Readings
Peterson's Job Opportunities ...
Physics for Poets
Rainbows, Curve Balls and Other ...
Rap-O-Matics
Science Abled
Science in Cinema
Science Matters: Achieving Scientific Literacy
Science Safety Manual
Space for All: Careers in Science ...
Uneasy Careers and Intimate Lives

When Do Fish Sleep? Who's Who of Nobel Prize Winners ...	Why Do Clocks Run Clockwise? Women in Science
---	--

Heat

Conceptual Physics Energy and Society Energy From Efficiency Fundamentals of Physics Fundamentals of Physics: An Introductory ... Heat and Temperature Set Heath Physics Introduction to Physics Learning Cycle: Physics	Learning Cycle: Physical Science Mechanical Universe Series Merrill Physics: Principles and Problems Physics in Action Physics Today 1 Science Toolkit Science: Process and Discovery Song of the Paddle What Light Through Yonder Window Breaks?
--	---

Light

Acme School of Stuff Series APPIL Student's Resource Book Atom: Journey Across Subatomic Cosmos Canadian Women in Science Series Conceptual Physics Crystals and Lasers: Applications of Lasers Fundamentals of Physics: An Introductory ... Fundamentals of Physics: A Senior Course Introduction to Physics Heath Physics Learning Cycle: Physical Science	Looking at Microscopes Mechanical Universe Series Merrill Physics: Principles and Problems Photonics: The New Science of Light Physics in Action Physics Today 1 Science Edition 3 Series Science Toolkit Secret Life of Quanta Understanding Lasers What Light Through Yonder Window Breaks?
--	---

Optics

(See also entries under Light)

Experimenting With Illusions Homemade Holograms Inventors and Discoverers	Learning Cycle: Physics Vision
---	-----------------------------------

Physics of Everyday Things

Clouds in a Glass of Beer Fundamentals of Physics: A Senior Course Introduction to Physics	Heath Physics Indian Handcrafts Physics in Action
--	---

Science Challenge

Complete Handbook of Science Fair Projects
It's A Matter of Survival
Science Fair
Science Fairs: Organization ...
Turning the World Inside Out and ...

Sound

Conceptual Physics
Fundamentals of Physics: An Introductory
Fundamentals of Physics: A Senior Course
Heath Physics
Introduction to Physics
Learning Cycle: Physical Science
Merrill Physics: Principles and Problems

Physics
Physics in Action
Physics Today 1
Science Edition 3 Series
Sound Science
Speech and Hearing
What Light Through Yonder Window Breaks?

Teacher Reference

An Old Man's Toy
Chaos: Making a New Science
In Search of the Big Bang
Instructional Strategies Series
Making the Grade: Evaluating ...

PhysicAL: An Activity Approach to Physics
Physics: Principles with Applications
Selling Science to Students
Thinking Physics: Practical Lessons ...
Together We Learn
Together We Learn: A Handbook on ...

Waves

Concepts in Science Series
Conceptual Physics
Fundamentals of Physics: An Introductory ...
Fundamentals of Physics: A Senior Course
Introduction to Physics
Heath Physics

Learning Cycle: Physics
Mechanical Universe Series
Merrill Physics: Principles and Problems
One Body
Physics in Action
Physics Today 1
Science Toolkit

Physics 30 Topical Index

Applications of Kinematics and Dynamics

(See heading Momentum)

(See also titles listed under Kinematics and Dynamics)

Atomic Physics

Acme School of Stuff Series
Atom: Journey Across Subatomic Cosmos
Atoms and the Big Bang
Biology Matters
Buckyballs: A New Molecule ...
Concepts in Science Series
Coulumb and Millikan

Einstein's Universe
Energy From Nuclear Fusion
Relativity Visualized
Relativity for the Layman
Risks of Nuclear Power
Stephen Hawking
Trashing the Planet

Electricity

Acme School of Stuff Series
APPIL Student's Resource Book

Beyond the Crime Lab
Concepts in Science Series

Conceptual Physics
Coulumb and Millikan
Fundamentals of Physics: An Introductory ...
Fundamentals of Physics: A Senior Course
Heath Physics
Introduction to Physics
Inventors and Discoverers

Mechanical Universe Series
Merrill Physics: Principles and Problems
One Body
Physics 12 Handbook: A Student Guide
Physics in Action
Physics Today 1
Secret Life of Quanta
Superconductivity

Fluid Mechanics

APPIL Student's Resource Book
Conceptual Physics
Fundamentals of Physics: An Introductory ...
Fundamentals of Physics: A Senior Course
Heath Physics

Introduction to Physics
Path of the Paddle
Physics Today 1
Song of the Paddle

General Reference

Book for Women Who Invent or Want To
Careers for the Future
Claiming the Future
Concise Dictionary of Physics
Entertaining Science Experiments ...
Facts on File Dictionary of Physics
Flying Circus of Physics with Answers
Graphical Analysis
Idea Bank Collation
Invitations to Science Inquiry
Levitating Trains and Kamikaze Genes
Mothers of Invention
1989 Yearbook of Science and the Future
1990 Yearbook of Science and the Future
Numbers in Science
One Minute Readings
Peterson's Job Opportunities for ...

Physics for Poets
Rainbows, Curve Balls and Other Wonders ...
Rap-O-Matics
Science Abled
Science in Cinema
Science Matters: Achieving Scientific Literacy
Science Safety Manual
Serendipity: Accidental Discoveries in Science
Space for All: Careers in Science ...
Uneasy Careers and Intimate Lives
When Do Fish Sleep?
Who's Who of Nobel Prize ...
Why Do Clocks Run Clockwise?
Women in Science

Kinematics and Dynamics

Acme School of Stuff Series
Conceptual Physics
Falling Through Air
Fundamentals of Physics: An Intro ...
Fundamentals of Physics: A Senior Course
Heath Physics
Introduction to Physics
Inventors and Discoverers
Learning Cycle: Physics
Mechanical Universe Series

Merrill Physics: Principles and Problems
Newton At The Bat
One Body
Path of the Paddle
Physics in Action
Physics of Dance
Physics Today 1
Physics 12 Handbook
Science: Process and Discovery
Song of the Paddle
Vectors

Mechanical Energy

APPIL Student's Resource Book
Conceptual Physics
Fine Science 1985 Series
Introduction to Physics
Fundamentals of Physics: An Introduction
Fundamentals of Physics: A Senior Course
Heath Physics
Introduction to Physics

Mechanical Universe Series
Merrill Physics: Principles and Problems
Newton At The Bat
Physics in Action
Physics Today 1
Physics 12 Handbook: A Student Guide
Song of the Paddle

Momentum - Refer to *Applications of Kinematics & Dynamics* in curriculum guide

Conceptual Physics
Heath Physics
Introduction to Physics
Mechanical Universe Series

Merrill Physics: Principles and Problems
Newton At The Bat. Rev. ed.
Physics Today 1
Physics 12 Handbook: A Student Guide

Nuclear Physics

Anti-Nuclear Game
Cold Fusion
Concepts in Science Series
Conceptual Physics
From Quarks to the Cosmos
Fundamentals of Physics: An Introduction
Fundamentals of Physics: A Senior Course
Heath Physics
Introduction to Physics
Inventors and Discoverers

Mechanical Universe Series
Merrill Physics: Principles and Problems
Nuclear War: Opposing Viewpoints
One Body
Our Endangered Earth
Physics in Action
Physics Today 1
Science: Process and Discovery
Secret Life of Quanta
Uranium
Uranium

Science Challenge

Clouds in a Glass of Beer
Complete Handbook of Science Fair ...
Homemade Holograms
It's A Matter of Survival

Nature of Things: Chaos, Science and ...
Science Fair
Science Fairs: Organization ...
Superconductivity
Turning the World Inside Out ...

Teacher Reference

Acme School of Stuff Series
Beyond Einstein
Brief History of Time
Chaos: Making a New Science
Dancing Wu Li Masters
From Quarks to the Cosmos
In Search of Schrodinger's Cat
Instructional Strategies Series

Making the Grade
Old Man's Toy
Order Out of Chaos
PhysicAL: An Activity Approach to Physics
Selling Science to Students
Thinking Physics
Together We Learn
Together We Learn: A Hand ...

Physics 20 Media Index

Kit

Heat and Temperature Set

Software

Coulumb and Millikan
Graphical Analysis. Version 2.5
One Body
Science Toolkit

Videotapes

The Acme School of Stuff Series
Canadian Women in Science Series
Concepts in Science Series
Crystals and Lasers: Applications of Lasers
Energy and Society
Energy From Efficiency: A Video ...
The Mechanical Universe Series
Rap-O-Matics
Science Abled
Science Edition 3 Series
Together We Learn

Physics 30 Media Index

Kit

Uranium

Software

Coulumb and Millikan
Falling Through Air
Graphical Analysis. Version 2.5
One Body
Science Toolkit

Videotapes

The Acme School of Stuff Series
Atoms and the Big Bang: A Video ...
Buckyballs: A New Molecule ...
Chemistry: A Video Interview ...
Concepts in Science Series
Energy From Nuclear Fusion ...
A Fine Science 1985 Series
The Mechanical Universe Series
The Nature of Things: Chaos, Science ...
Rap-O-Matics
The Risks of Nuclear Power
Science Abled
Together We Learn
Uranium
Vectors

Free Materials Index

Kit (One copy was sent free to schools)

Grains and Seeds

Landscapes: A Guide to Landforms and Ecology of Southern Saskatchewan

Saskatchewan Field Crops

Saskatchewan Flora and Fauna: Kingdoms of the Spore, An Invertebrate World

Saskatchewan Flora and Fauna 2: Vertebrates

Uranium

Print-Non-Fiction

Biology Unit: Chemicals in Agriculture

Chemistry Unit: Petrochemicals

The Economics of Wild Rice Farming in Northern Saskatchewan

Focus On Series

Guide to Laboratory Safety and Chemical Management

Information Brochure on Wild Rice

Is Our Food Safe?

Management of Saskatchewan Park Lands

Project Wild

The Role of Animal Agriculture in the Ecosystem

Saskatchewan Biotechnology

Saskatchewan Electrical Energy Options Review Panel Final Report to SaskPower

Selling Science to Students

Social Science Unit: The Role of Chemicals

Space for All: Careers in Science, Mathematics, Engineering and Computer Science for
Students with Disabilities

Teacher Wild Rice Resource Package

Wild Rice Growers Training Manual

16 mm Film (Borrowing Privileges)

The Human Body Series

This Marsh Is Ours

Map

The World Map

pH of Saskatchewan Soils

Inexpensive Materials Index

Print-Non-Fiction

Advances in Genetic Technology	\$11.00
Alaska's Wilderness Medicines	\$ 9.95
Biological Science: Student Study Guide	U.S. \$ 8.90
Biology Unit: Chemicals in Agriculture	\$ 4.00
Biology Matters: Science, Technology and Society Issues	\$ 5.95
Biology: Discovering Life. Vol. 3. Plant System	\$ 9.00
Biology: Discovering Life. Vol. 2. The Diversity of Life	\$ 9.00
Biomedical Technology	U.S. \$ 6.90
Canada's Farm Population	\$10.00
Careers for the Future	\$ 9.95
Chemistry Unit: Petrochemicals	\$ 4.00
Claiming the Future	\$ 9.95
The Dancing Wu Li Masters	\$ 6.95
The Double Helix	\$ 6.99
Entertaining Science Experiments with Everyday Objects	\$ 4.25
The Fallacy of Wildlife Conservation	\$10.95
Food For Thought	\$ 2.00
Genes and Surroundings	U.S. \$ 9.90
Genetics in Canadian Health Care	\$ 2.95
Grasslands	\$ 8.95
Guide to Farm Practice in Saskatchewan	\$ 2.00
Human Reproduction: Social and Technological Aspects	U.S. \$ 6.90
Indian Use of Wild Plants for Crafts, Food, Medicine, and Charms. 1st Canadian ed.	\$ 6.95
Indian Use of Native Plants	\$ 6.95
The Inner City in Transition	\$10.00
Instructional Strategies Series	ea. \$10.00
Inventors: Profiles in Canadian Genius	\$ 9.95
Investigating the Human Environment: Land Use	\$ 6.90
Iroquois Use of Maize and Other Food Plants	\$ 6.95
Issues in Agriculture	\$ 2.00
Nuclear War: Opposing Viewpoints	\$ 9.95
Out to Learn: Guidelines and Standards	\$ 8.00
A Prairie Coulee	\$ 8.95
Rainbows, Curve Balls and Other Wonders of the Natural World Explained	\$10.95
Safety in Academic Laboratories	U.S. \$ 3.00
Science Club: Organization and Program Manual	\$ 8.00
Science, Technology and Society	U.S. \$ 6.90
Social Science Unit: The Role of Chemicals	\$ 4.00
Sound Science	\$ 7.96
STSC Chemistry 10, 20, 30	\$ 4.75/ \$ 5.50/ \$ 6.00
Two Minutes a Day for a Greener Planet	\$ 4.95
You and Toxicology	\$10.00

Microslide

Chromosomes and Genes in Action	\$ 5.94
Evolution Under the Microscope	\$ 5.94
Life in the Soil	\$ 5.94
Measurement Under the Microscope	\$ 5.94
The Microscope: A Tool for Learning	\$ 5.94
Nerve and Muscle Action	\$ 5.94
Path of Water in Plants	\$ 5.94
Photosynthesis	\$ 5.94
Taxonomy	\$ 5.94

Videotape

Acid Rain Series	\$ 1.00 ea. plus tape
Acme School of Stuff Series	\$ 1.00 ea. plus tape
The Biology of Series	\$ 1.00 ea. plus tape
Concepts in Science Series	\$ 1.00 ea. plus tape
A Fine Science 1985 Series	\$ 1.00 ea. plus tape
The Human Body Series	\$ 1.00 ea. plus tape
The Mechanical Universe Series	\$ 1.00 ea. plus tape
Race To Save the Planet Series	\$ 1.00 ea. plus tape
Science Edition 3 Series	\$ 1.00 ea. plus tape
Together We Learn	\$ 1.00 ea. plus tape
World of Chemistry Series	\$ 1.00 ea. plus tape

Out of Print Index

The following titles have been listed in the bibliography. While they are currently out of print, many have previously been sent free to schools or have been listed in the *Textbooks Circular* and therefore should be available in the schools. The software packages have been listed because of their previous accessibility by schools.

- Landscapes: A Guide to Landforms
- MECC: Probability Lab
- MECC: Dataquest North American Mammal
- Saskatchewan Field Crops
- Saskatchewan Biotechnology
- Saskatchewan Flora and Fauna 2: Vertebrates
- Saskatchewan Flora and Fauna: Kingdoms of the Spore, an Invertebrate World

Distributor Directory

AAAS	American Association for the Advancement of Science 1333 H Street, Northwest Washington, DC 20005 (202) 326-6446 Fax: (202) 371-9849	AMCS	American Chemical Society 1155 Sixteenth Street N.W. Washington, D.C. 20036 (202) 872-4600 Fax: (202) 872-6336
ADD	Addison-Wesley Publishers 26 Prince Andrew Pl. P.O. Box 580 Don Mills, ON M3C 2T8 (416) 447-5101 Fax: (416) 443-0948	ANB	Alaska Northwest Books 733 West 4th Avenue Suite 300 Anchorage, AK 99501 (907) 278-8838 Fax: (907) 278-8839
AGC	Ag Access 603 Fourth Street Davis, CA 95616 (916) 756-7177 Fax: (916) 756-7188	APES	Association of Professional Engineers 2255 13th Avenue Regina, SK S4P 0V6 (306) 525-9547 Fax: (306) 525-0851
AGI	Ag Insight 502 - 45th Street West Saskatoon, SK S7L 6H2 (306) 653-0979 Fax: (306) 244-2918	BAN	Bantam Books of Canada Inc. Div. of Doubleday Publishing 105 Bond Street Toronto, ON M5B 1Y3 (416) 340-0777 (416) 340-1069
ALB	Alberta Environment Education Branch - 12th floor 9820 - 106th Street Edmonton, AB T5K 2J6 (403) 427-6310 Fax: (403) 427-2512	BB	Book Bureau 1308 Winnipeg Street Regina, SK S4R 1J6 (306) 787-5987 Fax: (306) 787-9747
ALL	Thomas Allen & Son Ltd. 390 Steelcase Road East Markham, ON L3R 1G2 (416) 475-9126 (800) 387-4333 Fax: (416) 475-6747	BCN	Book Centre Inc. 1140 Beaulac St. Montreal, PQ H4R 1R8 (800) 363-2845 (514) 332-4154 Fax: (514) 335-1915

BDB	Broderbund Software, Inc. P.O. Box 6125 Novato, CA 94948-6125 (415) 382-4600 (415) 382-4400 Fax: (415) 382-4419	CFV	Coronet Film & Video 1870 Birchmount Road Scarborough, ON M1P 2J7 (416) 293-3621 (800) 567-3800 Fax: (416) 299-2539
BIC	Beef Information Centre #8 - 2010 - 7th Avenue Regina, SK S4R 1C2 (306) 757-8528	CGPC	Canada Communications Group Supply & Services Canada 45 Sacre-Coeur Hull, PQ K1A 0S9 (819) 956-4802 (819) 997-2560 Fax: (819) 994-1498
BORE	Boreal Limited 399 Vansickle Road St. Catharines, ON L2S 3T4 (416) 984-3000 (800) 387-9393 Fax: (416) 984-3311	CHI	Chromavision International Inc. 1172 Rainbow Street Ottawa, ON K1J 6X7 (613) 748-5335 Fax: (613) 748-1073
CAHPER	Canadian Association for Health Physical Ed. & Recreation 1600 James Naismith Dr-Ste 606 Gloucester, ON K1B 5N4 (613) 748-5622 Fax: (613) 748-5706	CIDA	Canadian International Development Agency 200 Promenade du Portage Hull, PQ K1A 0G4 (819) 997-5456 Fax: (819) 953-5469
CBC	CBC Enterprises Canadian Broadcasting Corp. P.O. Box 500, Station A Toronto, ON M5W 1E6 (416) 975-3505 Fax: (416) 975-3482	CMG	Canadian Manda Group P.O. Box 920 Station U Toronto, ON M8Z 5P9 (416) 251-1822 Fax: (416) 251-3679
CCME	Canadian Council on Ministers of the Environment 326 Broadway Winnipeg, MB R3C 0S5 (204) 948-2090 Fax: (204) 948-2125	CV	Classroom Video 9005C Centaurus Circle Burnaby, BC V3J 7N4 (604) 420-3066 Fax: (604) 420-3095

DGL	Douglas & McIntyre Ltd. 1615 Venables Street Vancouver, BC V5L 2H1 (604) 254-7191 Fax: (604) 254-9099	FIF	Fifth House Publishers 620 Duchess Street Saskatoon SK S7K 0R1 (306) 242-4936 Fax: (306) 242-7667
DOU	Doubleday Canada Ltd. 105 Bond St. Toronto, ON M5B 1Y3 (800) 387-2670 (416) 340-0777 Fax: (416) 340-1069	FIR	Firefly Books 250 Sparks Avenue Willowdale, ON M2H 2S4 (800) 387-6192 (416) 499-8412 Fax: (416) 499-8313
EBP	Encyclopaedia Britannica 175 Holiday Inn Drive P.O. Box 2249 Cambridge, ON N3C 3N4 (519) 658-4621 (800) 465-9439 Fax: (519) 658-5044	GAG	Gage Educational Publishing Division of Canada Publishing Corp. 164 Commander Blvd. Agincourt, ON M1S 3C7 (416) 293-8141 Fax: (416) 293-9009
ENV	Environment Canada, Atlantic Region 45 Aldernay Drive 15 Floor, Queen Square Dartmouth, N.S. B2Y 2N6 (902) 426-7990	GMC	Globe/Modern Curriculum Press 1870 Birchmount Road Scarborough, ON M1P 2J7 (416) 293-3621 (800) 567-3800 Fax: (416) 299-2529
FFH	Films for the Humanities & Sciences Incorporated P.O. Box 2053 Princeton, NJ 08540 (609) 452-1128 Fax: (609) 452-1602	GNP	General Publishing 30 Lesmill Road Don Mills, ON M3B 2T6 (416) 445-3333 Fax: (416) 445-5967
FHW	Fitzhenry & Whiteside Ltd. 91 Granton Drive Richmond Hill, ON L4B 2N5 (800) 387-9776 (416) 764-0030 Fax: (416) 764-7156	GRO	Grolier Ltd. 14 Overlea Blvd. Toronto, ON M4H 1P5 (416) 425-1924 (800) 461-1377 Fax: (416) 425-8858

GUC	Guidance Centre/OISE Marketing Manager - Guidance 712 Gordon Baker Road Willowdale, ON M2H 3R7 (416) 590-7989 Fax: (416) 590-7910	HRW	Holt, Rinehart and Winston of Canada Ltd 55 Horner Avenue Toronto, ON M8Z 4X6 (416) 255-4491 Fax: (416) 255-4046
HAI	Hawkhill Associates, Inc. 125 East Gilman Street Madison, WI 53703 (608) 251-3934	HTH	DC Heath Canada Ltd. 100 Adelaide St. West Suite 1600 Toronto, ON M5H 1S9 (416) 362-6483 Fax: (416) 362-7942
HBJC	Harcourt Brace Jovanovich, Canada 55 Horner Avenue Toronto, ON M8Z 4X6 (416) 255-4491 (800) 268-2132 Fax: (416) 255-4046	IBM	IBM Education Services 500 - 1801 Hamilton Street 6th Floor, Department 022 Regina, SK S4P 4B4 (306) 565-4243 Fax: (306) 565-4280
HCI	Hoechst Canada Inc 295 Henderson Drive Regina, SK S4N 6C2 (306) 721-4500 Fax: (306) 721-3119	INP	Insight Press 614 Vermont Street San Fransisco, CA 94107 (415) 826-3488
HCP	HarperCollins Canada Ltd. 1995 Markham Road Scarborough, ON M1B 5M8 (416) 321-2241 (800) 387-0117 Fax: (416) 321-3033	IPS	Island Press P.O. Box 7 Covelo, CA 95428 (707) 983-6432 Fax: (707) 983-6414
HMF	Houghton Mifflin Canada Ltd. 150 Steelcase Road West Markham, ON L3R 3J9 (416) 475-1755 Fax: (416) 475-5290	IRO	Iroqrafts Ltd R.R. 2 Ohsweken, ON NOA 1MO (416) 765-4206 Fax: (416) 765-5633

IRW	Irwin Publishing 1800 Steeles Ave. W. Concord, ON L4K 2P3 (416) 660-0611 Fax: (416) 660-0676	LEB	J.M. LeBel Enterprises Ltd. 10335-61st Avenue Edmonton, AB T6H 1K9 (403) 536-8205
JLM	J&L MacPherson Educational Services Ltd. 3030 Collens Hill Road Kelowna, BC V1Z 1P5 (604) 769-4321	LIT	Little, Brown & Co. (Canada) 148 Yorkville Avenue Toronto, ON M5R 1C2 (416) 967-3888 Fax: (416) 967-4591
KARP	Karitann Publishers 3516 - 104 Street Edmonton, AB T6J 2J7 (403) 436-3745 Fax: same as phone	LPLP	LPL Publishers P.O. Box 48808, Dept. 444 Bentall Centre Vancouver, BC V7X 1A6 Fax: (604) 682-8578
KEY	Key Porter Books Limited 70 The Esplanade Toronto, ON M5E 1R2 (416) 862-7777 Fax: (416) 862-2304	LPP	Lone Pine Publishing Ltd. 206, 10426 - 81st Avenue Edmonton, AB T6E 1X5 (403) 433-9333 Fax: (403) 433-9646
KHP	Kendall/Hunt Publishing Co. 2460 Kerper Boulevard P.O. Box 539 Dubuque IA 52001 (319) 589-2814 (800) 338-5578 Fax: (800) 346-2377	MCC	McClelland & Stewart Ltd. 380 Esna Park Dr. Markham, ON L3R 1H5 (800) 268-5748 (416) 940-8862 Fax: (416) 940-8864
KIN	Kinetic Film Enterprises 408 Dundas Street East Toronto, ON M4A 2A5 (416) 963-5979 (800) 263-6910 Fax (416) 925-0653	MEA	P. D. Meany Co. Inc. P.O. Box 534 Port Credit, ON L5G 4M2 (416) 567-5803 Fax: (416) 567-1657
KYF	Key Foundation Box 155 Midhurst, ON L0L 1X0 (705) 726-2276 Voice/Fax: (705) 722-4803	MEL	Marvin Melnyk Associates P.O. Box 220 Queenston, ON L0S 1L0 (416) 262-4964 Fax: (416) 262-5303

MEY	Meyerbooks P.O. Box 427 Glenwood, IL 60425 (708) 757-4950	NDSE	Northern Division Saskatchewan Education Box 5000, 1328 Mistasinihk La Ronge, SK S0J 1L0 (306) 425-4382
MHP	Media House Productions 1174 Winnipeg Street Regina, SK S4R 1J6 (306) 359-0977 Fax: (306) 569-2240	NEL	Nelson Canada 1120 Birchmount Rd. Scarborough, ON M1K 5G4 (416) 752-9100 Fax: (416) 752-9646
MHR	McGraw-Hill Ryerson Ltd. 300 Water Street Whitby, ON L1N 9B6 (416) 430-5000 Fax: (416) 430-5020	NEW	NeWest Publishers Ltd. 10359 - 82nd Avenue Suite 310 Edmonton, AB T6E 1Z9 (403) 432-9427 Fax: (403) 432-9429
MMC	Maxwell Macmillan Canada, Inc. 539 Collier Macmillan Drive Cambridge, ON N1R 5W9 (800) 465-2288 (416) 449-6030 Fax: (416) 449-0068 Orders: Fax (519) 740-8408	NFB	National Film Board 424 - 21st Street East Saskatoon, SK S7K 0C2 (306) 975-4247 Fax: (306) 975-5897
MON	Monarch Books of Canada 5000 Dufferin Street Downsview, ON M3H 5T5 (416) 663-8231 Fax: (416) 736-1702	NGS	National Geographic Society Ste. 210 - 211 Watline Avenue Mississauga, ON L4Z 1P3 (800) 638-2948 (U.S. toll free) (416) 890-1111 Fax: (416) 890-5080
MUS	Musson Publishing 30 Lesmill Road Don Mills, ON M3B 2T6 (416) 445-3333 Fax: (416) 445-5967	OFAC	Ontario Farm Animal Council 7195 Millbrook Drive Mississauga, ON L5N 4H1 (416) 821-3880 Fax: (416) 858-1589
NAP	National Academy Press 2101 Constitution Avenue NW Washington, DC 20418 (202) 334-3113	ORYP	Oryx Press 4041 N. Central at Indian School Road, Suite 700 Phoenix, AZ 85012-3397 (602) 265-2651 Fax: (602) 265-6250

OUP	Oxford University Press 70 Wynford Dr. Don Mills, ON M3C 1J9 (800) 387-8020 (416) 441-2941 Fax: (416) 444-0427	RON	Ron MacQueen 3205 Hoskins Road North Vancouver, BC V7J 3B5 (604) 987-5966 (604) 922-3931
PBC	Penguin Books Canada Ltd. 1220 Nicholson Road New Market, ON L3Y 7V1 (800) 668-6540 (416) 836-6730 Fax: (416) 836-6729	RUP	Rutgers University Press 109 Church Street New Brunswick, NJ 08901 (201) 932-7764 Fax: (908) 932-7039
PEP	Pacific Educational Press Faculty of Education Univ. of British Columbia Vancouver, BC V6T 1Z5 (604) 822-5385 Fax: (604) 822-6603	S17	S17 Science Supplies & Services Box 1591 Kingston, ON K7L 5C8 (613) 544-6548
PIP	Pippin Publishing Ltd. 150 Telson Road Markham, ON L3R 1E5 (416) 513-6966 Fax: (416) 513-6977	SAAF	Saskatchewan Agriculture & Food Walter Scott Building - B33 3085 Albert Street Regina, SK S4S 0B1 (306) 787-6933 Fax: (306) 787-0216
PRN	Prentice-Hall Canada, Inc. 1870 Birchmount Rd. Scarborough, ON M1P 2J7 (800) 567-3800 (416) 293-3621 Fax: (416) 299-2529	SAIP	Sinauer Assoc. Inc. Publishers 108 N. Main Street Sunderland, MA 01375 (413) 665-3722 Fax (413) 665-7292
RAN	Random House of Canada Ltd. 1265 Aerowood Drive Mississauga, ON L4W 1B9 (800) 668-4247 (416) 624-0672 Fax: (416) 624-6217	SBS	Scholarly Book Services Inc. 77 Mowat Avenue, Suite 403 Toronto ON M6K 3E3 (416) 533-5490 Fax: (416) 533-5632

SCH	Scholastic Canada Ltd. 123 Newkirk Road Richmond Hill, ON L4C 3G5 (800) 268-3860 (416) 883-5300 Fax: (416) 883-4113	SOEEA	Saskatchewan Outdoor and Environmental Education Association 3903 Brandy Lane Drive Regina, SK S4S 7E1
SED	Saskatchewan Economic Development 206 - 15 Innovation Blvd. Saskatoon, SK S7N 2X8 (306) 933-7200 Fax: (306) 933-8244	SOU	Gordon Soules Book Publishers Ltd. 1352-B Marine Drive West Vancouver, BC V7T 1B5 (604) 688-5466 (604) 922-6588 Fax: (604) 688-5442
SIDRU	Saskatchewan Instructional Developmental & Research Unit Faculty of Education University of Regina Regina, SK S4S 0A2 (306) 585-4309 Fax: (306) 585-4880	SPK	Saskatchewan Parks and Renewable Resources Communications Branch 3211 Albert Street Regina, SK S4S 5W6 (306) 787-2700
SIE	Science Inquiry Enterprises 14358 Village View Lane Chino Hills, CA 91709 (714) 590-4618	STATS	Statistics Canada 900, 2002 Victoria Avenue Regina, SK S4P 0R7 (306) 780-5405 Fax: (306) 780-5403
SKE	Saskatchewan Environment and Public Safety 3085 Albert Street, Rm. 319 Regina, SK S4S 0B1 (306) 787-6113 (306) 787-6107 Fax: (306) 787-0930	STO	Stoddart Publishing Co. Ltd. 30 Lesmill Road Don Mills, ON M3B 2T6 (416) 445-3333 Fax: (416) 445-5967
SKP	SaskPower Corporation Communications 2025 Victoria Avenue Regina, SK S4P 0S1 (306) 566-3187 Fax: (306) 566-2548	SUN	Sunburst/Wings for Learning P.O. Box 660002 Scots Valley, CA 95067-0002 (800) 321-7511 Fax: (408) 438-4214

TCH	The Common Heritage 200 Isabella Street Suite 300 Ottawa, ON K1S 1V7 (613) 235-7205 (613) 235-7263	UTP	University of Toronto Press 5201 Dufferin Street Downsview, ON M3H 5T8 (416) 667-7791 (416) 978-4738
UCC	University College of Cape Breton Press P.O. Box 5300 Sydney, NS B1P 6L2 (902) 539-5300	VERN	Vernier Software 2920 S.W. 89th Street Portland, OR 97225 (503) 297-5317 (503) 297-1760
UOP	University of Ottawa Press 603 Cumberland Ottawa, ON K1N 6N5 (613) 564-2270 Fax: (613) 564-9284	WCWC	Western Canada Wilderness Committee 20 Water Street Vancouver, BC V6B 1A4 (604) 683-8220 Fax: (604) 683-8229
UOW	University of Wisconsin Press 114 North Murray Street Madison, WI 53715 (608) 262-7756 Fax: (608) 262-7560	WIL	John Wiley & Sons Canada Ltd. 22 Worcester Road M9W 1L1 (416) 675-3580 (800) 567-4797 Fax: (416) 675-6599
USA	University of Saskatchewan Community Relations Administration E280 Saskatoon, SK S7N 0W0 (306) 966-6202 Fax: (306) 966-6815	WIP	Women Inventors Project 1 Greensborough Drive Suite 302 Etobicoke, ON M9W 1C8 (416) 243-0668 Fax: (416) 243-0688
USB	University of Saskatchewan Bookstore University of Saskatchewan Saskatoon, SK S7N 0W0 (306) 966-4468	YSF	Youth Science Foundation Suite 904 Ottawa, Ontario K1P 5H3 (613) 238-1671 Fax: (613) 238-1677
UTH	Utah State University Department of Secondary Education Logan, UT 84322-2815 (801) 750-2222 Fax (801) 750-3850		

EDUCATION LIBRARY