



PHYSICS GRADE 11 AND GRADE 12 LEARNING RESOURCES

A Reference for Selecting Learning
Resources (October 2007)

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with copyright law. If cases are identified where this has not been done,
please notify Manitoba Education, Citizenship and Youth. Errors or omissions
will be corrected in a future edition.

Any websites referenced in this document are subject to change without
notice. Educators are advised to preview and evaluate websites and online
resources before recommending them for student use.

This resource is available on the Manitoba Education, Citizenship and Youth
website at <www.edu.gov.mb.ca/k12/learnres/bibliographies.html>.

A C K N O W L E D G E M E N T S

Manitoba Education, Citizenship and Youth acknowledges the individuals involved in the review and selection of learning resources to support provincial curriculum implementation. Appreciation is extended also to school divisions within Manitoba that supported teachers' participation in the review. Finally, publishers, producers, and distributors are thanked for their submission of learning resources for consideration.

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INTRODUCTION

Reference for Selecting Learning Resources

PHYSICS GRADE 11 AND GRADE 12 LEARNING RESOURCES is a reference tool provided by Manitoba Education, Citizenship and Youth to help educators select student and teacher learning resources to support the curriculum. Recommended learning resources may be purchased through the Manitoba Text Book Bureau (MTBB), and many of the titles may be borrowed from the Department's Instructional Resources Unit (Library).

The bibliography is arranged alphabetically by title, followed with indexes. The indexes may include audience, (for example, resource for teachers or resource for students), grade, distributor, category (for example, depth resource), and suggested use.

Learning Resources Reviews

Publishers submit resources for review in response to the Department's request for new learning resources to support provincial curricula. Teachers, nominated by superintendents of school divisions, are selected as teacher-evaluators. Using a collaborative review process, the teacher-evaluators examine the materials according to the resource-selection criteria to make recommendations regarding the suitability of the resources for Manitoba students and teachers.

Resource Selection Criteria

Learning resources are selected based on the basis of their fidelity with the rationale, philosophy, processes, and learning outcomes identified in each curriculum. Four evaluation criteria are used in selecting learning resources:

- **Curriculum Fit/Content/Philosophy:** the degree to which the content and processes of the resource align with the curriculum, thus providing support for curriculum implementation.
- **Instructional Design:** the degree to which the resource provides for multiple approaches to learning, has a wide range of use, is current, and reflects current pedagogical theory and practice.
- **Social Considerations:** the degree to which the resource is free of bias and stereotyping. The resource is examined for Canadian content, the use of culturally diverse examples, and accurate portrayal of First Nations, Inuit, and Métis peoples. Cautionary notes are added to alert teachers to potentially sensitive curriculum-fit issues or potential community concerns related to the resource.
- **Technical Design:** the degree to which the resource is visually appealing and has a logical and consistent form.

When selecting learning and teaching resources, teachers should consider how the resources meet the learning requirements of students, the needs and interests of the student population, and local decisions related to the delivery of potentially sensitive content.

Terms and Definitions

The following terms and definitions are used to describe the learning resources:

- **Breadth:** identifies learning resources that address a wide range of student learning outcomes for a particular grade.
- **Depth:** identifies learning resources that provide effective learning experiences in greater detail for a narrower grouping of student learning outcomes.
- **Breadth and Depth:** identifies comprehensive learning resources that provide both breadth and depth dimensions for an extensive grouping of student learning outcomes.
- **Teacher Reference:** identifies resources that assist teachers in implementing the curriculum, including background information for teacher use; may identify teaching suggestions and learning activities.
- **Teacher Guide:** identifies a separate guide for teachers or a teacher's edition of a **Student Text**.

Purchase of Learning Resources

The learning resources described in the bibliography are available for purchase through the *Manitoba Text Book Bureau Catalogue of Learning Resources*. For information or assistance regarding the purchase of learning resources, contact:

The Manitoba Text Book Bureau (MTBB)

Box 910

Souris, MB R0K 2C0

Toll free: 866-771-6822 (Manitoba and Saskatchewan)

Telephone: 204-483-5040

Fax: 204-483-5041

Email: mtbb@gov.mb.ca

Online catalogue: <<http://www.mtbb.mb.ca>>

Loans and Bookings of Learning Resources

Most of the learning resources listed in the bibliography are available to Manitoba educators from the Instructional Resources Unit (IRU) Library, Manitoba Education, Citizenship and Youth.

CIRCULATION SERVICES – to register as a patron, renew resources and inquire about loans, contact:

Circulation Desk: Instructional Resources Unit
Manitoba Education, Citizenship and Youth
1181 Portage Avenue
Winnipeg MB R3G 0T3
Telephone: Winnipeg: 204-945-5371
Toll Free outside of Winnipeg – 800-282-8069 ext. 5371
Fax: 204-945-8756
Email: irucirc@gov.mb.ca

REFERENCE AND INFORMATION SERVICES – to request print materials, kits, audio CD's and sound cassettes, and to obtain information on resources, contact:

Reference Services: Instruction Resources Unit – Address Above
Telephone: Winnipeg: 204-945-7830
Toll Free: 800-282-8069 ext. 7830
Fax: 204-945-8756
Email: iruref@gov.mb.ca

MEDIA BOOKING SERVICES – to request VHS, DVDs and CD-ROMs, contact:

Media Booking: Instructional Resources Unit – Address Above
Telephone: Winnipeg: 204-945-7849
Toll Free outside Winnipeg – 800-592-7330
Fax: 204-945-8756
Email: irucirc@gov.mb.ca

FOR FURTHER INFORMATION ON THE IRU'S RESOURCES AND SERVICES:

Visit the online catalogue at: <http://libcat.merlin.mb.ca>
Visit the IRU web site at: <http://libinfo.merlin.mb.ca>



TITLES & DESCRIPTIONS

Conceptual Physics: The High School Physics Program

Publisher : Prentice Hall Inc.

Subject/Grade

	K	1	2	3	4	5	6	7	8	9	10	11	12
Physics												✓	

The focus of this resource is on conceptual understanding of physics principles. Although it supports the philosophy of the Manitoba curriculum, it does not directly address certain Specific Learning Outcomes that require extensive mathematical treatment. For instance, problem solving is approached through a "physics-first/math-second" design. It promotes group interaction and communication, active learning, and student creativity, yet also allows for independent work and learning. Concepts are clearly introduced and developed, and allow for a variety of learning styles. Assessment strategies are developmentally appropriate.

The text uses humour to engage students in the conceptual understanding of physics, including cartoons and various other graphics to stimulate learning. The text is well bound, user-friendly, and should maintain the interest of students. There are also computerized test banks on CD-ROM, a teacher's edition of the text, a lab manual, a package of overhead transparencies, challenging "Next-Time questions," a core resources kit, and a lab manual for extra enrichment.

Comment: The resource also includes an interactive website that is directly linked to the units and chapters of the text and contains java applets of physics demonstrations, tutorials, and supplemental resources. The ThinkQuest Materials database on the website includes student-generated materials that may not be authoritative. Teachers should review materials before using them in the classroom.

Note: Because this resource is a U.S. publication, there is no Canadian content and American spelling is used.

Comment: The mathematical component of the Manitoba physics curriculum, especially at the Grade 12 level, is not sufficiently addressed. Teachers will need to use supplemental resources from the Core Resources package (e.g., the *Problem-Solving Exercises in Physics* workbook and the lab manual), as well as from the Manitoba Physics *Foundation for Implementation* documents, in order to meet curricular expectations.

Conceptual Physics: The High School Physics Program (Student Book)

Author(s): Hewitt, Paul G

Audience: Student

Edition:

Category:

Year: 2002

Suggested Use(s):

Pagination: 723 p

ISBN: 0-13-054254-7

Format: Print

Publisher: Prentice Hall Inc.

Date Recommended: February 17, 2003

Distributor: Pearson Education
Canada

This textbook includes a general overview of the study of physics, with units on Mechanics; Properties of Matter; Heat; Sound and Light; Electricity and Magnetism; and Atomic and Nuclear Physics. Appendices include Units of Measurement; Working with Units; Graphing; Vector Applications; Exponential Growth and Doubling Time; and Problem-Solving Practice.

This textbook is written primarily to capture the interest of all students, including those who will not necessarily be choosing physics as a career. The examples include real-life situations, and many of the activities are interesting and engaging. The resource also provides many possibilities for differentiated instruction. The material is often presented in a variety of modes, with an emphasis on graphic over mathematical presentation. The resource provides many opportunities for the student to do hands-on learning, often with no expensive equipment required. Special-feature sections add a valuable dimension to the resource by addressing such interests as links to technology, careers, sports, and our society.

Conceptual Physics: The High School Physics Program Core Resources (Kit)

Author(s):	Robinson, Paul	Audience:	Teacher
Edition:		Category:	
Year:	2002	Suggested Use(s):	
Pagination:	unp.		
ISBN:			
Format:	Kit		
Publisher:	Prentice Hall Inc.	Date Recommended:	February 17, 2003
Distributor:	Pearson Education Canada		

This in-depth resource package includes laboratory manual, Probeware Lab Manual, Concept-Development Practice Book (student worksheets to develop concepts), Problem Solving exercises, Next-Time Questions that encourage students to apply what they learned, blackline master tests, and a website link providing updated resources.

Conceptual Physics: The High School Physics Program Laboratory Manual

Author(s):	Robinson, Paul	Audience:	Teacher
Edition:		Category:	
Year:	2002	Suggested Use(s):	
Pagination:	322 p		
ISBN:	0-13-054257-1		
Format:	Print		
Publisher:	Prentice Hall Inc.	Date Recommended:	February 17, 2003
Distributor:	Pearson Education Canada		

This manual is a collection of 99 labs that can be used to develop learning of many of the curricular outcomes. Clearly written procedures are easy for students to understand and lead to conceptual development.

Conceptual Physics: The High School Physics Program Overhead Transparencies with Teaching Guide

Author(s):	Hewitt, Paul G	Audience:	Teacher
Edition:		Category:	
Year:	2002	Suggested Use(s):	
Pagination:	151 p		
ISBN:	0-13-054273-3		
Format:	Print		
Publisher:	Prentice Hall Inc.	Date Recommended:	February 17, 2003
Distributor:	Pearson Education Canada		

This comprehensive transparency package contains 100 clear and colourful transparencies that correspond to sections in the student text. Accompanying each transparency are instructional strategy and questions/answers to challenge the student's understanding.

Conceptual Physics: The High School Physics Program Teacher's Edition

Author(s):	Hewitt, Paul G	Audience:	Teacher
Edition:		Category:	
Year:	2002	Suggested Use(s):	
Pagination:	723 p		
ISBN:	0-13-054256-3		
Format:	Print		
Publisher:	Prentice Hall Inc.	Date Recommended:	February 17, 2003
Distributor:	Pearson Education Canada		

The teacher text corresponds page-by-page with the student text. It contains the chapter objectives, teaching tips, teacher demonstrations, common misconceptions, frequent questions to check conceptual understanding, and solutions for the review questions at the end of each topic. It also includes sample problems with step-by-step solutions to accompany the problem-solving practice section at the back of the book. One of the unique features of this teacher's textbook is the program-planning guide that charts when to use the teacher resources.

Conceptual Physics: The High School Physics Program Test Bank with TestWorks CD-ROM

Author(s):		Audience:	Teacher
Edition:		Category:	
Year:	2002	Suggested Use(s):	
Pagination:	367		
ISBN:	0-13-054272-5		
Format:	Print		
Publisher:	Prentice Hall Inc.	Date Recommended:	February 17, 2003
Distributor:	Pearson Education Canada		

This newsprint manual is composed of tests that correlate with the student text. The tests include multiple choice, true-or-false questions, essay questions, and problem solving. The CD-ROM gives teachers the opportunity to rearrange the questions to correspond to the Manitoba curriculum.

System Requirements:

CD-ROM requires standard Windows/Macintosh computer with 486 MHz or better processor, CD-ROM drive.

Glencoe Physics: Principles and Problems

Publisher : McGraw-Hill Ryerson Limited

Subject/Grade

	K	1	2	3	4	5	6	7	8	9	10	11	12
Physics												✓	✓

Note: This new edition replaces the previous edition of *Glencoe Physics: Principles and Problems* (© 2002). As the previous edition is still a Manitoba Recommended resource schools may continue to use it.

Glencoe Physics: Principles and Problems (Student Book)

Author(s): Zitzewitz, Paul W., Elliott, Todd George, Haase, David G., Harper, Kathleen A., Herzog, Michael R., Nelson, Jane Bray, Nelson, Jim, Schuler, Charles A., Zorn, Margaret

Audience: Student

Category:

Suggested Use(s):

Edition:

Year: 2005

Pagination: 944 p

ISBN: 0-07-845813-7

Format: Print

Publisher: McGraw-Hill Ryerson Limited

Date Recommended: June 20, 2007

Distributor:

Glencoe Physics: Principles and Problems: Additional Challenge Problems

Author(s):

Edition:

Year: 2005

Pagination: 79 p

Audience: Student

Category:

Suggested Use(s):

ISBN: 0-07-865897-7

Format: Print

Publisher: McGraw-Hill Ryerson
Limited

Date Recommended: June 20, 2007

Distributor:

Glencoe Physics: Principles and Problems: Answer Key Maker: With Solutions Manual

Author(s):

Audience: Teacher

Edition: Version 1.0

Category:

Year: 2005

Suggested Use(s):

Pagination: unp.

ISBN: 0-07-866224-9

Format: CD-ROM

Publisher: McGraw-Hill Ryerson
Limited

Date Recommended: June 20, 2007

Distributor:

System Requirements:

Windows: Intel Pentium processor, Windows 95 (or higher), color monitor (VGA compatible), CD-ROM drive, hard drive with at least 20 MB space available, 32 MB available memory (12 MB free)

Macintosh: PowerPC processor, System 8.1 (or higher), color monitor (VGA compatible), CD-ROM drive, hard drive with at least 32 MB space available, 32 MB available memory (12 MB free)

Glencoe Physics: Principles and Problems: ExamView Pro Testmaker CD-ROM

Author(s):

Audience: Teacher

Edition:

Category:

Year: 2005

Suggested Use(s):

Pagination: unp.

ISBN: 0-07-866226-5

Format: CD-ROM

Publisher: McGraw-Hill Ryerson
Limited

Date Recommended: June 20, 2007

Distributor:

System Requirements:

Windows: Intel Pentium processor, Windows 98, Me, 2000, XP (or a more recent version), color monitor (VGA compatible), CD-ROM drive, hard drive with at least 10 MB space available, 16 MB available memory (32 MB memory recommended), an Internet connection to access the Internet test-hosting features

Macintosh: PowerPC processor, System 8.6, 9.2, or OS X (10.2 or higher), color monitor (VGA compatible), CD-ROM drive, hard drive with at least 20 MB space available, 16 MB available memory (32 MB memory recommended), an Internet connection to access the Internet test-hosting features

Glencoe Physics: Principles and Problems: Forensics Laboratory Manual (Student Edition)

Author(s):		Audience:	Student
Edition:		Category:	
Year:	2005	Suggested Use(s):	
Pagination:	40 p		
ISBN:	0-07-866559-0		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

Glencoe Physics: Principles and Problems: Forensics Laboratory Manual: Teacher Edition

Author(s):		Audience:	Teacher
Edition:		Category:	
Year:	2005	Suggested Use(s):	
Pagination:	unp.		
ISBN:	0-07-866560-4		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

Glencoe Physics: Principles and Problems: Interactive Chalkboard

Author(s):
Edition:
Year: 2005
Pagination: 2 CDs
ISBN: 0-07-866225-7
Format: CD-ROM

Audience: Teacher
Category:
Suggested Use(s):

Publisher: McGraw-Hill Ryerson Limited

Date Recommended: June 20, 2007

Distributor:

System Requirements:

Windows: IBM PC computer, Pentium 90 MHz microprocessor, 4X CD-ROM, Windows 95 (or later), 16 MB memory, color monitor with high color (800x600 or higher) resolution, video card (1 MB memory or better), hard drive (20 MB free), 28.8 modem

Macintosh: PowerPC processor-based, MAC OS-compatible system, 64 MB of RAM with Virtual Memory turned on, CD-ROM drive, Apple Mac OS System 8.1 or later, 16 MB memory, monitor or display supporting thousands of colors, with 800x600 or higher resolution, 28.8 modem.

Glencoe Physics: Principles and Problems: Laboratory Manual (Student Edition)

Author(s):
Edition:
Year: 2005
Pagination: 160 p
ISBN: 0-07-865909-4
Format: Print

Audience: Student
Category:
Suggested Use(s):

Publisher: McGraw-Hill Ryerson Limited

Date Recommended: June 20, 2007

Distributor:

Glencoe Physics: Principles and Problems: Laboratory Manual: Teacher Edition

Author(s):		Audience:	Teacher
Edition:		Category:	
Year:	2005	Suggested Use(s):	
Pagination:	unp.		
ISBN:	0-07-865890-X		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

Glencoe Physics: Principles and Problems: Pre-AP/Critical Thinking Problems

Author(s):		Audience:	Student
Edition:		Category:	
Year:	2005	Suggested Use(s):	
Pagination:	unp.		
ISBN:	0-07-865895-0		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

Glencoe Physics: Principles and Problems: Probeware Laboratory Manual (Student Edition)

Author(s):		Audience:	Student
Edition:		Category:	
Year:	2005	Suggested Use(s):	
Pagination:	47 p		
ISBN:	0-07-865891-8		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

Glencoe Physics: Principles and Problems: Probeware Laboratory Manual: Teacher Edition

Author(s):		Audience:	Teacher
Edition:		Category:	
Year:	2005	Suggested Use(s):	
Pagination:	unp.		
ISBN:	0-07-865892-6		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

Glencoe Physics: Principles and Problems: Solutions Manual

Author(s):		Audience:	Teacher
Edition:		Category:	
Year:	2005	Suggested Use(s):	
Pagination:	680 p		
ISBN:	0-07-865893-4		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

Glencoe Physics: Principles and Problems: StudentWorks Plus: All-In-One Interactive Student Edition and Student Resources

Author(s):		Audience:	Student
Edition:	Version 1.2	Category:	
Year:	2005	Suggested Use(s):	
Pagination:	unp.		
ISBN:	0-07-866227-3		
Format:	CD-ROM		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

System Requirements:

Windows: Intel Pentium processor, Windows 95 (or higher), 16 MB RAM, 12 MB available hard drive space, 8x CD-ROM drive, Acrobat Reader 5.x (included on CD), PostScript printer (optional)

Macintosh: PowerPC processor, System 8.6 (or higher, including OS X), 16 MB RAM, 15 MB available hard drive space, 8x CD-ROM drive, Acrobat Reader 5.x (included on CD), PostScript printer (optional)

Glencoe Physics: Principles and Problems: Supplemental Problems

Author(s):		Audience:	Student
Edition:		Category:	
Year:	2005	Suggested Use(s):	
Pagination:	221 p		
ISBN:	0-07-865896-9		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

Glencoe Physics: Principles and Problems: Teacher Wraparound Edition

Author(s):	Zitzewitz, Paul W., Elliott, Todd George, Haase, David G., Harper, Kathleen A., Herzog, Michael R., Nelson, Jane Bray, Nelson, Jim, Schuler, Charles A., Zorn, Margaret	Audience:	Teacher
Edition:		Category:	
Year:	2005	Suggested Use(s):	
Pagination:	944 p		
ISBN:	0-07-845814-5		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 20, 2007
Distributor:			

Glencoe Physics: Principles and Problems: TeacherWorks: All-In-One Planner and Resource Center

Author(s): **Audience:** Teacher
Edition: Version 1.5.1 **Category:**
Year: 2005 **Suggested Use(s):**
Pagination: unp.
ISBN: 0-07-866232-X
Format: CD-ROM

Publisher: McGraw-Hill Ryerson **Date Recommended:** June 20, 2007
Limited

Distributor:

System Requirements:

Windows: Windows 98/ME/NT/2000XP, Intel Pentium processor (166 MHz or greater), 64 MB RAM, 60 MB available hard-disk space, Adobe Acrobat Reader 5.1 or Acrobat Reader 6.0.1, Internet Explorer 5.0.1 or higher, Netscape Navigator 4.77, 6.1 or higher, PostScript printer (optional), 8x CD-ROM drive

Macintosh: PowerPC processor (120 MHz or greater), Mac OS 9.1, 9.2, 9.2.2 or Mac OS X (10.1.x, 10.2.x, or 10.3.x), 64 MB RAM, 30 MB available hard-disk space, Adobe Acrobat Reader 5.1 or Acrobat Reader 6.0.1, Internet Explorer 5.0.1 or higher, Netscape Navigator 4.77, 6.1 or higher, PostScript printer (optional), 8x CD-ROM drive

Glencoe Physics: Principles and Problems: Teaching Transparencies

Author(s): **Audience:** Teacher
Edition: **Category:**
Year: 2005 **Suggested Use(s):**
Pagination: unp.
ISBN: 0-07-865908-6
Format: Print

Publisher: McGraw-Hill Ryerson **Date Recommended:** June 20, 2007
Limited

Distributor:

McGraw-Hill Ryerson Physics (Grade 11 and 12 combined), Nova Scotia Edition

Publisher : McGraw-Hill Ryerson Limited

Subject/Grade

	K	1	2	3	4	5	6	7	8	9	10	11	12
Physics												✓	✓

This series consists of a student text with e-book and teacher resource CD-ROM. It is congruent with the Manitoba Specific Learning Outcomes for most of the Grade 11/Grade 12 Manitoba Physics curriculum. As this is a Canadian resource, a number of the problems are contextualized around a Canadian theme. It is also consistent with the scope, sequence, and focus of the Common Framework of Science Learning Outcomes K to 12 (otherwise known as the Pan-Canadian Science Framework). The mathematical treatment is at an appropriate level for Grade 11 and Grade 12.

McGraw-Hill Ryerson Physics (Grade 11 and 12 combined) (includes a Student E-Book CD-ROM)

Author(s):		Audience:	Student
Edition:	Nova Scotia Edition	Category:	
Year:	2003	Suggested Use(s):	
Pagination:	993 p		
ISBN:	0-07-092280-2		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 02, 2003
Distributor:	McGraw-Hill Ryerson Limited		

The textbook is divided into eight units: Kinematics; Dynamics; Momentum and Energy; Waves; Force, Motion, Work, and Energy; Electrical, Gravitational, and Magnetic Fields; Waves and Modern Physics; and Nuclear Physics. The textbook also includes a special skill section (including error analysis, significant digits, graph analysis, mathematical modelling, and a math toolbox), various appendices, answers to practice problems and chapter and unit review problems, glossary, and index.

The introduction of physics concepts is based on students' prior experiences and are subsequently addressed with both conceptual and mathematical approaches. A lot of hands-on activities are suggested to enhance the students' learning. Concepts are represented in multiple modes: pictorial, verbal, symbolic, and graphical. Many problems engage critical thinking skills. The text also

incorporates various sports connections which help the students to see applications of physics in the everyday world.

Comment: The use of the word "conceptual" in reference to mathematical problem solving is not congruent with how it is used in the Manitoba curriculum.

The text includes a significant amount of Canadian content, and it also encourages students to consider careers in physics-related fields. It provides interdisciplinary links to other subjects, including biology, chemistry, earth and space science, and technology. The history of science is incorporated in the text margins with short, informative, history links. The text makes good use of layout and colour to clearly present the main ideas and concepts.

The text includes an e-book for portability and suggested unit projects. These unit projects offer extensive possibilities for students to show their creativity and conceptual understanding of physics, and develop their communication skills and research skills in physics. The student is required to apply physics concepts to everyday life through these projects.

The book and software conveniently incorporate lab activities and Probeware lab web links, which provide research possibilities for the student.

Comment: This resource supports most of the Specific Learning Outcomes (SLOs) in the Manitoba Grade 11 and Grade 12 physics curriculum. Teachers will, however, require additional resources to support the Grade 11 SLOs in Waves, Fields, and the historical context of the Nature of Light, and the Grade 12 SLOs in Fields and Electric Circuits.

McGraw-Hill Ryerson Physics (Grade 11 and 12 combined): Teacher's Resource CD-ROM

Author(s):		Audience:	Teacher
Edition:	Nova Scotia Edition	Category:	
Year:	2003	Suggested Use(s):	
Pagination:	unp.		
ISBN:	0-07-092279-9		
Format:	CD-ROM		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	June 02, 2003
Distributor:	McGraw-Hill Ryerson Limited		

The electronic Teacher's Resource CD-ROM features extensive support material, such as planning charts, physics background information, teaching strategies, blackline masters for each chapter, assessment rubrics, and chapter-by-chapter answers to questions. It also contains a modifiable lab and problems manual and an extensive solutions manual for all problems.

This resource differs from traditional resources/texts in that it treats electrical, gravitational, and magnetic fields as one unit.

Physics: Concepts and Connections (Combined Edition), Newfoundland Edition

Publisher : Irwin Publishing Ltd.

Subject/Grade

	K	1	2	3	4	5	6	7	8	9	10	11	12
Physics												✓	✓

This series is congruent with the Manitoba Specific Learning Outcomes for all of the topics in the Grade 11/Grade 12 Manitoba physics curriculum, except for the historical context of the Grade 11 Nature of Light topic. The mathematical treatment is at an appropriate level for Grade 11 and Grade 12. As this is a Canadian resource, a number of the problems are contextualized around a Canadian theme. It is also consistent with the scope, sequence, and focus of the *Common Framework of Science Learning Outcomes K to 12* (otherwise known as the *Pan-Canadian Science Framework*). For instance, the Science-Technology-Society-Environment (STSE) foundation is well addressed by end-of chapter activities designed to appeal to students' interests.

Physics: Concepts and Connections Combined Edition (Student Book)

Author(s): Van Bemmell, Henri M
Edition: Newfoundland Edition
Year: 2001
Pagination: 831 p
ISBN: 0-7725-2955-8
Format: Print

Audience: Student
Category:
Suggested Use(s):

Publisher: Irwin Publishing Ltd.
Distributor: Nelson

Date Recommended: June 02, 2003

The textbook is divided into six sections: Kinematics; Dynamics; Work, Energy, and Power; Waves, Light, and Sound; Electric, Magnetic, and Gravitational Fields; and Matter – Energy Interface. The textbook also includes a glossary, an index, and useful and extensive appendices on safety, writing lab reports, measurement uncertainty, proportioning techniques, regression, and mathematical techniques.

The book is well organized and user friendly, with clear and effective text, diagrams, and photos throughout (e.g., the graphs and graphics in the linear motion section and the free-body diagrams in dynamics). Problem-solving techniques are clearly and extensively treated through illustrations, concept maps, and full sample solutions. Final answers to problems are available to students in the appendices. Activities and laboratories are included at the end of chapters.

Comments: Teachers will need to consult the Manitoba Physics *Foundation for Implementation* documents to fully support the following content areas:

- early theories of light (Newton’s corpuscular model versus the wave model) and predictions of these models (Grade 11 – Nature of Light)
- two-dimensional waves, in-depth treatment of wavefronts with respect to the law of refraction and Snell’s Law (Grade 11 – Waves)
- terminal voltage and the internal resistance of electrochemical cells (Grade 12 – Electric Circuits)
- production of electromagnetic waves (Grade 12 – Fields)

Physics: Concepts and Connections Combined Edition: Overhead Transparencies

Author(s):	Van Bemmell, Henri M	Audience:	Teacher
Edition:	Newfoundland Edition	Category:	
Year:	2003	Suggested Use(s):	
Pagination:	unp.		
ISBN:	0-17-626093-5		
Format:	Transparencies		
Publisher:	Irwin Publishing Ltd.	Date Recommended:	June 02, 2003
Distributor:	Nelson		

The overhead transparencies package includes diagrams, graphs, and solutions from the textbook.

Physics: Concepts and Connections Combined Edition: Teacher's Resource Guide (with CD-ROM)

Author(s):	Van Bemmell, Henri M	Audience:	Teacher
Edition:	Newfoundland Edition	Category:	
Year:	2003	Suggested Use(s):	
Pagination:	609 p		
ISBN:	0-7725-2596-6		
Format:	Print		
Publisher:	Irwin Publishing Ltd.	Date Recommended:	June 02, 2003
Distributor:	Nelson		

This resource is clearly presented in a tabbed, three-ring binder and includes detailed lesson plans that tightly integrate the components of the *Concepts and Connections* series (textbook, overhead transparencies, blackline masters, and labs) for each day of a typical semester. It also includes limited lab activities and demonstrations, assessment tools and strategies to ensure that learning outcomes will be met, a materials list, case studies, and blackline masters. It does not include test questions or test banks. The *Teacher's Resource Guide* for this series is a particularly important resource because it includes a CD-ROM that contains PDF files of the solutions to the "Conceptual Questions" and "Problems" at the end of each chapter.

Comment: No hard copy of the 215-page solutions manual is provided, but it is easy to navigate through the PDF files.

System Requirements

CD-ROM requires standard Windows/Macintosh computer with 486 MHz or better processor, CD-ROM drive, and *Adobe Acrobat Reader*.

A U D I E N C E

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Conceptual Physics: The High School Physics Program (Student Book)

Glencoe Physics: Principles and Problems

Glencoe Physics: Principles and Problems (Student Book)

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GRADE

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