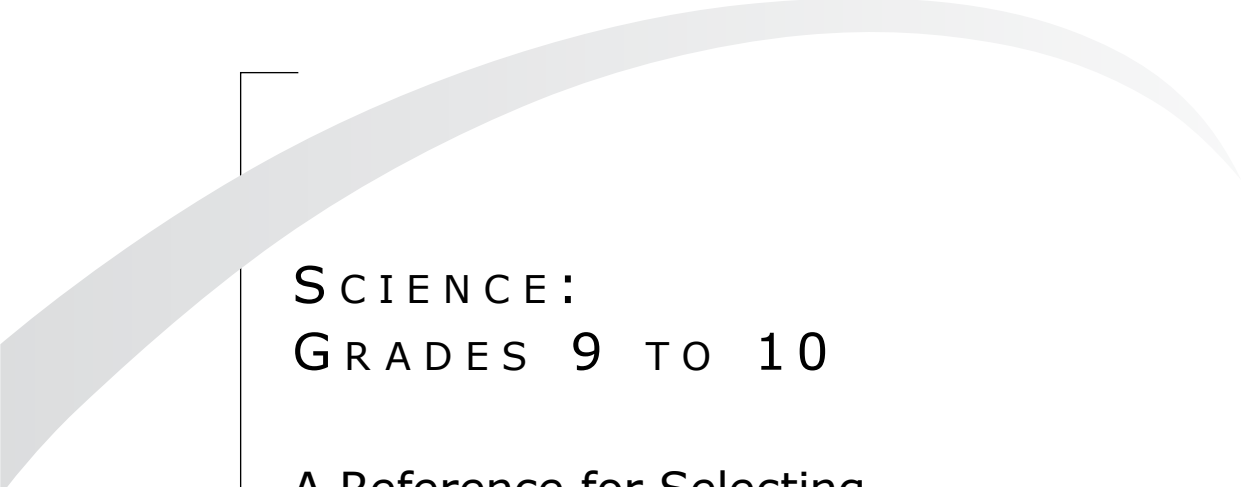




Science: Grades 9 to 10

A Reference for Selecting
Learning Resources



SCIENCE:
GRADES 9 TO 10

A Reference for Selecting
Learning Resources

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Winnipeg, Manitoba, Canada

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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 and Training website at www.edu.gov.mb.ca/k12/learnres/shortlists.html.

Available in alternate formats upon request.

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INTRODUCTION

Reference for Selecting Learning Resources

Science: Grades 9 to 10: A Reference for Selecting Learning Resources is a reference tool provided by Manitoba Education and Training to help educators select student and teacher learning resources to support the curriculum.

Learning Resources Reviews

Publishers submitted resources for review to the Learning Resources Unit of Instruction, Curriculum and Assessment Branch 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 perspectives 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 edition of a student text.

Purchase of Learning Resources

The learning resources described in the bibliography may be available for purchase at www.mtbb.mb.ca/catalogue/en.

For information or assistance regarding the purchase of learning resources, contact:

Manitoba Learning Resources Centre (LRC)
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: www.mtbb.mb.ca/catalogue/en

TITLES AND DESCRIPTIONS

Discovering Science

Publisher: McGraw-Hill Ryerson

Subject/Grade													
	K	1	2	3	4	5	6	7	8	9	10	11	12
Science										✓			
English Language Arts										✓			
Health Education										✓			
Mathematics										✓			

This is a made-for-Canada textbook and is congruent with all of the Manitoba curriculum clusters. Almost all of the labs you would need to assign are incorporated into this text. The review sections at the end of each chapter are extensive and cover many levels of questioning. The teacher resource provides thorough background and guidance on the preparation for lessons and labs, and comes with a digital exam bank on CD. The test bank includes French-language questions. The exam builder is easy to use and quickly generates tests using a variety of different assessment instruments.

Discovering Science 9 (Student Text)

Author(s):	Attwood, J. Randy, Fatkin, Glen, Lacy, Donald, Karner, Julie, Martha, Josef, Milross, James, Montgomery, Adrienne, Naso, Karen, Sandner, Lionel, Searle, Sandy, Ballou, Briar, Charleson, Karen, Marko, Natasha, Zike, Dinah	Audience:	Student
Edition:			
Year:	2009		
Pagination:	523 p		
ISBN:	978-0-07-072363-4		
Format:	Print		
Publisher:	McGraw-Hill Ryerson	Date Recommended:	April 13, 2012
Distributor:	Nelson		

Discovering Science 9: Teacher's Resource (includes CD-ROM)

Author(s):	Attwood, Randy, Barrett, Shirley, Karner, Julie, Zike, Dinah	Audience:	Teacher
Edition:			
Year:	2009		
Pagination:	unp.		
ISBN:	978-0-07-072412-9		
Format:	Print		
Publisher:	McGraw-Hill Ryerson	Date Recommended:	April 13, 2012
Distributor:	Nelson		

Everything I Need to Know about Electricity . . . Well Almost

Publisher: Gordon Klimenko

Subject/Grade	K	1	2	3	4	5	6	7	8	9	10	11	12
Science							✓	✓	✓	✓	✓		

Everything I Need To Know About Electricity...Well Almost, was written by Gord Klimenko, a Manitoba author and mechanical/electrical/computer engineer, and Justin Currie, a Manitoba digital and print illustrator. The text and illustrations explain in five short chapters what electricity is, and how it is used to create digital information.

This laminated, softcover, highly visual book is a good resource for a teacher who wants to gain deeper understanding (beyond the curriculum) on topics including atomic theory, electricity, electromagnetism, and computer (digital) circuits, at an introductory to intermediate level.

For students who want to be challenged with deeper content exploration, this graphic-style book could also be used as an extension/enrichment resource.

Much of the text can be read at a middle year's level, while highly interesting illustrations and concrete examples show student concepts such as voltage and ASCII binary code. The illustrations also depict other models such as using cloud shapes and nesting dolls to explain energy bands; and a super soaker, water hose and taps to help explain voltage. Other concepts animated include a one-bit memory cell and a transistor on a silicon chip for video game use. The book also illustrates and explains pixels and the speed at which digital information can travel.

By providing an engaging introduction to advanced topics not usually encountered at Grade 6–10 in an format accessible to more advanced students, this book could also be used to encourage more interest in science and engineering.

Everything I Need to Know about Electricity . . . Well Almost: An Introduction to the Science and Engineering of Electricity in the Digital Information Age

Author(s): Gordon Klimenko

Edition:

Year: 2018

Pagination: 70 p

ISBN: 978-0-9876885-0-7

Format: Print

Publisher: Gordon Klimenko

Distributor: Friesen Press

Audience: Teacher

Date Recommended: March 08, 2018

Expert Space: Content & Tools for the 21st Century Learners

Publisher: Scholastic Canada Ltd.

Subject/Grade	K	1	2	3	4	5	6	7	8	9	10	11	12
Science					✓	✓	✓	✓	✓	✓	✓		
English Language Arts					✓	✓	✓	✓	✓	✓	✓		
Music					✓	✓	✓	✓	✓	✓	✓		
Social Studies					✓	✓	✓	✓	✓	✓	✓		
Visual Arts					✓	✓	✓	✓	✓	✓	✓		

This supplementary, web-based resource is about a space within the Internet where you can find science information to enlighten and engage Grades 4 to 10 students. Topics covered include physical sciences, the human body, technology, earth sciences, life sciences, etc. One strength is the quality of the videos and articles embedded in its multi-media sections. It is not noticeably graded, yet it matches grade level clusters and thematic topics within the science and social studies domains. There are other cross-curricular connections with the English language arts, visual arts, and music domains. Designed by Grolier, it provides teachers with lesson plans and projects as well as collections of resources on topics such as extreme weather and outer space to pique student curiosity.

Expert Space: Content & Tools for the 21st Century Learners

Author(s):		Audience:	Student, Teacher
Edition:	Canadian Edition		
Year:	2009		
Pagination:	unp.		
ISBN:			
Format:	Web-Based Resource		
Publisher:	Scholastic Canada Ltd.	Date Recommended:	April 13, 2012
Distributor:			

Manitoba Science 10

Publisher: McGraw-Hill Ryerson

Subject/Grade	K	1	2	3	4	5	6	7	8	9	10	11	12
Science											✓		

The student textbook is aligned with the scope and sequence of Manitoba Science 10 specific learning outcomes. This resource also provides additional supports for the following: 1) step-by-step problem-solving techniques; 2) Science, Technology, Society and Environment (STSE) connections and applications; 3) “chapter launch” activation activities to engage students’ interests; 4) lab activities and investigation activities; 5) career connections, and; 6) Manitoba contexts throughout. The design and layout of the student edition is easy to navigate with repeating features in each unit and complementary features in the appendices related to safety in the science classroom, literacy skills for science content-area reading, and scientific inquiry skills. Each unit features a “preparation” section at the beginning, which identifies prior learning for students and access and review of prior knowledge that can be applied to their subsequent learning experiences.

The digital teacher resource is complementary to the student edition of the text and can be used as a planning guide. It features background knowledge for each topic, suggested responses to student textbook questions, activity guides with troubleshooting and helpful hints, and blackline masters. The teacher resource also includes a pdf version of the student text in an interactive format. The ExamView Assessment Suite computerized assessment bank allows teachers to select questions from a question bank for each chapter or custom-design by adding their own. Teacher feedback or additional instructions may be added. Teachers may also assemble annotated activities, labs, videos, graphics, and animation into a coherent lesson plan and save these to their own drive or desktop. The teacher resource section assembles all text and visual materials by chapter. Copies of the BLMs are in a useful MS Word format for lab activities. These greatly enhance the textbook in the Manitoba Skills and Attitudes specific learning outcomes (cluster 0), and in lesson differentiation for varied learning styles. Answer keys for chapter reviews are in pdf format and chapter outlines are provided in a MS PowerPoint format that can be edited. All of these features are useful to the teacher, particularly the modifiable and editable nature of the resource materials, teacher-created assessment questions, and customized assignments.

McGraw-Hill Ryerson Manitoba Science 10

Author(s): Anderson, Michelle, Bocknek, Jonathan, Goodchild, Sara, Hamilton, Katherine, Smith, Trevor, Stewart, Ken, Weber, Christine	Audience: Student
Edition:	
Year: 2014	
Pagination: 434 p	
ISBN: 978-125927541-8	
Format: Print	
Publisher: McGraw-Hill Ryerson Limited	Date Recommended: April 28, 2015
Distributor: Nelson	

McGraw-Hill Ryerson Manitoba Science 10: Computerized Assessment Bank CD-Rom

Author(s): Barbara Mckinley, Ken Stewart, Christine Weber	Audience: Teacher
Edition:	
Year: 2014	
Pagination: unp.	
ISBN: 978-125927545-6	
Format: CD-ROM	
Publisher: McGraw-Hill Ryerson Limited	Date Recommended: April 28, 2015
Distributor: Nelson	

McGraw-Hill Ryerson Manitoba Science 10: CONNECTschool for Teachers (Online)

Author(s):	Audience: Teacher
Edition:	
Year: 2014	
Pagination: unp.	
ISBN: 978-125926991-2	
Format: Access Code	
Publisher: McGraw-Hill Ryerson Limited	Date Recommended: April 28, 2015
Distributor: Nelson	

McGraw-Hill Ryerson Manitoba Science 10: CONNECTschool for Student (Online)

Author(s):		Audience:	Student
Edition:			
Year:	2014		
Pagination:	unp.		
ISBN:	978-125927546-3		
Format:	Access Code		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	April 28, 2015
Distributor:	Nelson		

McGraw-Hill Ryerson Manitoba Science 10: Teacher's Resource

Author(s):	Anderson, Michelle, Bocknek, Jonathan, Goodchild, Sara, Hamilton, Katherine, Smith, Trevor, Stewart, Ken, Weber, Christine	Audience:	Teacher
Edition:			
Year:	2014		
Pagination:	unp.		
ISBN:	978-1-25927544-9		
Format:	Print		
Publisher:	McGraw-Hill Ryerson Limited	Date Recommended:	April 28, 2015
Distributor:	Nelson		

Pearson Science

Publisher: Pearson Canada

Subject/Grade

	K	1	2	3	4	5	6	7	8	9	10	11	12
Science										✓			
English Language Arts										✓			
Health Education										✓			
Mathematics										✓			

Pearson Science 9 provides strong correlations to the Manitoba science curriculum and extensive inclusion of Indigenous perspectives. The electronic version of the teacher resource guide contains a pdf of the print, as well as word files of the blackline masters, activities, quizzes, tests, and assessment rubrics. The teacher can thus edit all these tests and activities. A pdf of the student text is also included.

Pearson Science 9 (Student Edition)

Author(s): Hounjet, Camille, Kvamme, Bob, Mohr, Penny, Phillipchuk, Kelly, View, Ted	Audience: Student
Edition: Manitoba Edition	
Year: 2011	
Pagination: 487 p	
ISBN: 978-0-13-312610-5	
Format: Print	
Publisher: Pearson Canada	Date Recommended: April 13, 2012
Distributor: Pearson Canada Inc.	

Pearson Science 9: Teacher's Resource Kit (includes CD-ROM)

Author(s):	Hounjet, Camille, Kvamme, Bob, Mohr, Penny, Phillipchuk, Kelly, View, Ted, Pyne-Rudzik, Eileen	Audience:	Teacher
Edition:	Manitoba Edition		
Year:	2012		
Pagination:	unp.		
ISBN:	978-0-13-312727-0		
Format:	Print		
Publisher:	Pearson Canada	Date Recommended:	April 13, 2012
Distributor:	Pearson Canada Inc.		

AUDIENCE

Student

Discovering Science

Discovering Science 9 (Student Text)

Expert Space: Content & Tools for 21st Century Learners

Manitoba Science 10

McGraw-Hill Ryerson Manitoba Science 10

McGraw-Hill Ryerson Manitoba Science 10: CONNECTschool Student (Online)

Pearson Science

Pearson Science 9 (Student Edition)

Teacher

Discovering Science

Discovering Science 9: Teacher's Resource (includes CD-ROM)

Expert Space: Content & Tools for 21st Century Learners

Manitoba Science 10

McGraw-Hill Ryerson Manitoba Science 10: Computerized Assessment Bank CD-ROM

McGraw-Hill Ryerson Manitoba Science 10: CONNECTschool for Teachers (Online)

McGraw-Hill Ryerson Manitoba Science 10: Teacher's Resource

Pearson Science

Pearson Science 9: Teacher's Resource Kit (includes CD-ROM)

GRADES

Grade 9

Discovering Science

Discovering Science 9 (Student Text)

Discovering Science 9: Teacher's Resource (includes CD-ROM)

Expert Space: Content & Tools for 21st Century Learners

Pearson Science

Pearson Science 9 (Student Edition)

Pearson Science 9: Teacher's Resource Kit (includes CD-ROM)

Grade 10

Expert Space: Content & Tools for 21st Century Learners

Manitoba Science 10

McGraw-Hill Ryerson Manitoba Science 10

McGraw-Hill Ryerson Manitoba Science 10: Computerized Assessment Bank CD-ROM

McGraw-Hill Ryerson Manitoba Science 10: CONNECTschool for Teachers (Online)

McGraw-Hill Ryerson Manitoba Science 10: CONNECTschool Student (Online)

McGraw-Hill Ryerson Manitoba Science 10: Teacher's Resource

DISTRIBUTOR DIRECTORY

Manitoba Learning Resources Centre (LRC)
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: www.mtbb.mb.ca/catalogue/en

McGraw-Hill Ryerson Limited
300 Water Street
Whitby, ON L1N 9B6
Phone: (888) 793-7706
Fax: (905) 430-5194
www.nelson.com

Pearson Canada Inc.
195 Harry Walker Parkway
Newmarket, ON L3Y 7B4
Phone: (800) 667-6942
Fax: (416) 447-2551
www.pearsonschoolcanada.ca

Scholastic Canada Ltd.
175 Hillmount Road
Markham, ON L6C 1Z7
Phone: (905) 887-7323
Fax: (905) 887-3643
www.scholastic.ca/



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