



# APPENDIX B

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*Mathematics 8 and 9  
Grade Collections*



**MATHEMATICS 8 AND 9 :  
GRADE COLLECTIONS**

This section begins with an overview of the comprehensive resources for this curriculum, then presents Grade Collection charts for each grade. These charts list both *comprehensive* and *additional* resources for each curriculum organizer for the grade. The charts are followed by an annotated bibliography. Teachers should check with suppliers for complete and up-to-date ordering information. Most suppliers maintain web sites that are easy to access.

The learning resources identified in the Mathematics 8 and 9 Grade Collections have been evaluated through the Western Canadian Protocol Learning Resource Evaluation process and subsequently have been given Provincially recommended status by the Ministry of Education.

**MEDIA ICONS KEY**



*Audio Cassette*



*CD-ROM*



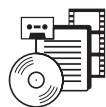
*Film*



*Games/Manipulatives*



*Laserdisc/Videodisc*



*Multimedia*



*Music CD*



*Print Materials*



*Record*



*Slides*



*Software*



*Video*

MATHEMATICS 8 AND 9 GRADE COLLECTIONS  
OVERVIEW OF COMPREHENSIVE RESOURCES

- *Interactions (Level 8)*
- *Interactions (Level 9)*

Problem solving is the central focus of this program and each developmental unit emphasizes a particular problem solving strategy. The resources make connections to other curricular areas and real-life contexts and applications and emphasize the use of technology and mathematical language. Components for each level include student book, teacher's resource book, assessment booklet and blackline masters. The teacher's resource book presents activities and approaches for planning, teaching, extending, enriching and assessing a balanced mathematics program. The assessment booklet includes information on assessing mathematics, planning for assessment and specific activities and strategies for recording and reporting assessment. The blackline masters include project assignments with assessment criteria, analytic and holistic scoring guides, teacher and student checklists and home letters. *Level 8* will need supplementary material on geometrical transformations. In *Level 9* a four-function calculator, rather than a scientific calculator, is used in some software references. Both levels require the use of manipulatives such as algebra tiles and integers disks as well as suitable software.

- *The Learning Equation: Mathematics 8*
- *The Learning Equation: Mathematics 9*

Interactive CD-ROMs for Macintosh or Windows present lessons in the consistent format of introduction, tutorial example, summary of concepts, practice problems, extra practice and a self-check. Students are

able to monitor their own progress through the various components of each lesson, set the sound level to their own liking and control the pace. The program uses many "explorers," which allow students to simulate mathematics concepts. For Grade 8 these involve the properties of numbers using decimal tiles, integer tiles, a spinner simulator for probability and a transformations explorer. Grade 9 involves the solution of linear equations, factoring, solving right triangles, volume and surface area, geometric transformations, the line of best fit and probability. Also included on the CD-ROMs is a glossary that students can access as a pull-down menu. Print support consists of a student refresher and a teacher's manual. The student refresher follows the organization of the CD-ROMs and provides additional examples and answers. The teacher's manual includes installation notes, instructional summaries, prerequisite skills and cross-references to the CD-ROMs.

- *Mathematics 9: A Resource for Teachers*

This resource, developed in BC to support the Mathematics 9 curriculum, provides hands-on, activity-based learning experiences. It is intended to assist teachers in expanding their repertoire of teaching strategies, and, in particular, to help with learning outcomes that address the applied focus, student decision making, critical thinking and problem solving. The book has three major sections that provide an orientation to using the resource, support for making a shift to a more applied approach and examples of real-world problems. The problems are organized as activity-based projects that include predicting satellite collisions, determining the relationship of insulin to diabetes and planning for a teen recreation centre, including drawing a scale map and building a

scale model of this centre. Appendices include additional support material. This resource can be adopted as a complete program, can be used to augment an existing approach or can be used as a springboard for the creation of a unique program based on large-scale problems and projects.

- *MATHPOWER 8, Western Edition*
- *MATHPOWER 9, Western Edition*

This program, comprising a student text, teacher's guide and blackline masters for each grade, supports the learning of mathematics in a variety of ways. Concepts and skills are presented in problem-solving contexts, and questions are designed to help students express their ideas about mathematics orally and in writing. The mathematical processes of communication, connections, estimation and mental mathematics, problem solving, technology and visualization are integrated in examples and activities. Consistent chapter format includes an introductory activity followed by questions and activities that enable students to build, practice, apply and extend learning. Logos indicate estimating, writing, thinking and cooperative group activities. Manipulatives are used and technology suggestions show students how to apply technology, including calculators and computers, to solve problems. The introductory pages of the student resource, which outline the mathematical processes and the NCTM Standards, are an essential part of the resource. The teacher's edition contains teaching suggestions, lesson plans, assessment strategies, a data bank, answers and glossary. It also includes reproducible masters for grid and dot paper, number lines, algebra tiles, tangrams, spinners, geometric shapes and nets. The blackline masters provide extra practice for each teaching lesson in the text.

- *Minds on Math 8, Revised Edition*
- *Minds on Math 9, Revised Edition*

Program, consisting of a student text, teacher's resource book, activity cards and a template and data disk package for each grade level, engages students in meaningful, real-world mathematics. A variety of approaches allow students to learn through manipulatives, individual and cooperative activities, discussion and guided examples. Consistent chapter format begins with activities and exercises that allow students to assess their prior knowledge, followed by concept introduction through discussions, activities, guided examples using manipulatives and instruction. Students are then involved in both independent and small-group explorations of the topic. Finally, students communicate mathematical thoughts and discoveries through discussion and writing. The student book contains answers, a glossary and an index. The teacher's resource book consists of twelve booklets with comprehensive teaching notes, assessment and review exercises and blackline masters. The activity cards offer students the chance to take part in career-based activities and to discover first-hand how professionals use math on a daily basis. The software package includes a variety of databases including box office hits, international prices, mammals of Canada, Olympics, moon and planets, the World Health Organization and Canadian geography. The software package requires either ClarisWorks or Microsoft Works in order to run. Manipulatives such as algebra tiles and suitable software are necessary for using the resource effectively; these are not supplied with the resource. The learning outcomes related to data analysis for Grade 8 need to be supplemented.