

Contents

Time Lines for *Mathematics 10* viii

**An Introduction to *Mathematics 10*
Teacher's Resource ix**

**Characteristics of McGraw-Hill Ryerson's
Mathematics 10 Program x**

Mathematics: Making Links x

Procedural Fluency and Conceptual Understanding xi

Investigate

Link the Ideas

Check Your Understanding

Problem Solving xii

Differentiating Instruction xii

Ten Needs of the Learner

Assessment xv

Assessment *as* Learning xv

Assessment *for* Learning xv

Assessment *of* Learning xvi

Portfolio Assessment

Master 1 Project Rubric

Concrete Materials xvii

Technology xvii

Capitalizing on Diversity and Real Life xviii

**Alternative Learning Environments and
Home Connections xviii**

Cooperative Learning xviii

Types of Groups xx

Mental Mathematics xxi

Estimation xxi

Mental Imagery xxi

Mental Computation xxi

Chapter Correlation

xxiii

Unit 1 Measurement

1

Unit 1 Opener	1
Unit 1 Project Opener	2

Chapter 1 Measurement Systems

3

Opening Matter and Charts	3
Chapter Opener	7
1.1 SI Measurement	9
1.2 Imperial Measurement	16
1.3 Converting Between SI and Imperial Systems	23
Chapter 1 Review	30
Chapter 1 Practice Test.....	32

Chapter 2 Surface Area and Volume

35

Opening Matter and Charts	35
Chapter Opener	39
2.1 Units of Area and Volume	41
2.2 Surface Area	51
2.3 Volume	63
Chapter 2 Review	71
Chapter 2 Practice Test	72

Chapter 3 Right Triangle Trigonometry

75

Opening Matter and Charts	75
Chapter Opener	79
3.1 The Tangent Ratio	81
3.2 The Sine and Cosine Ratios	88
3.3 Solving Right Triangles	94
Chapter 3 Review	100
Chapter 3 Practice Test	101

Unit 1 Project

103

Unit 1 Review and Test

105

Unit 2 Algebra and Number	107
Unit 2 Opener	107
Unit 2 Project Opener	108
Chapter 4 Exponents and Radicals	109
Opening Matter and Charts	109
Chapter Opener	113
4.1 Square Roots and Cube Roots	115
4.2 Integral Exponents	123
4.3 Rational Exponents	134
4.4 Irrational Numbers	141
Chapter 4 Review	151
Chapter 4 Practice Test	152
Chapter 5 Polynomials	155
Opening Matter and Charts	155
Chapter Opener	159
5.1 Multiplying Polynomials	161
5.2 Common Factors	170
5.3 Factoring Trinomials	178
5.4 Factoring Special Trinomials	187
Chapter 5 Review	198
Chapter 5 Practice Test	200
Unit 2 Project	202
Unit 2 Review and Test	204

Unit 3 Relations and Functions	205
Unit 3 Opener	205
Unit 3 Project Opener	206
Chapter 6 Linear Relations	207
Opening Matter and Charts	207
Chapter Opener	211
6.1 Graphs of Relations	213
6.2 Relations	221
6.3 Domain and Range	228
6.4 Functions	235
6.5 Slope	242
Chapter 6 Review	250
Chapter 6 Practice Test	251
Chapter 7 Linear Equations and Graphs	253
Opening Matter and Charts	253
Chapter Opener	257
7.1 Slope-Intercept Form	259
7.2 General Form	268
7.3 Slope-Point Form	276
7.4 Parallel and Perpendicular Lines	282
Chapter 7 Review	288
Chapter 7 Practice Test	290
Unit 3 Project	292
Unit 3 Review and Test	296

Unit 4 Systems of Equations 297

Unit 4 Opener 297

Unit 4 Project Opener 298

Chapter 8 Solving Systems of Linear Equations Graphically 299

Opening Matter and Charts 299

Chapter Opener 303

8.1 Systems of Linear Equations and Graphs 306

8.2 Modelling and Solving Linear Systems 316

8.3 Number of Solutions for Systems of Linear Equations 324

Chapter 8 Review 331

Chapter 8 Practice Test 333

Chapter 9 Solving Systems of Linear Equations Algebraically 335

Opening Matter and Charts 335

Chapter Opener 339

9.1 Solving Systems of Linear Equations by Substitution 341

9.2 Solving Systems of Linear Equations by Elimination 347

9.3 Solving Problems Using Systems of Linear Equations 354

Chapter 9 Review 360

Chapter 9 Practice Test 362

Unit 4 Project 363

Unit 4 Review and Test 365

Blackline Masters

The blackline masters for *Mathematics 10* are available on the *Mathematics 10* Teacher’s Resource CD-ROM.

These include generic masters, chapter-specific masters, and a series of Tech Masters.