

# Contents

<b>McGraw-Hill Ryerson <i>MathLinks 7</i> Program Overview</b> .....	<b>xii</b>
<b>An Introduction to <i>MathLinks 7</i> Teacher’s Resource</b> .....	<b>xiii</b>
<b>Characteristics of McGraw-Hill Ryerson’s <i>MathLinks</i> Program</b> .....	<b>xv</b>
<b>Mathematics: Making Links</b> .....	<b>xv</b>
<b>Procedural Fluency and Conceptual Understanding</b> .....	<b>xvii</b>
<b>Problem Solving</b> .....	<b>xviii</b>
<b>Differentiating Instruction</b> .....	<b>xx</b>
<b>Adaptations</b> .....	<b>xxi</b>
<b>Reaching All Students</b> .....	<b>xxii</b>
<b>Concrete Materials</b> .....	<b>xxiv</b>
<b>Technology</b> .....	<b>xxiv</b>
<b>ASSESSMENT</b> .....	<b>xxv</b>
<b>Assessment <i>as</i> Learning</b> .....	<b>xxvi</b>
<b>Assessment <i>for</i> Learning</b> .....	<b>xxvii</b>
<b>Assessment <i>of</i> Learning</b> .....	<b>xxviii</b>
<b>CAPITALIZING ON DIVERSITY AND REAL LIFE</b> .....	<b>xxx</b>
<b>COOPERATIVE LEARNING</b> .....	<b>xxxii</b>
<b>Types of Groups</b> .....	<b>xxxii</b>
<b>MENTAL MATHEMATICS</b> .....	<b>xxxiv</b>
<b>Estimation</b> .....	<b>xxxiv</b>
<b>Mental Imagery</b> .....	<b>xxxiv</b>
<b>Mental Computation</b> .....	<b>xxxv</b>
<b>TIME LINES FOR <i>MATHLINKS 7</i></b> .....	<b>xxxvii</b>
<b>CURRICULUM CORRELATION</b> .....	<b>xxxviii</b>

<b>Chapter 1 Coordinates and Design</b> .....	<b>Ch 1 tab</b>
Opening Matter and Charts . . . . .	i–v
Chapter Opener . . . . .	2
1.1 The Cartesian Plane . . . . .	4
1.2 Create Designs . . . . .	12
1.3 Transformations . . . . .	18
1.4 Horizontal and Vertical Distances . . . . .	30
Chapter Review . . . . .	36
Practice Test . . . . .	38
Wrap It Up! . . . . .	38a
Math Games: Going Fishing . . . . .	40
Challenge in Real Life: Make an Animation . . . . .	41
<b>Chapter 2 Operations on Decimal Numbers</b> .....	<b>Ch 2 tab</b>
Opening Matter and Charts . . . . .	i–iii
Chapter Opener . . . . .	42
2.1 Add and Subtract Decimal Numbers . . . . .	44
2.2 Multiply Decimal Numbers . . . . .	52
2.3 Divide Decimal Numbers . . . . .	60
2.4 Order of Operations and Decimal Numbers . . . . .	68
Chapter Review . . . . .	74
Practice Test . . . . .	76
Wrap It Up! . . . . .	76a
Math Games: Decimal Delights . . . . .	78
Challenge in Real Life: Rounding Digits and High-Tech Crime . . . . .	79
<b>Chapter 3 Geometry and Measurement</b> .....	<b>Ch 3 tab</b>
Opening Matter and Charts . . . . .	i–v
Chapter Opener . . . . .	80
3.1 Parallel and Perpendicular Line Segments . . . . .	82
3.2 Draw Perpendicular Bisectors . . . . .	89
3.3 Draw Angle Bisectors . . . . .	94
3.4 Area of a Parallelogram . . . . .	100
3.5 Area of a Triangle . . . . .	108
Chapter Review . . . . .	116
Practice Test . . . . .	118
Wrap It Up! . . . . .	118a
Math Games: Amazing Mazes . . . . .	120
Challenge in Real Life: Bank Shots in the Game of Pool . . . . .	121
<b>Chapter 4 Fractions, Decimals, and Percents</b> .....	<b>Ch 4 tab</b>
Opening Matter and Charts . . . . .	i–v
Chapter Opener . . . . .	122
4.1 Connect Fractions, Decimals, and Percents . . . . .	124
4.2 Fractions, Decimals, and Percents . . . . .	132

4.3 Applications of Percents . . . . .	140
Chapter Review . . . . .	146
Practice Test . . . . .	148
Wrap It Up! . . . . .	148a
Math Games: Math’s a Snap . . . . .	150
Challenge in Real Life: Fraction Converter for Everyday Life . . . . .	151
Chapters 1–4 Review . . . . .	152
Task: Create a Logo . . . . .	155

**Chapter 5 Probability . . . . . Ch 5 tab**

Opening Matter and Charts . . . . .	i–iii
Chapter Opener . . . . .	156
5.1 Probability . . . . .	158
5.2 Organize Outcomes . . . . .	165
5.3 Probabilities of Simple Independent Events . . . . .	171
5.4 Applications of Independent Events . . . . .	177
5.5 Conduct Probability Experiments . . . . .	183
Chapter Review . . . . .	190
Practice Test . . . . .	192
Wrap It Up! . . . . .	192a
Math Games: Is It a Match? . . . . .	194
Challenge in Real Life: Crack the Code . . . . .	195

**Chapter 6 Introduction to Fraction Operations . . . . . Ch 6 tab**

Opening Matter and Charts . . . . .	i–v
Chapter Opener . . . . .	196
6.1 Divisibility . . . . .	198
6.2 Add Fractions With Like Denominators . . . . .	210
6.3 Subtract Fractions With Like Denominators . . . . .	217
Chapter Review . . . . .	222
Practice Test . . . . .	224
Wrap It Up! . . . . .	224a
Math Games: It’s Divisible . . . . .	226
Challenge in Real Life: Green Mathematics, Math Mosaics . . . . .	227

**Chapter 7 Add and Subtract Fractions . . . . . Ch 7 tab**

Opening Matter and Charts . . . . .	i–v
Chapter Opener . . . . .	228
7.1 Common Denominators . . . . .	230
7.2 Add and Subtract Fractions With Unlike Denominators . . . . .	237
7.3 Add Mixed Numbers . . . . .	245
7.4 Subtract Mixed Numbers . . . . .	252
Chapter Review . . . . .	260
Practice Test . . . . .	262
Wrap It Up! . . . . .	262a
Math Games: Fraction Race . . . . .	264
Challenge in Real Life: Magazine Design . . . . .	265

<b>Chapter 8 Circles</b> .....	<b>Ch 8 tab</b>
Opening Matter and Charts .....	i–v
Chapter Opener .....	266
8.1 Construct Circles .....	268
8.2 Circumference of a Circle .....	273
8.3 Area of a Circle.....	280
8.4 Interpret Circle Graphs.....	287
8.5 Create Circle Graphs .....	292
Chapter Review.....	298
Practice Test .....	300
Wrap It Up!.....	300a
Math Games: Make Spinner Games.....	302
Challenge in Real Life: Winner’s Circle.....	303
Chapters 5–8 Review .....	304
Task: Is This a Fair Game? .....	307

<b>Chapter 9 Add and Subtract Integers</b> .....	<b>Ch 9 tab</b>
Opening Matter and Charts .....	i–v
Chapter Opener .....	308
9.1 Explore Integer Addition .....	310
9.2 Add Integers .....	316
9.3 Explore Integer Subtraction .....	323
9.4 Subtract Integers.....	330
9.5 Apply Integer Operations .....	336
Chapter Review.....	342
Practice Test .....	344
Wrap It Up!.....	344a
Math Games: Integer Word Game .....	346
Challenge in Real Life: Virtual Reality .....	347

<b>Chapter 10 Patterns and Expressions</b> .....	<b>Ch 10 tab</b>
Opening Matter and Charts .....	i–v
Chapter Opener .....	348
10.1 Describe Patterns .....	350
10.2 Variables and Expressions.....	358
10.3 Evaluate Expressions .....	365
10.4 Graph Linear Relations.....	372
Chapter Review.....	382
Practice Test .....	384
Wrap It Up!.....	384a
Math Games: Puzzling Expressions .....	386
Challenge in Real Life: Your Life Line .....	387

<b>Chapter 11 Solving Equations</b> .....	<b>Ch 11 tab</b>
Opening Matter and Charts .....	i–iii
Chapter Opener .....	388
11.1 Expressions and Equations .....	390
11.2 Solve One-Step Equations: $x + a = b$ .....	395
11.3 Solve One-Step Equations: $ax = b$ , $\frac{x}{a} = b$ .....	402
11.4 Solve Two-Step Equations: $ax + b = c$ .....	408
Chapter Review .....	414
Practice Test .....	416
Wrap It Up! .....	416a
Math Games: Equation Puzzles .....	418
Challenge in Real Life: Wrapping Gifts .....	419

<b>Chapter 12 Working With Data</b> .....	<b>Ch 12 tab</b>
Opening Matter and Charts .....	i–v
Chapter Opener .....	420
12.1 Median and Mode .....	422
12.2 Mean .....	428
12.3 Range and Outliers .....	434
12.4 The Effects of Outliers .....	440
12.5 Choose the Best Measure of Central Tendency .....	446
Chapter Review .....	452
Practice Test .....	454
Wrap It Up! .....	454a
Math Games: Data Duel .....	456
Challenge in Real Life: Managing a Business .....	457
Chapters 9–12 Review .....	458
Task: The Birthday Party .....	461

## BLACKLINE MASTERS

This package is available on the *MathLinks 7* Teacher's Resource CD-ROM. It provides generic resource masters, which include a generic project rubric and chapter-specific worksheets and tests.

Blackline master worksheets are provided in Microsoft® Word and PDF format. You may use the worksheet as is or access the Microsoft® Word document and revise it to meet the specific needs of a particular student or of your entire class.

Note that the second last blackline master in each chapter provides all the answers that are in the back of the student resource, plus the answers to the practice test. The last blackline master in each chapter provides the answers to all the questions on the chapter blackline masters.

There are additional worksheets on the McGraw-Hill Ryerson web site. You can access these through the *MathLinks 7* book site at [www.mathlinks7.ca](http://www.mathlinks7.ca).

### Generic Masters

Master 1 Project Rubric  
Master 2 Two Stars and One Wish  
Master 3 Integer Number Lines  
Master 4 Vertical and Horizontal Number Lines  
Master 5 Tangram  
Master 6 Square Dot Paper  
Master 7 Isometric Dot Paper  
Master 8 Centimetre Grid Paper  
Master 9 0.5 Centimetre Grid Paper  
Master 10 Hundred Grids  
Master 11 Hundred Chart  
Master 12 Percent Circles  
Master 13 Pattern Blocks  
Master 14 Fraction Circles  
Master 15 Fraction Strips

### Chapter 1

BLM 1–1 *MathLinks 7* Scavenger Hunt  
BLM 1–2 Chapter 1 Self-Assessment  
BLM 1–3 Coordinates and Design  
BLM 1–4 Section 1.1 Extra Practice  
BLM 1–5 Section 1.1 Math Link  
BLM 1–6 Section 1.2 Extra Practice  
BLM 1–7 Section 1.2 Math Link  
BLM 1–8 Section 1.3 Extra Practice  
BLM 1–9 Section 1.3 Math Link  
BLM 1–10 Section 1.4 Extra Practice  
BLM 1–11 Chapter 1 Key Words Puzzle  
BLM 1–12 Chapter 1 Test  
BLM 1–13 Chapter 1 Wrap It Up!  
BLM 1–14 Going Fishing Game Boards

BLM 1–15 Chapter 1 *MathLinks 7* Student Resource Answers  
BLM 1–16 Chapter 1 BLM Answers

### Chapter 2

BLM 2–1 Chapter 2 Self-Assessment  
BLM 2–2 Operations on Decimal Numbers  
BLM 2–3 Place Value Charts  
BLM 2–4 Section 2.1 Extra Practice  
BLM 2–5 Section 2.1 Math Link  
BLM 2–6 Section 2.2 Extra Practice  
BLM 2–7 Section 2.2 Math Link  
BLM 2–8 Section 2.3 Extra Practice  
BLM 2–9 Section 2.3 Math Link  
BLM 2–10 Section 2.4 Extra Practice  
BLM 2–11 Chapter 2 Test  
BLM 2–12 Chapter 2 Wrap It Up!  
BLM 2–13 Decimal Delights Game Boards  
BLM 2–14 Chapter 2 *MathLinks 7* Student Resource Answers  
BLM 2–15 Chapter 2 BLM Answers

### Chapter 3

BLM 3–1 Chapter 3 Self-Assessment  
BLM 3–2 Geometry and Measurement  
BLM 3–3 Section 3.1 Extra Practice  
BLM 3–4 Section 3.1 Math Link  
BLM 3–5 Section 3.2 Extra Practice  
BLM 3–6 Section 3.2 Math Link  
BLM 3–7 Section 3.3 Extra Practice  
BLM 3–8 Section 3.3 Math Link  
BLM 3–9 Section 3.4 Extra Practice  
BLM 3–10 Section 3.4 Math Link  
BLM 3–11 Section 3.5 Extra Practice  
BLM 3–12 Section 3.5 Math Link

BLM 3–13 Chapter 3 Test  
BLM 3–14 Chapter 3 Wrap It Up!  
BLM 3–15 Pool Table  
BLM 3–16 Chapter 3 *MathLinks 7* Student Resource Answers  
BLM 3–17 Chapter 3 BLM Answers

### Chapter 4

BLM 4–1 Chapter 4 Self-Assessment  
BLM 4–2 Comparing Numbers  
BLM 4–3 Section 4.1 Extra Practice  
BLM 4–4 Section 4.1 Art Link  
BLM 4–5 Section 4.2 Extra Practice  
BLM 4–6 Section 4.2 Math Link  
BLM 4–7 Section 4.3 Extra Practice  
BLM 4–8 Section 4.3 Math Link  
BLM 4–9 Chapter Review #10  
BLM 4–10 Chapter 4 Test  
BLM 4–11 Chapter 4 Wrap It Up!  
BLM 4–12 Math's a Snap Playing Cards  
BLM 4–13 Chapter 4 *MathLinks 7* Student Resource Answers  
BLM 4–14 Chapter 4 BLM Answers

### Chapter 5

BLM 5–1 Chapter 5 Self-Assessment  
BLM 5–2 Probability  
BLM 5–3 Section 5.1 Extra Practice  
BLM 5–4 Section 5.1 Math Link  
BLM 5–5 Section 5.2 Extra Practice  
BLM 5–6 Section 5.2 Math Link  
BLM 5–7 Section 5.3 Extra Practice  
BLM 5–8 Section 5.4 Extra Practice  
BLM 5–9 Crunch Time Game Board  
BLM 5–10 Section 5.4 Math Link  
BLM 5–11 Random Number Generator

BLM 5–12 Section 5.5 Extra Practice  
BLM 5–13 Chapter 5 Test  
BLM 5–14 Chapter 5 Wrap It Up!  
BLM 5–15 System 1 Spinners  
BLM 5–16 Chapter 5 *MathLinks 7*  
Student Resource Answers  
BLM 5–17 Chapter 5 BLM Answers

## Chapter 6

BLM 6–1 Chapter 6 Self-Assessment  
BLM 6–2 Introduction to  
Fractions Operations  
BLM 6–3 Section 6.1 Extra Practice  
BLM 6–4 Section 6.1 Math Link  
BLM 6–5 Section 6.2 Extra Practice  
BLM 6–6 Section 6.2 Math Link  
BLM 6–7 Section 6.3 Extra Practice  
BLM 6–8 Section 6.3 Math Link  
BLM 6–9 Chapter 6 Test  
BLM 6–10 24-Hour Fraction Circle  
BLM 6–11 Chapter 6 Wrap It Up!  
BLM 6–12 It's Divisible Spinner  
BLM 6–13 Chapter 6 *MathLinks 7*  
Student Resource Answers  
BLM 6–14 Chapter 6 BLM Answers

## Chapter 7

BLM 7–1 Chapter 7 Self-Assessment  
BLM 7–2 Add and Subtract Fractions  
BLM 7–3 Section 7.1 Extra Practice  
BLM 7–4 Section 7.1 Math Link  
BLM 7–5 Section 7.2 Extra Practice  
BLM 7–6 Section 7.2 Math Link  
BLM 7–7 Section 7.3 Extra Practice  
BLM 7–8 Section 7.3 Math Link  
BLM 7–9 Section 7.4 Extra Practice  
BLM 7–10 Section 7.4 Math Link  
BLM 7–11 Chapter 7 Test  
BLM 7–12 Chapter 7 Wrap It Up!  
BLM 7–13 Fraction Race Spinners  
BLM 7–14 Chapter 7 *MathLinks 7*  
Student Resource Answers  
BLM 7–15 Chapter 7 BLM Answers

## Chapter 8

BLM 8–1 Chapter 8 Self-Assessment  
BLM 8–2 Chapter Opener Math Link  
BLM 8–3 Perimeter and Area  
BLM 8–4 Circles  
BLM 8–5 Drawing Circles Using a  
Computer and Drawing Software  
BLM 8–6 Section 8.1 Extra Practice  
BLM 8–7 Section 8.1 Math Link

BLM 8–8 Section 8.2 Extra Practice  
BLM 8–9 Section 8.2 Math Link  
BLM 8–10 Section 8.3 Extra Practice  
BLM 8–11 Section 8.3 Math Link  
BLM 8–12 Section 8.4 Extra Practice  
BLM 8–13 Draw a Circle Graph Using  
a Percent Circle  
BLM 8–14 Creating Circle Graphs in  
Microsoft® Excel  
BLM 8–15 Creating Circle Graphs in  
Corel Quattro® Pro 10  
BLM 8–16 Creating Circle Graphs in  
Appleworks® 6.2  
BLM 8–17 Section 8.5 Extra Practice  
BLM 8–18 Chapter 8 Test  
BLM 8–19 Chapter 8 Wrap It Up!  
BLM 8–20 Chapter 8 *MathLinks 7*  
Student Resource Answers  
BLM 8–21 Chapter 8 BLM Answers

## Chapter 9

BLM 9–1 Chapter 9 Self-Assessment  
BLM 9–2 Adding and Subtracting  
Integers  
BLM 9–3 Section 9.1 Extra Practice  
BLM 9–4 Section 9.2 Extra Practice  
BLM 9–5 Section 9.2 Math Link  
BLM 9–6 Time Zone Map  
BLM 9–7 Section 9.3 Extra Practice  
BLM 9–8 Section 9.4 Explore  
the Math  
BLM 9–9 Section 9.4 Extra Practice  
BLM 9–10 Section 9.4 Math Link  
BLM 9–11 Faces  
BLM 9–12 Section 9.5 Extra Practice  
BLM 9–13 Section 9.5 Science Link  
BLM 9–14 Chapter 9 Test  
BLM 9–15 Chapter 9 Wrap It Up!  
BLM 9–16 Coordinate Grid  
BLM 9–17 Chapter 9 *MathLinks 7*  
Student Resource Answers  
BLM 9–18 Chapter 9 BLM Answers

## Chapter 10

BLM 10–1 Chapter 10 Self-Assessment  
BLM 10–2 Patterns and Expressions  
BLM 10–3 Coordinate Grid  
BLM 10–4 Section 10.1 Extra Practice  
BLM 10–5 Section 10.1 Math Link  
BLM 10–6 Parts of an Expression  
BLM 10–7 Section 10.2 Extra Practice  
BLM 10–8 Section 10.2 Math Link  
BLM 10–9 Section 10.3 Extra Practice

BLM 10–10 Section 10.3 Math Link  
BLM 10–11 Section 10.4 Extra Practice  
BLM 10–12 Section 10.4 Math Link  
BLM 10–13 Chapter 10 Test  
BLM 10–14 Wrap It Up! Mystery  
Pattern  
BLM 10–15 Chapter 10 Wrap It Up!  
BLM 10–16 Puzzling Expressions  
BLM 10–17 Your Life Line Results  
BLM 10–18 Chapter 10 *MathLinks 7*  
Student Resource Answers  
BLM 10–19 Chapter 10 BLM Answers

## Chapter 11

BLM 11–1 Chapter 11 Self-Assessment  
BLM 11–2 Solving Equations  
BLM 11–3 Section 11.1 Extra Practice  
BLM 11–4 Section 11.1 Math Link  
BLM 11–5 Section 11.2 Extra Practice  
BLM 11–6 Section 11.2 Math Link  
BLM 11–7 Section 11.3 Extra Practice  
BLM 11–8 Section 11.3 Math Link  
BLM 11–9 Section 11.4 Extra Practice  
BLM 11–10 Section 11.4 Math Link  
BLM 11–11 Chapter 11 Test  
BLM 11–12 Chapter 11 Wrap It Up!  
BLM 11–13 Chapter 11 *MathLinks 7*  
Student Resource Answers  
BLM 11–14 Chapter 11 BLM Answers

## Chapter 12

BLM 12–1 Chapter 12 Self-Assessment  
BLM 12–2 Working With Data  
BLM 12–3 Section 12.1 Extra Practice  
BLM 12–4 Section 12.1 Math Link  
BLM 12–5 Section 12.2 Extra Practice  
BLM 12–6 Section 12.2 Math Link  
BLM 12–7 Section 12.3 Extra Practice  
BLM 12–8 Section 12.3 Math Link  
BLM 12–9 Section 12.4 Extra Practice  
BLM 12–10 Section 12.4 Math Link  
BLM 12–11 Section 12.5 Extra Practice  
BLM 12–12 Section 12.5 Math Link  
BLM 12–13 Chapter 12 Test  
BLM 12–14 Chapter 12 Wrap It Up!  
BLM 12–15 Data Duel Spinner  
BLM 12–16 Sports Shoe Survey  
BLM 12–17 Chapter 12 *MathLinks 7*  
Student Resource Answers  
BLM 12–18 Chapter 12 BLM Answers