

Table of Contents

Ontario Grade 8 Mathematics

	Page
Introduction	i
Chapter 1 – Number Concepts	
1.1 Rational and Irrational Numbers	2
1.2 Percentage	8
1.3 Square Roots	12
1.4 Rates and Proportions	15
1.5 Scientific Notation	19
1.6 Evaluating Exponential Expressions with Numerical Bases	23
Chapter 2 – Number Operations	
2.1 Mental Math Strategies for Multiplication and Division	29
2.2 Operations with Fractions	33
2.3 Operations with Integers and Other Rational Numbers	47
2.4 Percentage Problems	58
Chapter 3 – Patterns, Equations, and Inequalities	
3.1 Variables and Relations	67
3.2 Graphing with Tables of Values	71
3.3 Expressions as Polynomials	75
3.4 Simplifying Polynomials	77
3.5 Evaluating Polynomial Expressions	78
3.6 Solving One-Step Equations	80
3.7 Solving Two-Step Equations	85
3.8 First-Degree Inequalities	88
Chapter 4 – Measurement	
4.1 The Pythagorean Relationship	96
4.2 Areas and Perimeters of Quadrilaterals and Circles	101
4.3 Volume of Solid Objects	106
4.4 Surface Area and Volume of a Prism	109
4.5 Surface Area and Volume of a Cylinder	113
Chapter 5 – Comparing Figures	
5.1 Interior Angles in a Triangle	121
5.2 Lines and Corresponding Angles	124
5.3 Parallel lines Cut by Transversals	128
5.4 Interior Angles in a Polygon	131
5.5 Congruent Triangles	133
5.6 Enlargements and Reductions	139
5.7 Scale Diagrams	142
Chapter 6 – Transformations	
6.1 Translations	150
6.2 Reflections	154
6.3 Rotations	159
6.4 Combining Transformations	163

	Page
6.5 Drawing Tessellations	166
6.6 Transformations of Tessellations	172
Chapter 7 – 3-D Objects and 2-D Shapes	
7.1 Isometric Dot Paper	188
7.2 3-Dimension Rod Designs in 2-Dimensions	191
Chapter 8 – Financial Literacy	
8.1 Financial Planning	204
8.2 Budgeting	207
8.3 Balancing a Budget	210
8.4 Transactions	213
8.5 Loyalty Programs	218
Chapter 9 – Data Management	
9.1 Questions for Investigation, Using Existing Data	223
9.2 Appropriate Methods of Collecting Data	225
9.3 Displaying Data	227
9.4 Advantages and Disadvantage of Types of Graphs	232
9.5 Misleading Graphs	239
9.6 Two-Variable Data and Scatter Plots	242
Chapter 10 – Probability	
10.1 Probability of an Independent Event	250
10.2 Dependent and Independent Events and Sample Space	253
10.3 Probability of Two Independent Events	261
Chapter 11 – Social Emotional Learning	
11.1 Communicating	269
11.2 Representing	274
11.3 Connecting and Relating	278
11.4 Reasoning, Proving, and Reflecting	282
Chapter 12 – Coding	
12.1 Writing Efficient Code	290
12.2 Reading and Altering Code	293
12.3 Inputs and Outputs	298
12.4 Writing Code Using a Coding Platform	305
Answers to Exercises and Chapter Tests	307