

Grade 8 Math – Table of Contents

UNIT 1: The Number System

Section A: Rational & Irrational Numbers

Lesson 1: Rational Numbers and the Number Line	1
Lesson 2: Comparing Rational Numbers	5
Lesson 3: Understanding Irrational Numbers	9
Lesson 4: Approximating Irrational Numbers	13
Lesson 5: Square & Cube Roots	17
Lesson 6: Estimating Roots	21
Lesson 7: Converting Repeating Decimals to Fractions	25
Lesson 8: Locating Irrational Numbers on a Number Line	29
Lesson 9: Real Number System Overview	33
Lesson 10: Classifying Real Numbers	37
Lesson 11: Section A Review	41
Lesson 12: Section A Quiz	

Section B: Exponents, Scientific Notation & Applications

Lesson 13: Scientific Notation – Introduction	45
Lesson 14: Scientific Notation – Operations	49
Lesson 15: Comparing with Scientific Notation	53
Lesson 16: Expressing Quantities in Scientific Notation	57
Lesson 17: Simplifying Radical Expressions .	61
Lesson 18: Rational & Irrational Numbers with Exponents	65
Lesson 19: Evaluating and Simplifying Radicals	69
Lesson 20: Real-World Applications of Real Numbers	73
Lesson 21: Graphing Rational and Irrational Numbers	77
Lesson 22: Scientific Notation in Context	81

Section C: Extensions

Lesson 23: Roots in Geometry (Pythagorean Intro)	85
Lesson 24: Word Problems – Roots & Powers	89
Lesson 25: Scientific Notation with Technology	93
Lesson 26: Rational vs Irrational Problem Solving	97

Lesson 27: Visualizing Real Numbers	101
Lesson 28: Pythagorean Triples	105
Lesson 29: Approximating Roots with Technology	109
Lesson 30: Expression Estimation with Irrationals	113
Lesson 31: Constructing Problems	117
Lesson 32: Unit 1 Project	121
Lesson 33: Unit 1 Spiral Review	123
Lesson 34: Unit 1 Review	127
Lesson 35: Unit 1 Test	

UNIT 2: Expressions & Equations

Section A: Exponents & Expressions

Lesson 36: Integer Exponents	131
Lesson 37: Zero & Negative Exponents	135
Lesson 38: Power of a Power	139
Lesson 39: Evaluating Exponential Expressions	143
Lesson 40: Scientific Notation & Exponents	147
Lesson 41: Section A Review	151
Lesson 42: Section A Quiz	

Section B: Equations & Problem Solving

Lesson 43: Writing Equivalent Expressions	155
Lesson 44: Solving One- & Two-Step Equations	159
Lesson 45: Multi-Step Equations	163
Lesson 46: Distributive Property & Combining Like Terms	167
Lesson 47: Word Problems with Equations	171
Lesson 48: Writing Equations from Word Problems	175
Lesson 49: Geometry-Based Equations	179
Lesson 50: Modeling Real-World Problems	183
Lesson 51: Introduction to Systems	187
Lesson 52: Solving Systems – Graphing	191
Lesson 53: Solving Systems – Substitution & Elimination	195
Lesson 54: Special Systems	199
Lesson 55: Applications of Systems	203
Lesson 56: Linear Equations in One Variable	207
Lesson 57: Rational Number Equations	211
Lesson 58: Percent Problems	215

Lesson 59: Growth & Decay Expressions	219
Lesson 60: Graph Proportional Relationships & Slope	223

Section C: Extensions

Lesson 61: Multi-Step Geometry Applications	227
Lesson 62: Interpreting Representations	231
Lesson 63: Technology in Equations	235
Lesson 64: Translating Words to Algebra	239
Lesson 65: Error Analysis	243
Lesson 66: Visual Equation Models	247
Lesson 67: Unit 2 Project – Business Math	251
Lesson 68: Unit 2 Spiral Review	253
Lesson 69: Unit 2 Review	257
Lesson 70: Unit 2 Test	

UNIT 3: Functions

Section A: Function Basics

Lesson 71: What is a Function?	261
Lesson 72: Inputs, Outputs & Notation	265
Lesson 73: Identifying Functions	269
Lesson 74: Evaluating Functions	273
Lesson 75: Function Rules and Tables	277
Lesson 76: Comparing Linear vs Nonlinear Functions	281
Lesson 77: Section A Review	285
Lesson 78: Section A Quiz	

Section B: Linear Functions

Lesson 79: Graphing Functions	289
Lesson 80: Domain & Range	293
Lesson 81: Understanding Slope and y-Intercept	297
Lesson 82: Finding Slope from Graphs & Points	301
Lesson 83: Deriving Linear Equations	305
Lesson 84: Constructing Linear Equations ($y = mx + b$)	309
Lesson 85: Graphing in Context	313

Lesson 86: Interpreting Slope in Real Life	317
Lesson 87: Piecewise Functions (Intro)	321
Lesson 88: Cost & Rate Problems	325
Lesson 89: Function Scenarios in Science	329
Lesson 90: Function Machines	333
Lesson 91: Matching Tables, Graphs, Equations	337
Lesson 92: Independent vs Dependent Variables	341
 Lesson 93: Unit 3 Project	 345
Lesson 94: Unit 3 Spiral Review	347
Lesson 95: Unit 3 Review	351
Lesson 96: Unit 3 Test	

UNIT 4: Geometry

Section A: Angle Relationships

Lesson 97: Angle Relationships	355
Lesson 98: Transversal Angles & Parallel Lines	359
Lesson 99: Triangle Angle Sum Proof	363
Lesson 100: Section A Review	367
Lesson 101: Section A Quiz	

Section B: Transformations & Geometry

Lesson 102: Transformations Introduction	371
Lesson 103: Translations, Reflections, Rotations	375
Lesson 104: Dilations & Scale Factor	379
Lesson 105: Congruence & Similarity	383
Lesson 106: Transformations on Coordinate Plane	387
Lesson 107: Pythagorean Theorem Proof	391
Lesson 108: Pythagorean Applications	395
Lesson 109: Distance on Coordinate Plane	399
Lesson 110: Volume of Cylinders, Cones, Spheres	403
Lesson 111: Composite Solids	407
 Lesson 112: Unit 4 Project	 411
Lesson 113: Unit 4 Spiral Review	413
Lesson 114: Unit 4 Review	417
Lesson 115: Unit 4 Test	

UNIT 5: Statistics & Probability

Section A: Scatter Plots & Data

Lesson 116: Scatter Plots & Patterns	421
Lesson 117: Types of Association	425
Lesson 118: Clusters & Outliers	429
Lesson 119: Two-Way Tables	433
Lesson 120: Section A Review	437
Lesson 121: Section A Quiz	

Section B: Modeling & Prediction

Lesson 122: Line of Best Fit	441
Lesson 123: Drawing Trend Lines	445
Lesson 124: Interpreting Slope in Context	449
Lesson 125: Model Fit & Predictions	453
Lesson 126: Real-World Data Applications	457
Lesson 127: Comparing Data Sets	461
Lesson 128: Unit 5 Project	465
Lesson 129: Unit 5 Review	467
Lesson 130: Final Assessment	