

CONTENTS



Accompanying Materials Available at More4U	vi
Introduction	vii
Chapter 1	
Kindergarten: Attributes to Measure	1
Activity 1: Right on the Button!	4
Activity 2: What’s Bugging You?	6
Activity 3: Goats, Trolls, and Bridges	8
Activity 4: Big, Small, Short, Tall?	10
Activity 5: Which Is the Shortest of All Your Toes?	13
Activity 6: Faster, Slower, Higher, Lower!	15
Activity 7: Reach for the Stars!	17
Activity 8: On the Other Hand	20
Activity 9: Watch Out for the Big Guy!	22
Activity 10: She Swallowed a What?	24
Activity 11: “Just Right!”	26
Activity 12: Inch by Inch	28
Activity 13: Which One Fits?	31
Activity 14: Fill It to the Top!	33

Chapter 2

Grade 1: Motivation to Measure	35
Activity 1: The Line Up Book	39
Activity 2: A Very Big Bunny	42
Activity 3: Measuring with Monkeys	45
Activity 4: Much Bigger Than	47
Activity 5: Let's Fly a Kite	50
Activity 6: Measuring Puppies and Kittens	53
Activity 7: Super Sand Castle Saturday	55
Activity 8: Twelve Snails to One Lizard	57
Activity 9: Elevator Magic	59
Activity 10: Ready, Set, Hop!	62
Activity 11: The Grouchy Ladybug	65
Activity 12: Mighty Maddie	67
Activity 13: A House for Birdie	70
Activity 14: The Mitten	72

Chapter 3

Grade 2: Comparing and Understanding Measures	75
Activity 1: The Long and the Short of It	79
Activity 2: Surrounded!	82
Activity 3: It's Time to Go!	87
Activity 4: X Marks the Spot!	91
Activity 5: Third Time's the Charm!	97
Activity 6: The "Over a Wall" Challenge	101
Activity 7: Ridiculous Rulers	106
Activity 8: Fetch the Flag!	110
Activity 9: Is Bigger Always Better?	114
Activity 10: Box Up the Blocks!	117
Activity 11: Fill It Up!	123
Activity 12: Which Number Is Appropriate as a Measure? (Assessment) . . .	125

Chapter 4

Grade 3: Length, Area, and Angle Measurement	127
Activity 1: Every Square Inch: Designing a Patio Space	131
Activity 2: Patio Redesign Task	136
Activity 3: Wraps and Sides	138
Activity 4: Wraps and Sides, Continued	141
Activity 5: To the Nearest Quarter	144
Activity 6: More Ridiculous Rulers	147

Activity 7:	Partial Arrays and Measuring the Area of Rectangles	153
Activity 8:	Focus on Area and Conserving Area	157
Activity 9:	Comparison of Areas	161
Activity 10:	Angles and Arms	165

Chapter 5

Grade 4: Length, Area, Volume, and Angle Measurement 169

Activity 1:	How Big Is This Room?	172
Activity 2:	Comparing Stacks	175
Activity 3:	Why Is This the Same as That?	179
Activity 4:	Wraps and Sides Again	182
Activity 5:	One-Third of What?	189
Activity 6:	How Far Have We Gone?	193
Activity 7:	Where Do You Place Your Sprinklers?	198
Activity 8:	Snowboarding Spins and Flips	202
Activity 9:	Using Wedges to Focus on Angles	206
Activity 10:	Capacity in the Kitchen	209

Chapter 6

Grade 5: More Length, Area, Volume, and Angle Measurement 211

Activity 1:	Two-Thirds of One-Half of What?	214
Activity 2:	Wacky Races—Who Has Gone Farther? How Much?	218
Activity 3:	Why Invert and Multiply?	223
Activity 4:	The Larger Patio Redesign Task	226
Activity 5:	Base-Ten Multiplication	229
Activity 6:	What Is Volume Anyway?	232
Activity 7:	How Big Is a Cube?	235
Activity 8:	What Size Is Your Air Conditioner?	239
Activity 9:	Interpretation of the Volume Formula	241

References 245

Children's Books Cited 246

Accompanying Materials Available at More4U

To download and print the following materials, go to NCTM's More4U website (<http://www.nctm.org/more4U>) and enter the code shown on this book's title page.

Chapter 1 (Kindergarten)

How to Measure a Horse Using Hands (fig. 1.5; p. 20)

Animals in *There Was an Old Lady Who Swallowed a Fly* (fig. 1.6; p. 24)

Chapter 2 (Grade 1)

Elevator Keypad (fig. 2.6; p. 60)

Chapter 3 (Grade 2)

Map of the Town and Mom's Directions to the Surprise Party (figs. 3.8 and 3.9; pp. 91–92)

Centimeter Measuring Tools (fig. 3.16; p. 103)

Broken Inch Ruler (fig. 3.18; p. 106)

Pattern for Cubic-Inch Box (fig. 3.24; p. 118)

Template for a 3-Inch by 4-Inch by 2-Inch Box (fig. 3.25; p. 119)

All about Jamal and All about Marie (p. 125)

Chapter 4 (Grade 3)

Six Rectangles, A–F (3 sheets) (fig. 4.3; p. 132)

Recording Sheet for Floor Station (fig. 4.4; p. 134)

Recording Sheet for Desk Station (fig. 4.5; p. 134)

Wraps-and-Sides Rulers (fig. 4.8; p. 144)

Ridiculous Rulers (fig. 4.11; p. 149)

Missing Tiles (fig. 4.16; p. 154)

Area Comparison (fig. 4.22; p. 162)

Chapter 5 (Grade 4)

What Are the Missing Dimensions? (fig. 5.2; p. 173)

Find the Additive and Multiplicative Comparisons (fig. 5.3; p. 175)

Find the Stack Height (fig. 5.5; p. 176)

Octagon Wraps-and-Sides Display and Tool (fig. 5.11; p. 182)

Measuring Wraps and Sides (fig. 5.12; p. 184)

Measurement Conversions (fig. 5.13; p. 185)

Measurement Comparisons (fig. 5.16; p. 187)

Student Representations of $\frac{1}{2} \times 8$ (fig. 5.18; p. 190)

Area Models Representing Mathematical Sentences (fig. 5.19; p. 190)

How Far Has Each Person Traveled? (fig. 5.22; p. 193)

How Long Is the Path? (fig. 5.23; p. 194)

Chapter 6 (Grade 5)

Using Drawings to Solve $\frac{1}{2} \times \frac{1}{3}$ (fig. 6.2; p. 215)

Showing Multiplication of Fractions Visually and Symbolically (fig. 6.3; p. 216)

Part 1: Who Has Traveled Farther? (fig. 6.7; p. 220)

Part 2: Who Has Farther Left to Travel? (fig. 6.8; p. 221)

Showing Division by Fractions Visually and Symbolically (fig. 6.11; p. 224)