



TABLE OF CONTENTS (PG. 1 OF 2)

Start Quick and Ramp It Up! 4th Grade Measurement:
Length, Perimeter, Area, & Conversions

ACTIVITY	TOPICS	PAGE
Table of Standards		5
Measurement Challenge	Relative Sizes of Length Units	8
Which Unit?	Relative Sizes of Length Units	12
How Long Is It?	Length Conversions	14
Conversion Match Up	Length Conversions	24
What Goes Together?	Length	29
How Long, How Far?	Length	34
Scavenger Hunt	Length	43
Understanding Perimeter Formulas	Perimeter Formula	60
Understanding the Area Formula for Rectangles	Area Formula	76
Mia's Tree House	Perimeter & Area	89
Which is It: Area or Perimeter?	Perimeter & Area	96
In & Around	Perimeter & Area	114
Measurement Matters	Length, Perimeter, Area, & Conversions	127
Another Dimension	Perimeter & Area	137
Curley Spurley	Length, Perimeter, Area, & Conversions	142
Centimeter Grid Paper		161
Inch Grid Paper		162



TABLE OF CONTENTS (PG. 2 OF 2)

Start Quick and Ramp It Up! 4th Grade Measurement: Length, Perimeter, Area, & Conversions

Content and Instruction Extras

MEANING BEHIND THE MATH

Measurement Conversions and Strip Diagrams	15
Using Tables to Perform Conversions	15
The Importance of Pictures in Measurement Problems (4.IB, 4.IC)	29
Combining Strip Diagrams, Equations, and Length Problems While Building Fluency (4.IF)	43
What is Perimeter?	61
A Vertical Look at Area	76
Helping Students Separate Perimeter and Area (4.IF)	89
Guiding Students Through Problems That Involve Both Perimeter and Area (4.IB)	97

READING, WRITING, AND SPEAKING TO IMPROVE CRITICAL THINKING

Creating and Using Word Walls	34
---	----

WORKING THE CLASSROOM

Total Physical Response	8
Using Highlighters with Conversions (4.IC)	24
This is HARD! Small Group Instruction vs. Whole Class Discussion (4.IG)	114
Posting the Answers?	142



TABLE OF STANDARDS (PG. 1 OF 2)

The activities in this 4th grade Measurement: Length, Perimeter, Area, & Conversions book address the following standards.

Where are we going? Focus Standards		Activity
(4.5)	Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:	
4.5C	use models to determine the formulas for the perimeter of a rectangle ($l + w + l + w$ or $2l + 2w$), including the special form for perimeter of a square ($4s$) and the area of a rectangle ($l \times w$)	8 , 9
4.5D	solve problems related to perimeter and area of rectangles where dimensions are whole numbers. Readiness Standard	10 , 11 , 12 , 13 , 14 , 15
(4.8)	Geometry and measurement. The student applies mathematical process standards to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement. The student is expected to:	
4.8A	identify relative sizes of measurement units within the customary and metric systems; Supporting Standard	1 , 2
4.8B	convert measurements within the same measurement system, customary or metric, from a smaller unit into a larger unit or a larger unit into a smaller unit when given other equivalent measures represented in a table; Supporting Standard	3 , 4 , 5 , 6 , 7 , 15
4.8C	solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate. Readiness Standard	5 , 6 , 7

What kind of mathematical thinking will we use? Working Standards		Activity
(4.4)	Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:	
4.4B	determine products of a number and 10 or 100 using properties of operations and place value understandings; Supporting Standard	3
4.4D	use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties; Supporting Standard	3
4.4F	use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor; Supporting Standard	3



TABLE OF STANDARDS (PG. 2 OF 2)

What kind of mathematical thinking will we use? Process Standards		Activity
(4.1)	Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	
4.1A	apply mathematics to problems arising in everyday life, society, and the workplace;	1 , 2 , 3 , 5 , 6 , 7 , 8 , 9 , 10 , 11 , 12 , 13 , 14 , 15
4.1B	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;	2 , 3 , 5 , 6 , 7 , 10 , 11 , 12 , 13 , 14 , 15
4.1C	select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;	1 , 2 , 3 , 5 , 6 , 7 , 8 , 9 , 10 , 11 , 12 , 13 , 14
4.1D	communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	1 , 2 , 8 , 9 , 10 , 15
4.1E	create and use representations to organize, record, and communicate mathematical ideas;	2 , 3 , 4 , 6 , 7 , 8 , 9 , 11
4.1F	analyze mathematical relationships to connect and communicate mathematical ideas; and	3 , 4 , 5 , 6 , 7 , 8 , 9 , 10 , 11 , 12 , 13 , 14 , 15
4.1G	display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	2 , 8 , 9 , 11