

4TH GRADE MATH

TABLE OF CONTENTS

CHAPTER ONE— NUMBER SYSTEMS

TOPIC A: Whole Numbers	
PART 1: Skip Counting by 1,000s.....	1
PART 2: Reading and Writing Whole Numbers to 10,000	
Section a: Writing Verbal Whole Numbers to Numeral Form.....	3
Section b: Writing Whole Numerals to Verbal Form.....	4
Section c: Reading and Writing Whole Number Word Problems.....	5
PART 3: Comparing and Ordering Whole Numbers to 10,000	
Section a: Ordering from Least to Greatest.....	6
Section b: Ordering from Greatest to Least.....	7
Section c: Identifying Numbers Within a Given Range.....	8
Section d: Ordering Word Problems.....	9
PART 4: Understanding Place Value to 10,000	
Section a: Identifying Locations of Digits.....	11
Section b: Understanding Value of Digits.....	12
Section c: Place Value Word Problems.....	13
PART 5: Composing and Decomposing 4-Digit Whole Numbers.....	16
TOPIC B: Associative Property of Multiplication.....	20
TOPIC C: Common Fractions	
PART 1: Understanding Fractions as Divisions of Whole Numbers.....	22
PART 2: Locating Fractions on a Number Line.....	24
PART 3: Recognizing and Generating Equivalent Fractions	
Section a: Recognizing Equivalent Fractions.....	29
Section b: Equivalent Fraction Word Problems.....	33
PART 4: Comparing Fractions with Like Denominators.....	37
TOPIC D: Decimals	
PART 1: Understanding Decimals as Part of a Whole	
Section a: Determining Decimals Using Models.....	40
Section b: Decimal Word Problems.....	44
PART 2: Reading and Writing Decimals in Money.....	46
PART 3: Comparing and Ordering Decimals (to the Hundredths Place).....	49

CHAPTER TWO— NUMBER THEORY & OPERATIONS

TOPIC A: Properties of Odd and Even Numbers as a Result of Multiplication.....	55
TOPIC B: Multiplication of Odd and Even Number Word Problems.....	57
TOPIC C: Addition and Subtraction of Whole Numbers	
PART 1: Adding and Subtracting Numbers up to 10,000	
Section a: Adding Whole Numbers.....	60
Section b: Subtracting Whole Numbers.....	63
PART 2: Solving Addition and Subtraction Word Problems	
Section a: Addition Word Problems.....	66
Section b: Subtraction Word Problems.....	69
Section c: Mixed Operation Word Problems.....	72
TOPIC D: Multiplication and Division of Whole Numbers	
PART 1: Understanding the Meaning of Multiplication and Division	
Section a: Using Multiplication Models to Find the Factors.....	73
Section b: Using Division Models to Find the Dividend and Divisor.....	76
Section c: Multiplication and Division Word Problems.....	79
PART 2: Using Multiplication and Division as Inverse Operations to Solve Problems.....	81
PART 3: Multiplying Two-Digit Numbers by One-Digit Numbers	
Section a: Stacked Multiplication.....	84
Section b: Multiplication Word Problems.....	85
PART 4: Multiplying Two-Digit Numbers by Two-Digit Numbers	
Section a: Stacked Multiplication.....	89

Section b: Multiplication Word Problems	91
PART 5: Multiplying and Dividing Multiples of 10 and 100 up to 1,000	
Section a: Multiplying Multiples of 10 and 100	93
Section b: Dividing Multiples of 10 and 100	95
PART 6: Dividing Two-Digit Dividends by One-Digit Divisors (With or Without Remainders)	
Section a: Division Number Sentences	96
Section b: Division Word Problems	98
PART 7: Interpreting the Meaning of Remainders	
Section a: Remainder Models and Number Sentences	101
Section b: Remainder Word Problems	106
TOPIC E: Fractions and Decimals	
PART 1: Adding and Subtracting Fractions with Common Denominators	
Section a: Adding and Subtracting Fractions Number Sentences	108
Section b: Fraction Word Problems	110
PART 2: Expressing Decimals of Tenths and Hundredths as Fractions	
Section a: Expressing Equivalence of Decimals and Fractions	111
Section b: Equivalent Decimal and Fraction Word Problems	115
PART 3: Adding and Subtracting Decimals to Tenths and Hundredths	
Section a: Adding and Subtracting Decimals Number Sentences	116
Section b: Decimal Word Problems	117

CHAPTER THREE— ESTIMATION

TOPIC A: Rounding to the Nearest Tens and Hundreds	121
TOPIC B: Using Estimation to Check Reasonableness of Answers	
PART 1: Understanding the Variance of Estimation from Actual Value	123
PART 2: Addition Estimation	123
PART 3: Subtraction Estimation	126
PART 4: Multiplication Estimation	127
PART 5: Division Estimation	129
PART 6: Multiple Operation Estimation	131

CHAPTER FOUR— ALGEBRA

TOPIC A: Algebraic Variables, Expressions, and Equations	
PART 1: Translating Verbal Phrases into Expressions	133
PART 2: Evaluating the Value of an Expression	135
PART 3: Evaluating Open Sentences with One Operation	
Section a: Addition Open Sentences	136
Section b: Subtraction Open Sentences	137
Section c: Multiplication Open Sentences	138
Section d: Division Open Sentences	139
TOPIC B: Algebraic Equations and Inequalities	
PART 1: Comparing Whole Numbers, Fractions, and Decimals to Hundredths	
Section a: Using Models to Compare Values	141
Section b: Using Symbols to Compare Values (<, >, =)	145
Section c: Comparing Values Word Problems	148
PART 2: Finding Values to Make Open Sentences True Using < or >	150
TOPIC C: Patterns, Relations, and Functions	
PART 1: Describing and Extending Numeric and Geometric Patterns	154
PART 2: Stating the Rule for a Whole Number Pattern or Function Given a Table or Input/Output Box	159

CHAPTER FIVE— GEOMETRY

TOPIC A: Geometric Shapes	
PART 1: Identifying and Naming Polygons	173
PART 2: Identifying Points and Line Segments When Drawing Plane Figures	181
PART 3: Adding Sides to Find Perimeter of Polygons	186
PART 4: Counting Squares to Find Area of Rectangles	194
PART 5: Defining and Identifying Vertices, Faces, and Edges in 3-Dimensional Shapes	205

TOPIC B: Geometric Relationships of Lines and Angles	
PART 1: Drawing and Identifying Intersecting, Perpendicular, and Parallel Lines	214
PART 2: Identifying Points and Rays When Drawing Angles	225
PART 3: Classifying Angles as Acute, Obtuse, Right, and Straight	228

CHAPTER SIX— MEASUREMENT

TOPIC A: Length	
PART 1: Selecting Appropriate Tools and Units (Customary and Metric)	237
PART 2: Measuring to the Nearest Value of Length	238
PART 3: Equivalent Customary Units of Length	249
TOPIC B: Mass/Weight	
PART 1: Selecting Appropriate Tools and Units (Grams and Kilograms)	251
PART 2: Using Grams to Measure Mass/Weight	255
TOPIC C: Metric Capacity	
PART 1: Selecting Appropriate Tools and Units (Liters and Milliliters)	258
PART 2: Using Liters and Milliliters to Measure Capacity	262
TOPIC D: Making Monetary Change Using Coins and Dollar Amounts	266
TOPIC E: Elapsed Time	
PART 1: Range of Time	279
PART 2: Calculating in Hours and Half-Hour Increments (Not Crossing AM/PM)	281
PART 3: Calculating More Specific Time Increments (Advanced)	286
PART 4: Using a Calendar to Calculate in Days and Weeks	293

CHAPTER SEVEN— STATISTICS & PROBABILITY

TOPIC A: Collection of Data	
PART 1: Designing Investigations to Address Questions from Given Data	299
PART 2: Collecting and Recording Data Using Observations, Surveys, and Experiments	301
TOPIC B: Displaying Data Using Tables, Bar Graphs, and Pictographs	305
TOPIC C: Reading and Interpreting Line Graphs	327
TOPIC D: Making Predictions from Data	
PART 1: Developing and Making Predictions Based on Data	332
PART 2: Formulating Conclusions and Making Predictions from Graphs	
Section a: Conclusions and Predictions from Tally Charts	342
Section b: Conclusions and Predictions from Bar Graphs	345
Section c: Conclusions and Predictions from Line Graphs	354
Section d: Conclusions and Predictions from Pictographs	358

APPENDIX—HOW TO ADD MATH GRIDS & TABLES TO AN EXAM	367
---	-----

