PURPOSEFUL DESIGN PUBLICATIONS

Elementary Mathematics Series

Scope and Sequence

7229

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	K	1	2	3	4	5	6
I. PATTERNS							
A. Sorting							
Identifying attributes	•	•	•				
Sorting objects by 2 or more attributes		•	•				
Sorting objects into groups	•	•	•				
Identifying attributes that distinguish a set	•	•					
Identifying objects that do not belong in a set	•	•	•				
Identifying and distinguishing sets by number or attribute	•	•	•				
Classifying geometric shapes by attribute	•	•	•				
Organizing information using a Venn diagram		•		•		•	
B. Patterns							
Identifying patterns	•	•	•	•	•	•	
Copying a given pattern	•	•	•			•	
Describing a pattern	•	•	•				
Describing a pattern using math manipulatives	•	•	•				
Identifying the next object in a pattern	•	•	•	•	•	•	
Extending and designing patterns	•	•	•		•	•	
Finding patterns in sequencing of counting	•	•	•	•			
Writing the next number in sequence to 100		•					
Identifying the number before, after, or between given numbers	•	•	•				
Finding number patterns using a hundred chart	•	•					
Finding number patterns using a table			•			•	
Exploring and predicting number patterns			•				•
Skip-counting by 2's, 5's, and 10's	•	•	•	•			
Skip-counting by 100's				•			
Designing patterns with 2's, 5's, and 10's		•	•				
Identifying number patterns as they relate to the Distributive Property							•
Identifying odd and even numbers			•	•	•		
Identifying even numbers as matched pairs			•	•			
Identifying prime and composite numbers					•	•	•
Exploring square numbers					•	•	•
Exploring square roots							•
Distinguishing between terminating and repeating decimals							•
C. Geometric Patterns							
Exploring patterns with slide symmetry (translation)	•	•					
Exploring patterns with spin or turn symmetry (rotation)	•	•					
Exploring patterns with mirror or flip symmetry (reflection)	•	•					
Identifying and extending patterns of slides, flips, and turns				•	•	•	

	K	1	2	3	4	5	6
Performing transformations of two- and three-dimensional figures						•	•
Identifying and drawing congruent lines, angles, and figures						•	•
Identifying planes of symmetry within a figure							•
II. NUMBER THEORY							
A. Writing Numerals							
Reading and writing numbers to 31	•						
Counting numbers to 100	•						
Reading and writing numbers to 100		•	•				
Reading and writing numbers through the thousands			•				
Reading and writing numbers through the hundred thousands			•	•			
Reading and writing numbers through the hundred millions					•		
Reading and writing numbers through the hundred billions						•	
Reading and writing numbers through the hundred trillions							•
Writing Roman numerals					•	•	•
Identifying integers						•	•
Identifying abundant, deficient, and perfect numbers							•
Exploring binary numbers							•
B. Rounding Numbers							
Rounding numbers to the nearest ten			•	•		•	•
Rounding numbers to the nearest hundred				•	•	•	•
Rounding numbers to the nearest thousand					•	•	•
Rounding numbers to the nearest ten thousand					•	•	•
Rounding numbers to the nearest hundred thousand					•	•	•
Rounding numbers to the nearest hundred million					•	•	•
Rounding decimals to the nearest whole number				•	•	•	•
Rounding decimals to the nearest tenth						•	•
Rounding decimals to the nearest hundredth						•	•
C. Ordinal Numbers							
Using ordinal names *first* through *fifth*	•						
Using ordinal names *first* through *tenth*		•	•	•	•		
Using ordinal names through *twentieth*			•	•	•		
Using ordinal names through *hundredth*				•	•		
Using a calendar to review ordinal numbers	•	•	•		•		
III. PLACE VALUE							
A. Number Identification							
Reading and writing numbers to the tens place	•	•	•				
Reading and writing numbers to the hundreds place		•	•				
Exploring the number *100*	•	•					

	K	1	2	3	4	5	6
Modeling 2-digit numbers	•						
Modeling 2- and 3-digit numbers		•	•				
Reading and writing numbers to the thousands place			•				
Modeling 4-digit numbers			•	•	•		
Exploring the number *1,000*			•				
Using expanded notation			•	•	•	•	•
Reading and writing numbers to the hundred thousands place				•	•		
Reading and writing numbers to the hundred millions place					•		
Reading and writing numbers to the hundred billions place						•	
Reading and writing numbers to the hundred trillions place							•
Reading and writing decimals to the tenths and hundredths place				•	•		
Reading and writing decimals to the thousandths place						•	
Reading and writing decimals to the hundred-thousandths place							•
B. Comparing Numbers							
Comparing number sets	•	•	•				
Comparing numbers up to 100		•	•				
Comparing numbers up to 1,000			•				
Comparing numbers to 10,000			•	•			
Comparing numbers to hundred millions					•		
Comparing numbers to hundred billions						•	
Comparing numbers to hundred trillions							•
Comparing decimals to the hundredths place				•	•		
Comparing decimals to the thousandths place						•	
Comparing decimals to the ten-thousandths place							•
Comparing integers						•	•
Finding equal sets	•	•					
Identifying numbers before or after a number, or between two given numbers	•	•	•	•	•	•	•
Using a number line to find numbers greater than or less than	•	•			•	•	•
Using a hundred chart to find numbers greater than or less than	•	•					
C. Ordering Numbers							
Ordering 1-digit numbers	•	•					
Ordering 2-digit numbers	•	•	•				
Ordering 3-digit numbers		•	•				
Ordering 4-digit numbers			•	•	•		
Ordering 5-digit numbers					•		
Ordering 6-digit numbers						•	
Ordering 13-digit numbers							•
Ordering decimals to the hundredths place				•	•		

	K	1	2	3	4	5	6
Ordering decimals to the thousandths place						•	
Ordering decimals to the ten-thousandths place							•
Ordering integers						•	•
IV. STATISTICS							
A. Graph Reading and Analysis							
Reading and interpreting bar graphs	•	•	•	•	•	•	•
Reading and interpreting pictographs	•	•	•	•	•	•	
Reading and interpreting tables		•	•	•	•	•	•
Reading and interpreting tally charts	•	•		•	•	•	•
Reading and interpreting line graphs				•	•	•	•
Reading and interpreting histograms						•	•
Reading and interpreting circle graphs					•	•	•
Reading and interpreting line plots						•	•
Reading and interpreting stem and leaf plots							•
Identifying factors that make graphs misleading; correcting graphs							•
B. Collecting and Recording Data							
Collecting data by conducting a survey				•	•	•	•
Collecting data by other methods					•	•	•
Recording information from an experiment	•	•	•	•	•	•	•
Recording information on a tally chart	•	•			•	•	•
C. Designing Graphs							
Designing bar graphs		•	•	•	•	•	•
Designing pictographs				•	•	•	
Designing line graphs				•	•	•	•
Designing histographs						•	•
Designing circle graphs					•	•	•
Selecting appropriate types of graphs for different data						•	•
D. Statistics							
Making line plots						•	•
Finding mean, median, and mode						•	•
Finding the range of given data						•	•
V. ADDITION							
A. Addition Basics							
Adding numbers with sums to 4	•	•					
Adding numbers with sums to 6	•	•					
Adding numbers with sums to 8	•	•					
Adding numbers with sums to 10	•	•	•				
Adding numbers with sums to 12		•	•				

	K	1	2	3	4	5	6
Adding numbers with sums to 14		•	•				
Adding numbers with sums to 18		•	•	•			
Using the counting-on strategy	•	•	•	•			
Using a number line for counting on	•	•	•				
Using the "doubles" strategy		•	•	•	•		
Using the "doubles + 1" strategy		•	•	•	•		
Using the "making a 10" strategy		•	•	•	•		
Using an addition block			•				
Using the Grouping (Associative) Property of Addition				•	•	•	•
Using the Order (Commutative) Property of Addition	•	•	•	•	•	•	•
Addition fact families for sums up to 10	•	•	•	•			
Using the Zero Property of Addition			•	•	•	•	•
Adding 3 or more addends	•	•	•	•	•	•	
Adding 2-digit numbers		•	•		•		
Adding money amounts to ninety-nine cents	•	•	•				
Adding 3-digit numbers			•	•	•		
Adding 4-digit numbers				•	•		
Checking addition by using subtraction			•				
Using addition facts to mentally add			•	•			
Estimating sums		•	•	•	•	•	•
B. Addition with Regrouping							
Learning to regroup 10 ones as one 10	•	•	•				
Adding a 1-digit number to a 2-digit number		•	•	•			
Adding 2-digit numbers, regrouping ones as tens		•	•	•			
Adding three 2-digit addends			•	•			
Adding cents or whole dollar figures			•				
Adding 3-digit numbers, regrouping ones as tens			•	•	•		
Adding 3-digit numbers, regrouping tens as hundreds			•	•	•		
Adding 3-digit numbers, regrouping ones and tens (2 regroupings)			•	•	•		
Adding 4-digit numbers with regrouping				•	•		
Adding 5-digit numbers with regrouping					•	•	
Adding 6-digit numbers with regrouping							•
Adding mixed dollar and cents amounts				•	•	•	•
C. Adding Fractions							
Adding fractions with common denominators				•	•	•	•
Adding unlike fractions					•	•	•
Adding mixed numbers					•	•	•
Adding mixed numbers with renaming						•	•

	K	1	2	3	4	5	6
Estimating fraction and mixed number sums						•	•
D. Adding Decimals							
Adding decimals through the hundredths				•	•	•	
Adding decimals through the thousandths						•	
Adding decimals through the ten-thousandths place							•
Estimating decimal sums				•	•	•	•
VI. SUBTRACTION							
A. Subtraction Basics							
Subtracting from numbers up to 6	•	•					
Subtracting from numbers up to 10	•	•	•				
Subtracting from numbers up to 12		•	•				
Subtracting from numbers up to 14		•	•				
Using a number line to subtract	•	•	•				
Using ten-frames to subtract numbers up to 10	•						
Using ten-frames to subtract numbers up to 18		•					
Using the "counting back" strategy to subtract	•	•	•	•			
Using the "doubles minus one" strategy			•				
Subtracting a number from itself, and subtracting zero	•	•	•				
Subtracting 2-digit numbers		•	•		•		
Subtracting 2-digit numbers using tens mats		•					
Subtracting 3-digit numbers			•		•		
Subtracting money amounts to ninety-nine cents	•	•	•				
Relating subtraction to addition by using fact families	•	•	•	•	•		
Using subtraction to check addition			•				
Using addition to check subtraction			•	•	•		
B. Subtraction with Regrouping							
Practicing regrouping tens as ones	•	•	•				
Subtracting a 1-digit number from a 2-digit number		•	•				
Subtracting 2-digit numbers, regrouping tens as needed		•	•	•	•		
Subtracting from a number having a zero in the ones place			•	•			
Subtracting across zeroes			•	•	•	•	
Subtracting 3-digit numbers, regrouping tens as ones			•	•	•		
Subtracting 3-digit numbers, regrouping hundreds as tens			•	•	•		
Subtracting 3-digit numbers, regrouping hundreds and tens			•	•	•		
Subtracting 4-digit numbers, more than one regrouping				•	•		
Subtracting 5-digit numbers, more than one regrouping					•	•	
Subtracting 6-digit numbers with regrouping							•
Estimating differences			•	•	•	•	•

	K	1	2	3	4	5	6
Subtracting money amounts			•	•	•	•	•
C. Subtracting Fractions							
Subtracting fractions with like denominators				•	•	•	•
Subtracting fractions with unlike denominators					•	•	•
Subtracting mixed numbers					•	•	•
Subtracting fractions from a whole number with renaming						•	•
Subtracting mixed numbers with renaming						•	•
Estimating differences in fractions and mixed numbers						•	•
D. Subtracting Decimals							
Subtracting decimals through the hundredths				•	•	•	
Subtracting decimals through the thousandths place						•	
Subtracting decimals through the ten-thousandths place							•
Estimating decimal differences					•	•	•
VII. MULTIPLICATION							
A. Multiplication Basics							
Exploring multiplication by making groups of equal size		•	•				
Exploring the relationship between multiplication and repeated addition		•	•				
Relating repeated addition and/or skip-counting to multiplication			•	•	•		
Multiplying single-digit numbers by 2			•	•	•		
Multiplying single-digit numbers by 3			•	•	•		
Multiplying single-digit numbers by 4			•	•	•		
Multiplying single-digit numbers by 5			•	•	•		
Multiplying single-digit numbers by 6				•	•		
Multiplying single-digit numbers by 7				•	•		
Multiplying single-digit numbers by 8				•	•		
Multiplying single-digit numbers by 9				•	•		
Multiplying single-digit numbers by 10			•	•	•		
Multiplying by 11					•		
Multiplying by 12					•		
Using a number line to find a product			•	•			
Making arrays to model multiplication facts			•	•	•		
Using the Order (Commutative) Property of Multiplication			•	•	•	•	•
Using the Zero Property of Multiplication				•	•	•	•
Using the Multiplication Identity Property of One				•	•	•	•
Using the Grouping (Associative) Property of Multiplication					•	•	•
Using the Distributive Property						•	•
Using a multiplication block to learn facts			•	•	•		

	K	1	2	3	4	5	6
Relating multiplication and division facts			•	•	•		
Multiplying by tens					•	•	•
Multiplying by hundreds				•	•	•	•
Multiplying by thousands					•	•	•
Multiplying by ten thousands							•
Multiplying 2-digit numbers without regrouping				•	•		
Multiplying 3-digit numbers without regrouping				•	•		
Factoring; distinguishing between prime and composite numbers					•	•	•
Determining the greatest common factor						•	•
Exploring exponents					•	•	•
B. Multiplication with Regrouping							
Multiplying 2-digit numbers by single-digit numbers, regrouping ones				•	•		
Multiplying 2-digit numbers by single-digit numbers, regrouping ones and tens				•	•		
Estimating products				•	•	•	
Multiplying 3-digit numbers by single-digit numbers, regrouping ones				•	•		
Multiplying 3-digit numbers by single-digit numbers, regrouping ones and tens				•	•		
Multiplying 3-digit numbers by single-digit numbers, regrouping ones, tens, and hundreds				•	•	•	
Multiplying 4-digit numbers by single-digit numbers, regrouping as needed					•		
Multiplying 4-digit money amounts by a single-digit number					•	•	
Multiplying larger numbers by single-digit numbers						•	•
C. Multi-Digit Multiplication							
Estimating products of 2- and 3-digit factors					•	•	•
Estimating products of 3- and 4-digit factors					•	•	•
Multiplying 2-digit factors by multiples of 10					•		
Multiplying two 2-digit factors					•	•	•
Multiplying 3-digit numbers by 2-digit numbers					•	•	•
Multiplying money amounts up to $10.00 by 2-digit factors					•	•	•
Multiplying 2-, 3-, and 4-digit numbers by 3-digit factors						•	•
Using lattice multiplication						•	
D. Multiplying Fractions							
Using multiplication to find equivalent fractions					•	•	•
Using multiplication to find fractional parts of whole numbers						•	•
Multiplying two fractions						•	•
Multiplying fractions with whole numbers						•	•

	K	1	2	3	4	5	6
Multiplying fractions with mixed numbers						•	•
Estimating products of fractions, whole numbers, and mixed numbers						•	•
E. Multiplying Decimals							
Estimating products by rounding factors						•	•
Multiplying decimal factors by whole numbers						•	•
Multiplying two decimal factors						•	•
Multiplying decimals with zeros in the product						•	•
Multiplying decimals by multiples of 10						•	•
VIII. DIVISION							
A. Division Basics							
Exploring sharing-type division		•	•				
Relate multiplication to division		•	•	•	•	•	•
Relating division to repeated subtraction			•	•			•
Using multiplication and division fact families				•	•		
Using 2 as a divisor				•	•		
Using 3 as a divisor				•	•		
Using 4 as a divisor				•	•		
Using 5 as a divisor				•	•		
Using 6 as a divisor				•	•		
Using 7 as a divisor				•	•		
Using 8 as a divisor				•	•		
Using 9 as a divisor				•	•		
Dividing with 1				•	•	•	•
Dividing with 0				•	•	•	•
Dividing by multiples of 10, 100, and 1,000				•	•	•	•
Using division facts to estimate quotients of unfamiliar division problems				•	•	•	•
B. Long Division							
Learning steps of division				•			
Dividing a 2-digit dividend by a 1-digit divisor; no remainders				•	•	•	
Estimating 2- and 3-digit quotients					•	•	•
Dividing up to 4-digit numbers by a 1-digit divisor with remainders				•	•	•	•
Dividing 5-digit numbers by a 1-digit divisor with remainders						•	•
Interpreting remainders				•	•	•	•
Finding averages				•	•	•	•
Dividing money amounts by a 1-digit divisor					•	•	
Rules of divisibility						•	•

	K	1	2	3	4	5	6
C. Multi-Digit Division							
Estimating quotients with 2-digit divisors						•	•
Correcting an estimated quotient					•	•	
Dividing up to 5-digit numbers by a 2-digit divisor						•	•
Dividing up to 5-digit numbers by a 3-digit divisor							•
Checking multi-digit division by multiplication							•
D. Dividing Fractions							
Exploring the division of fractions using objects and pictures						•	•
Dividing whole numbers by fractions						•	•
Dividing fractions by fractions						•	•
Dividing fractions and mixed numbers							•
Using division to simplify complex fractions							•
Estimating fraction quotients							•
Using division in the betweenness property							•
E. Dividing Decimals							
Dividing a decimal by a whole number						•	•
Mentally dividing a decimal by 10, 100, and 1,000						•	•
Dividing money amounts						•	•
Dividing whole numbers by decimals to the tenth, hundredth, and thousandth places							•
Dividing with a decimal divisor and decimal dividend							•
Estimating decimal quotients							•
IX. FRACTIONS							
A. Identifying Fractions							
Recognizing equal and non-equal parts	•	•	•				
Identifying one-half of wholes or sets	•	•	•	•			
Identifying thirds of wholes or sets		•	•	•			
Identifying fourths of wholes or sets		•	•	•			
Identifying fractional parts of a whole and a set	•	•	•	•	•	•	
Writing fractions for fractional parts		•	•	•	•	•	
Dividing wholes and sets into fractional parts	•	•	•	•	•	•	
Showing or drawing fractional parts of a whole or set	•	•	•	•	•	•	
Finding a fraction of a number					•	•	
B. Comparing Fractions							
Using models to compare fractions with like and unlike denominators			•	•	•	•	
Using a number line to compare and order fractions				•	•	•	
Comparing fractions with greater than, less than, and equal signs				•	•	•	•
Recognizing equal fractions			•	•	•	•	•

	K	1	2	3	4	5	6
Using models to make equivalent fractions				•	•	•	•
Using multiplication and division to make equivalent fractions				•	•	•	•
Writing a fraction in simplest terms					•	•	•
C. Mixed Numbers and Improper Fractions							
Identifying mixed numbers and whole numbers for fractional models				•	•	•	•
Writing mixed numbers or whole number for fractions				•	•	•	•
D. Adding Fractions							
Adding fractions with common denominators				•	•	•	•
Adding unlike fractions					•	•	•
Adding mixed numbers					•	•	•
Adding mixed numbers with renaming						•	•
Estimating fraction and mixed number sums						•	•
E. Subtracting Fractions							
Subtracting fractions with like denominators				•	•	•	•
Subtracting fractions with unlike denominators					•	•	•
Subtracting mixed numbers					•	•	•
Subtracting fractions from a whole number with renaming						•	•
Subtracting mixed numbers with renaming						•	•
Estimating differences in fractions and mixed numbers						•	•
F. Multiplying Fractions							
Using multiplication to find equivalent fractions					•	•	•
Using multiplication to find fractional parts of whole numbers						•	•
Multiplying two fractions						•	•
Multiplying fractions with mixed numbers						•	•
Estimating products of fractions, whole numbers, and mixed numbers						•	•
G. Dividing Fractions							
Exploring the division of fractions using objects and pictures						•	•
Dividing whole numbers by fractions						•	•
Dividing fractions by fractions						•	•
Dividing fractions and mixed numbers							•
Using division to simplify complex fractions							•
Estimating fraction quotients							•
Using division in the betweenness property							•
X. DECIMALS							
A. Identifying Decimals							
Recognizing equal parts		•	•				
Identifying parts of a whole and of a set		•	•				
Relating fraction concepts to decimals				•	•	•	

	K	1	2	3	4	5	6
Making models of decimals to the hundredths place				•	•		
Reading and writing decimals in the tenths place				•	•	•	•
Reading and writing decimals in the hundredths place				•	•	•	•
Reading and writing decimals greater than one				•	•	•	•
Exploring decimals in the thousandths place					•		
Reading and writing decimals in the thousandths place						•	•
Reading and writing decimals in the ten-thousandths place							•
B. Comparing Decimals							
Comparing and ordering decimals to the hundredths place				•	•		
Comparing and ordering decimals to the thousandths place						•	
Comparing and ordering decimals to the ten-thousandths place							•
Recognizing equivalent decimals; writing equal decimals through the hundredths place					•	•	•
Rounding decimals to the nearest whole number				•	•	•	
Rounding decimals to the nearest tenth or hundredth						•	
Rounding decimals through the hundred-thousandths place							•
C. Adding Decimals							
Adding decimals through the hundredths				•	•	•	
Adding decimals through the thousandths						•	
Adding decimals through the ten-thousandths place							•
Estimating decimal sums				•		•	•
D. Subtracting Decimals							
Subtracting decimals through the hundredths				•	•	•	
Subtracting decimals through the thousandths place						•	
Subtracting decimals through the ten-thousandths place							•
Estimating decimal differences						•	•
E. Multiplying Decimals							
Estimating products by rounding factors						•	
Multiplying decimal factors by whole numbers						•	•
Multiplying two decimal factors						•	•
Multiplying decimals with zeros in the product						•	•
Multiplying decimals by multiples of 10							•
F. Dividing Decimals							
Dividing a decimal by a whole number						•	•
Mentally dividing a decimal by 10, 100, and 1,000						•	•
Dividing money amounts						•	•
Dividing whole numbers by decimals to the tenth, hundredth, and thousandth places							•
Dividing with a decimal divisor and decimal dividend							•

	K	1	2	3	4	5	6
Estimating decimal quotients							•
XI. ALGEBRA							
A. Equations							
Writing number sentences	•	•	•	•	•	•	•
Finding missing addends	•	•	•	•	•	•	•
Finding a missing number in subtraction by using various strategies			•	•	•		•
Finding the missing factor				•	•	•	•
Solving for a variable in a number sentence				•		•	•
Understanding related addition and subtraction facts	•	•	•	•	•	•	•
Understanding related multiplication and division facts			•	•	•	•	•
Checking computation by using the inverse operation			•	•	•	•	•
Solving equations using inverse operations							•
B. Properties							
Using the Order (Commutative) Property of Addition	•	•	•	•	•	•	•
Using the Order (Commutative) Property of Multiplicaton				•	•	•	•
Using the Zero Property of Addition			•	•	•	•	•
Using the Zero Property of Multiplicaton				•	•	•	•
Using the Multiplicaton Property of One				•	•	•	•
Using the Grouping (Associative) Property of Addition				•	•	•	•
Using the Grouping (Associative) Property of Multiplication					•	•	•
Using the Distributive Property						•	•
C. Factoring							
Distinguishing between a prime and composite number					•	•	•
Prime factorization						•	•
Finding and listing factors of composite numbers					•	•	•
Finding the greatest common factor						•	•
D. Coordinates							
Using grid coordinates		•					
Graphing ordered pairs				•		•	•
Locating a point using ordered pairs				•		•	•
Using a four-quadrant grid							•
E. Formulas							
Using the formula for area					•	•	•
Using the formula for area of rectangles and squares						•	
Using the formula for area of quadrilaterals							•
Using the formula for area of triangles						•	•
Applying the area formula to irregular figures						•	•
Using the formula for area of circles							•

	K	1	2	3	4	5	6
Using the formula for perimeter					•	•	•
Using the formula for perimeter of a square and rectangle					•	•	•
Using the formula for circumference						•	•
Using the formula for volume					•	•	•
Using the formula for volume of a triangular prism							•
Using the formula for volume of a cube and rectangular prism						•	•
Using the formula for volume of a cylinder							•
Calculating interest						•	•
F. Exponents							
Exploring exponents						•	•
G. Integers							
Exploring integers						•	•
Comparing and ordering integers						•	•
Using a number line to add and subtract integers						•	•
Adding and subtracting integers (without number line)							•
Multiplying and dividing integers							•
H. Ratio and Proportions							
Solving proportions						•	•
Using cross products						•	•
Finding rate and unit rate							•
XII. GEOMETRY							
A. Symmetry							
Recognizing slide symmetry (translation)	•	•		•	•	•	•
Recognizing spin or turn symmetry (rotation)	•	•		•	•	•	•
Recognizing mirror or flip symmetry (reflection)	•	•		•	•	•	•
Modeling slides, flips, and turns				•	•	•	•
Identifying lines of symmetry	•	•	•	•	•	•	•
Identifying planes of symmetry							•
B. Shapes							
Identifying solid shapes	•	•	•	•	•	•	•
Identifying faces, edges, and vertices of solid figures				•	•	•	•
Identifying polyhedrons						•	•
Identifying prisms			•		•	•	•
Identifying plane shapes	•	•	•	•	•	•	•
Distinguishing between similar solid and plane shapes (e.g., sphere and circle)	•	•	•	•			
Distinguishing between squares and rectangles	•	•	•	•	•		
Classifying quadrilaterals (parallelograms, trapezoids, rhombuses, rectangles, squares)			•		•	•	•

	K	1	2	3	4	5	6
Identifying triangles by the length of sides and type of angles					•	•	•
Identifying the center, radius, and diameter of circles					•	•	•
Identifying central angles							•
Identifying chords						•	•
Identifying concentric circles							•
Constructing circles by using a compass					•	•	•
Identifying polygons by number of sides					•	•	•
Identifying regular polygons						•	•
Constructing polygons by using a compass							•
Drawing plane shapes	•	•	•	•			
Distinguishing between open and closed figures		•		•	•		
Identifying congruent figures				•	•	•	•
Identifying similar figures					•	•	•
Using the geoboard	•	•	•	•	•		
Using pentominoes			•			•	
Exploring tessellations					•		
C. Angles							
Recognizing acute, obtuse, and right angles			•	•	•	•	•
Identifying straight angles						•	•
Identifying and naming angles				•	•	•	•
Identifying reflex angles							•
Measuring and constructing angles with a protractor						•	•
Identifying complementary and supplementary angles							•
D. Lines and Line Segments							
Identifying points					•	•	•
Identifying lines and line segments				•	•	•	•
Identifying rays					•	•	•
Naming points, lines, line segments, and rays					•	•	•
Identifying parallel and intersecting lines				•	•	•	•
Identifying perpendicular lines					•	•	•
Identifying skew lines							•
Constructing congruent line segments							•
Bisecting line segments							•
Identifying planes						•	•
E. Coordinates							
Locating ordered pairs				•	•	•	•
F. Measurement of Geometric Figures							
Finding area by counting square units		•		•	•		

	K	1	2	3	4	5	6
Finding the area of rectangles and squares				•	•	•	•
Finding the area of quadrilaterals							•
Finding the area of triangles						•	•
Finding the area of irregular figures						•	•
Finding surface area						•	•
Finding the perimeter of polygons				•	•	•	•
Finding circumference						•	•
Relating circumference and diameter as *pi*						•	•
Finding the area of a circle							•
Finding volume by counting cubic units					•	•	
Finding volume of rectangular prism					•	•	•
Finding volume of triangular prism and cylinders							•
XIII. PROBLEM SOLVING							
A. Data Sources							
Using information from pictures	•	•	•				
Using a code		•	•				
Using a calendar to solve problems	•	•	•	•	•	•	
Using information from a line plot						•	•
Using information from a menu					•		
Using information from a recipe				•	•	•	•
Using information from a nutrition label							•
Using a stem and leaf plot							•
Using information from tables and graphs	•	•	•	•	•	•	•
B. Skills and Strategies							
Acting out a problem	•	•			•		
Analyzing the data	•	•	•	•	•	•	•
Choosing the best strategy for a given problem					•	•	•
Choosing the correct operation	•	•	•	•	•	•	•
Choosing mental math, pencil and paper, or calculator			•	•	•		•
Conducting an experiment; drawing conclusions	•	•	•	•	•	•	•
Determining the best measurement tool for specific situations		•	•				
Determining reasonable answers	•	•	•	•	•	•	•
Drawing a picture, diagram, or model	•	•	•	•	•	•	•
Estimating and verifying measurements		•	•	•	•	•	•
Looking for a pattern	•	•	•	•	•	•	•
Making a graph	•	•	•	•	•	•	•
Making a systematic list				•	•	•	•
Making a table	•	•	•	•	•	•	•

	K	1	2	3	4	5	6
Recognizing that there is insufficient information		•			•	•	
Recognizing unnecessary information		•			•	•	
Solving analogies							•
Solving two-step word problems			•	•	•	•	•
Solving multi-step word problems					•	•	•
Solving problems with more than one answer				•	•	•	•
Using a calculator			•	•	•	•	•
Using formulas					•	•	•
Using inverse operations			•			•	•
Using known equations						•	•
Using logical reasoning			•			•	•
Using variables to solve for missing number				•		•	•
Using the STAR Problem Solving Path		•	•				
Using the Pathway to Problem Solving				•	•		
Using the Problem-Solving Guide						•	•
Using the "try and check" method					•	•	
Working backward				•	•	•	•
Writing an equation					•	•	•
Writing a math sentence or story using information from pictures	•	•	•	•			
C. Computational Skills Application							
Estimating sums		•	•	•	•	•	•
Estimating differences			•	•	•	•	•
Addition	•	•	•	•	•	•	•
Subtraction	•	•	•	•	•	•	•
Addition and subtraction of money	•		•	•	•	•	•
Estimating products				•	•	•	•
Estimating quotients				•	•	•	•
Multiplication			•	•	•	•	•
Division			•	•	•	•	•
Multiplication and division of money				•	•	•	•
Division, interpreting remainders				•	•	•	•
Fractions			•	•	•	•	•
Decimals				•	•	•	•
Percents						•	•
Checking and correcting computation (inverse operations)			•	•	•	•	•
Elapsed time	•	•	•	•	•	•	•
Adding and subtracting hours and minutes						•	•

	K	1	2	3	4	5	6
D. Map Skills							
Using a compass and directional words		•					
Identifying locations on a map		•		•	•	•	•
Following directions on a map	•	•				•	
Determining the best route				•	•	•	•
Calculating mileage					•	•	•
Using a scale to calculate mileage						•	•
Using data from scale drawings						•	•
Using a map to calculate area and perimeter							•
XIV. PROBABILITY							
A. Probability Basics							
Relating favorable outcomes to the number of possible outcomes		•		•	•	•	•
Making predictions	•	•		•	•	•	•
Identifying outcomes as certain, probable, or impossible				•	•	•	•
Identifying outcomes as less likely, more likely, or equally likely					•	•	•
Writing probability as a fraction				•	•	•	•
Using proportions in probability				•	•	•	•
Writing probability as a percent							•
B. Advanced Probability							
Distinguishing between experimental probability and mathematical probability							•
Representing possible outcomes with a tree diagram or sample space							•
Arranging items when order matters (permutations) and when order does not matter (combinations)							•
Recording outcomes on a line plot							•
Determining probability of compound events							•
XV. TECHNOLOGY							
A. Keyboard Skills							
Recognizing letter positions on computer keyboards		•		•			
Recognizing number and operational keys on calculators		•	•	•			
Performing key sequences					•	•	•
Using the percent key						•	•
Using the square root key							•
Using the square (exponent) key							•
Using the integer sign change key							•
B. Problem Solving							
Distinguishing problems best solved by calculator, pencil and paper, or mental math			•	•			
Using the calculator to check and correct computation		•				•	

	K	1	2	3	4	5	6
Using the calculator for advanced addition and subtraction		•	•		•	•	•
Using the calculator for addition and subtraction of money			•		•	•	•
Using the calculator for multiplication					•	•	•
Using the calculator for division					•	•	•
Calculating average or mean					•	•	•
Calculating range						•	•
Finding decimal equivalents for fractions						•	•
Finding percents						•	•
Using a calculator for completing formulas							•
Using calculator computation to design tables and graphs						•	
C. Patterns							
Finding patterns by repeated multiplication (constant multipliers)					•	•	•
Distinguishing between terminating and repeating decimals							•
Finding multiples of larger numbers						•	•
Patterns of equations							•
Using calculators to square numbers					•		
XVI. MEASUREMENT							
A. Linear Measurement							
Comparing lengths of everyday objects (without measuring)	•	•			•		
Choosing the appropriate unit of length			•	•	•	•	•
Measuring length with nonstandard units	•	•		•	•		
Measuring by whole inches	•	•	•	•	•	•	
Measuring to the nearest half inch				•	•	•	
Measuring to the nearest quarter inch					•	•	
Measuring to the nearest eighth inch						•	
Measuring to the nearest sixteenth inch						•	
Estimating and measuring by whole feet	•	•	•	•	•		
Estimating and measuring by whole yards			•	•	•		
Estimating length by miles				•			
Converting measurements from one customary unit to another					•	•	•
Adding and subtracting mixed customary units of linear measurement							•
Estimating and measuring by millimeters					•		
Estimating and measuring by centimeters		•	•	•	•		
Estimating and measuring by decimeters			•		•		
Estimating and measuring by meters			•	•	•		
Estimating length by meters or kilometers				•	•		
Converting measurements from one metric unit to another					•	•	•

	K	1	2	3	4	5	6
B. Capacity							
Comparing volume of everyday objects	•	•	•		•		
Comparing different units of capacity (cups, pints, quarts)		•	•	•	•		
Choosing the appropriate unit of capacity			•	•	•	•	•
Estimating and measuring by cups, pints, quarts, and gallons		•	•	•	•		
Converting measurements from one customary unit to another					•	•	•
Adding and subtracting mixed customary units of capacity							•
Comparing other units of capacity to the liter		•		•	•		
Estimating and measuring by liters				•	•	•	
Estimating and measuring by milliliters					•	•	
Converting measurements from one metric unit of capacity to another					•	•	•
C. Weight and Mass							
Comparing the weight of everyday objects to one pound	•	•	•	•	•		
Choosing the appropriate unit of weight or mass			•	•	•	•	•
Estimating and measuring weight in ounces and pounds		•	•	•	•		
Estimating weight in tons					•		
Converting measurements from one customary unit of weight to another					•	•	•
Adding and subtracting mixed customary units of weight							•
Estimating and measuring mass in grams and kilograms		•	•	•	•	•	
Converting measurements from one metric unit of mass to another					•	•	•
Distinguishing between mass and weight							•
D. Temperature							
Estimating, measuring, and recording temperature using a Fahrenheit thermometer	•	•	•	•	•	•	•
Estimating, measuring, and recording temperature using a Celsius thermometer				•	•	•	•
E. Measurement Formulas							
Finding area by counting square units		•		•	•		
Using the formula for finding area of rectangles and squares					•	•	•
Using the formula for finding area of parallelograms and trapezoids							•
Finding the area of a triangle						•	•
Finding the surface area of a prism						•	•
Finding the surface area of a pyramid							•
Finding the surface area of a cylinder							•
Finding perimeter by adding the length of sides				•	•	•	•
Using the formula for finding perimeter of rectangles and squares					•	•	•
Finding the circumference of a circle						•	•
Finding volume by counting cubic units				•	•	•	

	K	1	2	3	4	5	6
Using the formula for finding volume of solid figures					•	•	•
F. Maps and Scale Drawings							
Finding and calculating distances					•	•	•
XVII. TIME							
A. Using the calendar							
Relating activities to months and seasons	•	•	•				
Reading the calendar	•	•	•	•	•		
Completing a calendar	•	•	•				
Naming the date, weeks before or after a given date			•	•	•		
Finding elapsed time on a calendar			•		•		
B. Telling and Writing Time							
Telling time to the hour	•	•					
Telling time to the half hour	•	•	•	•			
Telling time to the quarter hour		•	•	•			
Telling time in 5-minute intervals			•	•			
Telling time to the minute				•	•		
Telling time by minutes before and after the hour				•			
Distinguishing between A.M. and P.M.			•				
Writing time in digital notation			•				
C. Comparing Time							
Comparing durations of time (activities that take more or less time)		•					
Comparing durations of elapsed time					•		
Choosing an appropriate unit of time					•		
D. Calculating Time							
Calculating elapsed time (15-minute intervals)			•				
Calculating elapsed time (whole hour intervals)		•	•				
Calculating elapsed time (hours and minute intervals)			•	•	•	•	•
Stating an end time for given elapsed time		•	•	•	•	•	•
Reading a schedule	•	•	•	•	•		
Organizing information on a schedule chart				•			
Calculating time in other time zones					•	•	
Calculating elapsed time between time zones						•	
Adding and subtracting hours and minutes						•	•
Adding and subtracting hours, minutes, and seconds						•	•
XVIII. MONEY							
A. Identifying U.S. Currency							
Recognizing and counting pennies, nickels, and dimes	•	•	•	•			
Recognizing and counting quarters	•	•	•	•			

	K	1	2	3	4	5	6
Recognizing one dollar and identifying amounts equal to one dollar	•	•	•	•			
Recognizing and counting half-dollars			•	•			
Comparing money amounts		•	•	•			
Identifying equivalent groups of coins		•	•				
Identifying equivalent groups of coins and/or bills			•	•			
Rounding money amounts to the nearest dollar or ten dollars					•	•	•
Exploring the symbols and history of the U.S. dollar bill					•		
B. Calculating Money Amounts							
Adding and subtracting up to ten cents	•	•					
Adding and subtracting up to one dollar		•	•				
Adding mixed dollar and cent amounts		•	•	•	•	•	•
Subtracting mixed dollar and cent amounts			•	•	•	•	•
Estimating a sum or difference by rounding to the nearest whole dollar				•	•	•	•
Estimating a sum or difference by rounding to the nearest ten dollars						•	•
Multiplying 4-digit money amounts by 1-digit multiplier					•	•	•
Multiplying money amounts by 2-digit multipliers					•	•	•
Multiplying money amounts by other decimals						•	•
Dividing money amounts by 1-digit divisors					•	•	•
Dividing money amounts by 2-digit divisors						•	•
Dividing money amounts by other decimals							•
C. Everyday Application							
Making buying decisions	•	•	•	•	•	•	•
Making change		•	•	•	•	•	•
Designing a budget					•		•
Balancing a checkbook							•
Calculating taxes and discounts						•	•
Calculating interest						•	•
XIX. RATIO, PROPORTION, AND PERCENT							
A. Ratio							
Identifying fractions	•	•	•	•	•	•	
Writing fractions	•	•	•	•	•	•	•
Comparing fractions			•	•	•	•	•
Relating fractions and decimals				•	•	•	•
Defining ratio					•	•	•
Expressing ratio as a fraction, decimal, or percent					•	•	•
Writing ratios for given situations					•	•	•
Distinguishing between rate and ratio							•

	K	1	2	3	4	5	6
Calculating unit rate							•
B. Proportion							
Writing equivalent fractions using models				•	•	•	
Writing equivalent fractions by multiplying and dividing				•	•	•	•
Writing equivalent ratios, completing ratio tables						•	•
Defining and recognizing proportions						•	•
Solving proportions						•	•
Using proportions to solve problems						•	•
C. Percent							
Relating fractions and decimals to percent					•	•	•
Relating ratio to percent					•	•	•
Converting fractions with denominators of 100 to percents					•	•	
Converting fractions to percent, and percent to fractions						•	•
Writing decimals as percent, and percents as decimals						•	•
Using mental math to find percent based on multiples of 10						•	•
Estimating percent by rounding						•	•
Finding percent of a number						•	•
Finding what percent one number is of another							•
Writing and solving equations involving percent							•
Using percent skills in everyday applications						•	•


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