

Content Area: Math  
Grade Level: 4th Grade  
Revised: March 2016

### **Standards for Mathematical Practice**

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

### **Operations and Algebraic Thinking**

1. Interpret a multiplication equation as a comparison.
  - Unit 4: Equations and Word Problems
2. Multiply or divide to solve word problems involving multiplicative comparison
  - Unit 4: Equations and Word Problems
3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations.
  - Unit 1: Place Value and Multidigit Addition and Subtraction
  - Unit 2: Multiplication with Whole Numbers
  - Unit 3: Division with Whole Numbers
  - Unit 4: Equations and Word Problems
4. Find all factor pairs for a whole number in the range 1-100.
  - Unit 4: Equations and Word Problems
5. Generate a number or shape pattern that follows a given rule.
  - Unit 4: Equations and Word Problems
  - Unit 8: Geometry

### **Number & Operations in Base Ten**

1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
  - Unit 1: Place Value and Multidigit Addition and Subtraction
  - Unit 2: Multiplication with Whole Numbers
2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.
  - Unit 1: Place Value and Multidigit Addition and Subtraction
  - Unit 2: Multiplication with Whole Numbers
3. Use place value understanding to round multi-digit whole numbers to any place.
  - Unit 1: Place Value and Multidigit Addition and Subtraction
  - Unit 2: Multiplication with Whole Numbers
  - Unit 3: Division with Whole Numbers
4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.
  - Unit 1: Place Value and Multidigit Addition and Subtraction
  - Unit 4: Equations and Word Problems

5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations.
  - Unit 2: Multiplication with Whole Numbers
  - Unit 4: Equations and Word Problems
6. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
  - Unit 2: Multiplication with Whole Numbers
  - Unit 4: Equations and Word Problems
7. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.
  - Unit 3: Division with Whole Numbers
  - Unit 4: Equations and Word Problems

### **Number & Operations - Fractions**

1. Explain why a fraction  $a/b$  is equivalent to a fraction  $(n \times a)/(n \times b)$  by using visual fraction models.
  - Unit 7: Fractions and Decimals
2. Compare two fractions with different numerators and different denominators.
  - Unit 6: Fraction Concepts and Operations
  - Unit 7: Fractions and Decimals
3. Understand a fraction  $a/b$  with  $a > 1$  as a sum of fractions  $1/b$ .
  - Unit 6: Fraction Concepts and Operations
4. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
  - Unit 6: Fraction Concepts and Operations
5. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
  - Unit 6: Fraction Concepts and Operations
6. Understand a fraction  $a/b$  as a multiple of  $1/b$ .
  - Unit 6: Fraction Concepts and Operations
7. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.
  - Unit 7: Fractions and Decimals
8. Use decimal notation for fractions with denominators 10 or 100.
  - Unit 7: Fractions and Decimals
9. Compare two decimals to hundredths by reasoning about their size.
  - Unit 7: Fractions and Decimals
10. Recognize that comparisons are valid only when the two decimals refer to the same whole.
  - Unit 7: Fractions and Decimals

### **Measurement & Data**

1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.
  - Unit 5: Measurement
2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.
  - Unit 1: Place Value and Multidigit Addition and Subtraction
  - Unit 2: Multiplication with Whole Numbers
  - Unit 4: Equations and Word Problems

- Unit 5: Measurement
  - Unit 6: Fraction Concepts and Operations
  - Unit 7: Fractions and Decimals
3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
    - Unit 5: Measurement
  4. Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ).
    - Unit 5: Measurement
    - Unit 6: Fraction Concepts and Operations
    - Unit 7: Fractions and Decimals
  5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.
    - Unit 8: Geometry
  6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
    - Unit 8: Geometry
  7. Recognize angle measure as additive.
    - Unit 8: Geometry

### **Geometry**

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
  - Unit 8: Geometry
2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.
  - Unit 8: Geometry
3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts.
  - Unit 8: Geometry