Missouri Mathematics

Grade 4

Adopted 2016

Number Sense and Operations in Base Ten

A. Use place value understanding and properties of operations to perform multi-digit arithmetic with numbers up to one million. 4.NBT.A

1. Round multi-digit whole numbers to any place. 4.NBT.A.1
2. Read, write and identify multi-digit whole numbers up to one million using number names, base ten numerals and expanded form. 4.NBT.A.2
3. Compare two multi-digit numbers using the symbols >, = or <, and justify the solution. 4.NBT.A.3
4. Understand that in a multi-digit whole number, a digit represents 10 times what it would represents in the place to its right. 4.NBT.A.4
5. Demonstrate fluency with addition and subtraction of whole numbers. 4.NBT.A.5
6. Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution. 4.NBT.A.6
7. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, and justify the solution. 4.NBT.A.7

Number Sense and Operations in Fractions

A. Extend understanding of fraction equivalence and ordering. 4.NF.A

1. Explain and/or illustrate why two fractions are equivalent. 4.NF.A.1
2. Recognize and generate equivalent fractions. 4.NF.A.2
3. Compare two fractions using the symbols >, = or <, and justify the solution. 4.NF.A.3

B. Extend understanding of operations on whole numbers to fraction operations. 4.NF.B

4. Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole. 4.NF.B.4
5. Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification. 4.NF.B.5
6. Solve problems involving adding and subtracting fractions and mixed numbers with like denominators. 4.NF.B.6
7. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. 4.NF.B.7
8. Solve problems involving multiplication of a fraction by a whole number. 4.NF.B.8

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C. Understand decimal notation for fractions, and compare decimal fractions. 4.NF.C

9. Use decimal notation for fractions with denominators of 10 or 100. 4.NF.C.9
10. Understand that fractions and decimals are equivalent representations of the same quantity. 4.NF.C.10
11. Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form. 4.NF.C.11
12. Compare two decimals to the hundredths place using the symbols >, = or <, and justify the solution. 4.NF.C.12

Relationships and Algebraic Thinking

A. Use the four operations with whole numbers to solve problems. 4.RA.A

1. Multiply or divide to solve problems involving a multiplicative comparison. 4.RA.A.1
2. Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer. 4.RA.A.2
3. Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution. 4.RA.A.3

B. Work with factors and multiples. 4.RA.B

4. Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number. 4.RA.B.4
5. Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100. 4.RA.B.5

C. Generate and analyze patterns. 4.RA.C

6. Generate a number pattern that follows a given rule. 4.RA.C.6
7. Use words or mathematical symbols to express a rule for a given pattern. 4.RA.C.7

Geometry and Measurement

A. Classify 2-dimensional shapes by properties of their lines and angles. 4.GM.A

1. Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines. 4.GM.A.1
2. Classify two-dimensional shapes by their sides and/or angles. 4.GM.A.2
3. Construct lines of symmetry for a two-dimensional figure. 4.GM.A.3

B. Understand the concepts of angle and measure angles. 4.GM.B

4. Identify and estimate angles and their measure. 4.GM.B.4
5. Draw and measure angles in whole-number degrees using a protractor. 4.GM.B.5

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Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. 4.GM.C

6. Know relative sizes of measurement units within one system of units. a. Convert measurements in a larger unit in terms of a smaller unit. 4.GM.C.6
7. Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money. 4.GM.C.7
8. Apply the area and perimeter formulas for rectangles to solve problems. 4.GM.C.8

Data and Statistics

A. Represent and analyze data. 4.DS.A

1. Create a frequency table and/or line plot to display measurement data. 4.DS.A.1
2. Solve problems involving addition and subtraction by using information presented in a data display. 4.DS.A.2
3. Analyze the data in a frequency table, line plot, bar graph or picture graph. 4.DS.A.3