Oklahoma Mathematics

Grade 5

Adopted 2022

Numbers & Operations

1. **Read, write, represent, and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.** 5.N.1
    1. Represent decimal fractions (e.g., 1/10, 1/100) using a variety of models (e.g., 10 by 10 grids, base-ten blocks, meter stick) and show the rational number relationships among fractions, decimals and whole numbers. 5.N.1.1
    2. Read, write, and represent decimals using place value to describe decimal numbers including fractional numbers as small as thousandths and whole numbers up to seven digits. 5.N.1.2
    3. Compare and order decimals and fractions, including mixed numbers and fractions less than one, and locate on a number line. 5.N.1.3
    4. Recognize and generate equivalent terminating decimals, fractions, mixed numbers, and fractions in various models. 5.N.1.4

2. **Divide multi-digit numbers and solve real-world and mathematical problems using arithmetic.** 5.N.2
    1. Estimate solutions to division problems to assess the reasonableness of results. 5.N.2.1
    2. Divide multi-digit numbers, by one- and two-digit divisors, based on knowledge of place value, including but not limited to standard algorithms. 5.N.2.2
    3. Recognize that remainders can be represented in a variety of ways, including a whole number, fraction, or decimal. Determine the most meaningful form of a remainder based on the context of the problem. 5.N.2.3
    4. Construct models to solve multi-digit whole number problems requiring addition, subtraction, multiplication, and division using various representations, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. 5.N.2.4

3. **Add and subtract fractions with like and unlike denominators, mixed numbers, and decimals to solve real-world and mathematical problems.** 5.N.3
    1. Estimate sums and differences of fractions with like and unlike denominators, mixed numbers, and decimals to assess the reasonableness of the results. 5.N.3.1
    2. Illustrate addition and subtraction of fractions with like and unlike denominators, mixed numbers, and decimals using a variety of mathematical models (e.g., fraction strips, area models, number lines, fraction rods). 5.N.3.2

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3. Add and subtract fractions with like and unlike denominators, mixed numbers, and decimals, involving money, measurement, geometry, and data. Use various models and efficient strategies, including but not limited to standard algorithms. 5.N.3.3
4. Apply mental math and knowledge of place value (no written computations) to find 0.1 more or 0.1 less than a number, 0.01 more or 0.01 less than a number, and 0.001 more or 0.001 less than a number. 5.N.3.4

Algebraic Reasoning & Algebra

1. **Describe and graph patterns of change created through numerical patterns.** 5.A.1
    1. Use tables and rules with up to two operations to describe patterns of change and make predictions and generalizations about various mathematical situations. 5.A.1.1
    2. Use a rule or table to represent ordered pairs of whole numbers and graph these ordered pairs on a coordinate plane, identifying the origin and axes in relation to the coordinates. 5.A.1.2
2. **Understand and interpret expressions, equations, and inequalities involving variables and whole numbers, and use them to represent and evaluate real-world and mathematical problems.** 5.A.2
    1. Generate equivalent numerical expressions and solve problems using number sense involving whole numbers by applying the commutative property, associative property, distributive property, and order of operations (excluding exponents). 5.A.2.1
    2. Determine whether an equation or inequality involving a variable is true or false for a given value of the variable. 5.A.2.2
    3. Evaluate expressions involving variables when values for the variables are given. 5.A.2.3

Geometry & Measurement

1. **Describe, identify, classify, and construct two- and three-dimensional figures using their geometric attributes.** 5.GM.1
    1. Describe, identify, classify, and construct triangles (equilateral, right, scalene, isosceles) by their attributes using various mathematical models. 5.GM.1.1
    2. Describe, identify, and classify three-dimensional figures (cubes, rectangular prisms, and pyramids) and their attributes (number of edges, faces, vertices, shapes of faces), given various mathematical models. 5.GM.1.2
    3. Recognize and draw a net for a three-dimensional figure (cube, rectangular prism, pyramid). 5.GM.1.3
2. **Determine volume using the object's dimensions. Compare and analyze rectangular prisms with equivalent volume to recognize their different dimensions.** 5.GM.2
    1. Determine the volume of rectangular prisms by the number of unit cubes (n) used to construct the shape and by the product of the dimensions of the prism $a \cdot b \cdot c = n$. Understand rectangular prisms of different dimensions (p, q, and r) can have the same volume if $a \cdot b \cdot c = p \cdot q \cdot r = n$ 5.GM.2.1

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2. Estimate the perimeter of polygons and create arguments for reasonable perimeter values of shapes that may include curves. 5.GM.2.2

3. **Understand angle, length, weight, and capacity as measurable attributes of real-world and mathematical objects, using various tools to measure them. Solve real-world problems of length.** 5.GM.3

    1. Measure and compare angles according to size using various tools. 5.GM.3.1
    2. Measure the length of an object to the nearest whole centimeter or up to 1/16 inch using an appropriate instrument. 5.GM.3.2
    3. Apply the relationship between inches, feet, and yards to measure, convert, and compare objects to solve problems. 5.GM.3.3
    4. Apply the relationship between millimeters, centimeters, and meters to measure, convert, and compare objects to solve problems. 5.GM.3.4
    5. Estimate lengths and geometric measurements to the nearest whole unit, using benchmarks in customary and metric measurement systems. 5.GM.3.5

Data & Probability

1. **Create and analyze data to find the range and measures of central tendency (mean, median, mode).** 5.D.1

    1. Find the measures of central tendency (i.e., mean, median, mode) and range of a set of data. Understand that the mean is a "leveling out" or central balance point of the data. 5.D.1.1
    2. Create and analyze line and double-bar graphs with increments of whole numbers, fractions, and decimals. 5.D.1.2