Arkansas Mathematics Standards

Grade 4

Adopted 2023

Grade 4

Number & Place Value

Place Value

A. Understand the base ten place value system. 4.NPV.A

1. Recognize that a digit in a given place represents ten times what it represents in the place to its right. 4.NPV.1
2. Read and write whole numbers up to 1,000,000 using base ten numerals, word form, and a variety of expanded forms. 4.NPV.2
3. Use place value understanding to round five-digit and six-digit whole numbers to any place. 4.NPV.3

Comparison

B. Use place value understanding to compare numbers. 4.NPV.B

4. Compare two five-digit whole numbers and six-digit whole numbers, using symbols (<, =, >) to record the results of comparisons. 4.NPV.4
5. Compare two fractions with different numerators and different denominators using symbols (<, =, >) to record the results of comparisons (e.g., by creating common denominators or numerators or by comparing to a benchmark of 0, ½, 1). 4.NPV.5
6. Compare two decimals to the hundredths place, using symbols (<, =, >) to record the results of comparisons. 4.NPV.6

Fraction Foundations

C. Develop a conceptual understanding of fractions. 4.NPV.C

7. Decompose fractions, including fractions greater than one and mixed numbers, into unit fractions, using concrete models, drawings, and/or the number line.
Fractions include denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100. 4.NPV.7

Equivalent Fractions

D. Develop and apply equivalent fraction understanding. 4.NPV.D

8. Explain why a fraction a/b is equivalent to a fraction (n·a)/(n·b), using visual fraction models, generating equivalent fractions using the principle a/b = (n·a)/(n·b).
Fractions include denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100. 4.NPV.8
9. Add two fractions with denominators of 10 and 100 by expressing the denominator of 10 as an equivalent fraction with a denominator of 100. 4.NPV.9
10. Apply decimal notation for fractions with denominators 10 or 100. 4.NPV.10

Computation & Algebraic Reasoning

Operations & Properties

A. Perform operations, using place value understanding and properties of operations. 4.CAR.A

1. Find the factor pairs for a given number in the range of 1-100, identifying whether a number is prime or composite; determine whether a given whole number in the range of 1-100 is a multiple of a given one-digit number. 4.CAR.1
2. Use computational fluency to add and subtract whole numbers up to 1,000,000 by using strategies and algorithms, including the standard algorithm, with mastery by the end of fourth grade. 4.CAR.2
3. Use strategies based on place value and the properties of operations to multiply four-digit by one-digit whole numbers and two two-digit whole numbers. 4.CAR.3
4. Use strategies based on place value, the properties of operations, and the relationship between multiplication and division to divide whole numbers with four-digits by one-digit divisors; quotients should be with and without whole number remainders. 4.CAR.4
5. Add and subtract fractions, including mixed numbers, with like denominators, using visual fraction models and equations.
Fractions include: denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 4.CAR.5
6. Multiply a fraction by a whole number using visual fraction models and equations.
Fractions include: denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 4.CAR.6

Problem Solving

B. Solve real-world problems. 4.CAR.B

7. Solve real-world problems involving multiplicative comparison, using drawings and/or equations with a symbol for the unknown number, and distinguish between multiplicative comparison and additive comparison. 4.CAR.7
8. Solve multi-step, real-world problems posed with whole numbers and having whole-number answers, using addition, subtraction, multiplication, and division; include problems in which remainders must be interpreted and represent these problems using equations with symbols standing for the unknown quantity. 4.CAR.8
9. Solve real-world problems involving the addition and subtraction of fractions; include mixed numbers with like denominators, using visual fraction models or equations.
Fractions include: denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 4.CAR.9
10. Solve real-word problems involving the multiplication of a fraction by a whole number using visual fraction models or equations.
Fractions include: denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 4.CAR.10

Algebraic Concepts

C. Students develop and apply an understanding of foundational algebraic concepts. 4.CAR.C

11. Generate a number or shape pattern that follows a given rule, identifying apparent features of the pattern that are not explicit in the rule itself. 4.CAR.11

Geometry & Measurement

Shapes

A. Expand knowledge of shapes by analyzing sides and angles. 4.GM.A

1. Identify angles as geometric shapes that are formed where two rays share a common endpoint, understanding that angles are measured with reference to a circle so that an angle that turns through a 1/360 of a circle is called a "one-degree angle" and an angle that turns through n one-degree angles is said to have an angle measure of n degree. 4.GM.1
2. Measure angles in whole-number degrees, using a protractor, drawing angles of specified measure. 4.GM.2
3. Solve real-word problems finding unknown angle measures, using addition and subtraction when an angle is decomposed into non-overlapping parts. 4.GM.3
4. Identify and draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines, identifying these in quadrilaterals and triangles. 4.GM.4
5. Classify two-dimensional figures based on the presence or absence of parallel lines, perpendicular lines, or angles of a specified size, involving quadrilaterals and triangles.
Shapes include: quadrilaterals (trapezoid, parallelogram, rectangle, square, rhombus) and triangles (right, acute, obtuse) 4.GM.5
6. Identify and/or draw lines of symmetry for a two-dimensional figure. 4.GM.6

Perimeter, Area, & Volume

B. Calculate the perimeter of polygons, area of rectangles, and liquid volume. 4.GM.B

7. Apply the area and perimeter formulas for rectangles and figures composed of two or more rectangles in real-world situations. 4.GM.7

Time, Money, & Conversions

C. Apply measurement knowledge to solve real-world problems. 4.GM.C

8. Convert measurements of length, weight/mass, and liquid volume within the same system of measurement, metric and customary, expressing measurements from a larger unit in terms of a smaller unit. 4.GM.8
9. Solve real-world problems involving time intervals that may cross the hour. 4.GM.9
10. Solve real-world problems involving addition and subtraction of money, including the ability to make change. 4.GM.10
11. Solve real-world problems involving distances, liquid volume, and masses of objects, including problems that require expressing measurements given in a larger unit in terms of a smaller unit. 4.GM.11

Data Analysis

Charts, Graphs, & Tables

A. Organize and analyze data. 4.DA.A

1. Collect and interpret data from observations, surveys, and experiments; represent data using frequency tables and scaled bar graphs. 4.DA.1
2. Use a line plot to display a data set of measurements in fractions of a unit, solving problems involving addition and subtraction of fractions with like denominators using data presented in line plots. 4.DA.2