

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, $\frac{1}{2}$, 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.

Equivalent Fractions

- D.** Develop and apply equivalent fraction understanding. **4.NPV.D**
- 8.** Explain why a fraction a/b is equivalent to a fraction $(n \cdot a)/(n \cdot b)$, using visual fraction models, generating equivalent fractions using the principle $a/b = (n \cdot a)/(n \cdot b)$.
 - 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**
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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 1004.CAR.9
10. Solve real-world 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 1004.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 $\frac{1}{360}$ 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-world 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