

Grade 5

Adopted 2023

Grade 5

Number & Place Value

Place Value

- A. Understand the base ten place value system. [5.NPV.A](#)
 - 1. Recognize that, in a multi-digit number, a digit in a given place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left. [5.NPV.1](#)
 - 2. Explain patterns in the number of zeros and/or the decimal point when multiplying or dividing a number by a power of 10, using whole-number exponents to denote powers of 10. [5.NPV.2](#)
 - 3. Read and write decimals to thousandths, using base-ten numerals, word form, and a variety of expanded forms. [5.NPV.3](#)
 - 4. Apply place value understanding to round decimals to any place up to the thousandths. [5.NPV.4](#)

Comparison

- B. Use place value understanding to compare numbers. [5.NPV.B](#)
 - 5. Compare two decimals to thousandths based on the value of the digits in each place, using symbols ($<$, $=$, $>$) to record the results of comparisons. [5.NPV.5](#)

Fraction Foundations

- C. Build a conceptual understanding of fractions. [5.NPV.C](#)
 - 6. Use visual models to explain the product of multiplying a whole number by a fraction greater than and less than one. [5.NPV.6](#)

Computation & Algebraic Reasoning

Operations & Properties

- A. Perform operations using place value understanding and properties of operations. **5.CAR.A**
1. Use computational fluency to multiply multi-digit whole numbers by using strategies and algorithms, including the standard algorithm, with mastery by the end of fifth grade. **5.CAR.1**
 2. Calculate whole number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, properties of operations, divisibility rules, and the relationship between multiplication and division. **5.CAR.2**
 3. Add and subtract decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, or the relationship between addition and subtraction. **5.CAR.3**
 4. Multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, or the relationship between multiplication and division. **5.CAR.4**
 5. Add and subtract fractions with like and unlike denominators by using equivalent fractions $[a/b = (n \cdot a)/(n \cdot b)]$ to create common denominators; include real-world problems.
 - Fractions include: mixed numbers**5.CAR.5**
 6. Interpret and solve fractions as division problems, $(a/b = a \div b)$, where a and b are natural numbers. **5.CAR.6**
 7. Use visual models and equations to multiply whole numbers by fractions and fractions by fractions, including mixed numbers and fractions greater than one. **5.CAR.7**
 8. Apply previous understanding of division to divide unit fractions by whole numbers and whole numbers by unit fractions. **5.CAR.8**

Problem Solving

- B. Solve real-world problems. **5.CAR.B**
9. Solve and create real-world problems involving multiplication of fractions and mixed numbers. **5.CAR.9**
 10. Solve real-world problems involving the division of natural numbers leading to answers in the form of fractions or mixed numbers using visual models and equations. **5.CAR.10**
 11. Solve real-world problems involving the division of unit fractions by whole numbers and whole numbers by unit fractions, using visual fraction models and equations. **5.CAR.11**

Algebraic Concepts

- C. Develop and apply an understanding of foundational algebraic concepts. **5.CAR.C**
 - 12. Evaluate numerical expressions with parentheses or brackets and exponents with the base of ten, using the Order of Operations. **5.CAR.12**
 - 13. Write simple expressions that record calculations with numbers, interpreting numerical expressions without evaluating them. **5.CAR.13**
 - 14. Generate two numerical patterns given two rules, identifying the relationship between the corresponding terms by graphing the terms in the first quadrant of the coordinate grid. **5.CAR.14**
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Geometry & Measurement

Shapes

- A. Expand knowledge of shapes by analyzing sides and angles. **5.GM.A**
 - 1. Classify two-dimensional figures in a hierarchy based on properties with the focus on quadrilaterals and triangles when teaching hierarchies.
 - Shapes to include: quadrilaterals (trapezoid, parallelogram, rectangle, square, rhombus, kite) and triangles (right, acute, obtuse, scalene, isosceles, equilateral)

Area & Volume

- B. Solve the area of rectangles and volume of rectangular prisms. **5.GM.B**
 - 2. Find the area of a rectangle with fractional and/or mixed number side lengths by using models and multiplying the fractional side lengths showing that both strategies produce the same area. **5.GM.2**
 - 3. Measure volumes by counting unit cubes using cubic cm (cm^3), cubic in (in^3), cubic ft (ft^3), and improvised units (u^3). **5.GM.3**
 - 4. Solve real-world and mathematical problems involving the volume of rectangular prisms with whole number side lengths by applying the formulas ($V = l \cdot w \cdot h$ or $V = B \cdot h$) and the properties of operations. **5.GM.4**
 - 5. Solve real-world problems by calculating volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts. **5.GM.5**

Conversions

- C. Apply measurement knowledge to solve real-world problems. **5.GM.C**
 - 6. Convert among different-sized standard measurement units within the same system, including both the metric and customary systems, and solve multi-step, real-world problems using conversions. **5.GM.6**

Coordinate Plane System

D. Develop an understanding of the coordinate system. 5.GM.D

7. Graph points with whole number coordinates on a coordinate plane in the first quadrant, explaining how the coordinates relate to the horizontal and vertical axes to describe the location of points in the plane. 5.GM.7
 8. Represent real-world and mathematical problems by graphing points in the first quadrant on a coordinate plane, interpreting coordinate values of points in the context of the situation. 5.GM.8
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Data Analysis

Charts, Graphs, & Tables

A. Organize and analyze data. 5.DA.A

1. Collect and interpret data from observations, surveys, and experiments; represent data using frequency tables, scaled bar graphs, and scaled line graphs. 5.DA.1
2. Use a line plot to display a data set of measurements in fractions of a unit solving problems involving all four operations with fractions (excluding division of a fraction by fraction) using data presented in line plots. 5.DA.2