Arkansas Mathematics Standards

Grade 6

Adopted 2023

Grade 6

Number Concepts & Computations

Rational Numbers

A. Use fractions, decimals, integers, and absolute values to represent real-world situations. 6.NCC.A

1. Explain positive and negative integers as being opposite values or directions and the meaning of 0 in a real-world context. 6.NCC.1
2. Find and plot rational numbers on horizontal and vertical number lines in real-world and mathematical problems. 6.NCC.2
3. Compare rational numbers, using inequalities (<,>,≤,≥,≠) and order on a number line. 6.NCC.3
4. Interpret the absolute value of numbers for positive or negative quantities in a real-world context. 6.NCC.4
5. Convert between fractions, decimals, and percents in real-world and mathematical problems. 6.NCC.5

Rational Number Operations

B. Extend previous knowledge of operations to decimals and fractions, involving positive rational numbers. 6.NCC.B

6. Interpret and represent quotients of fractions.
Fractions include all forms of fractions. 6.NCC.6
7. Solve problems involving the division of fractions in real-world and mathematical problems.
Fractions include all forms of fractions. 6.NCC.7
8. Divide multi-digit numbers fluently in real-world and mathematical problems. 6.NCC.8
9. Use any standard algorithm to fluently add and subtract multi-digit decimals and fractions in real-world and mathematical problems. 6.NCC.9
10. Use any standard algorithm to fluently multiply and divide multi-digit decimals and fractions in real-world and mathematical problems. 6.NCC.10

Common Factors and Multiples

C. Use factors and multiples to solve problems. 6.NCC.C

11. Solve real-world and mathematical problems with the greatest common factor of two whole numbers less than or equal to 100. 6.NCC.11
12. Solve real-world and mathematical problems with the least common multiple of two whole numbers less than or equal to 12. 6.NCC.12
13. Use the distributive property and the greatest common factor to rewrite the sum of two whole numbers, 1 through 100. 6.NCC.13

Proportional Relationships

Ratio & Rates

A. Understand ratio concepts and use proportional reasoning to solve problems. 6.PR.A

1. Use precise ratio language and notation to describe a ratio as a relationship between two quantities. 6.PR.1
2. Calculate unit rates to include unit pricing and constant speed. 6.PR.2
3. Give examples of unit rates as a ratio that compares two quantities with different units of measure, limited to non-complex fractions. 6.PR.3
4. Create various representations to compare ratios and find missing values to solve real-world and mathematical problems. 6.PR.4
5. Find a percent of a quantity as a rate per 100 and solve problems involving finding the whole when given a part and the percent. 6.PR.5

Algebra

Expressions

B. Extend their understanding of arithmetic to algebraic expressions. 6.ALG.B

1. Read and write expressions in real-world or mathematical problems in which letters stand for numbers. 6.ALG.1
2. Use mathematical terms to identify parts of an expression, including the names of operations, terms, factors, coefficients, variables, and constants. 6.ALG.2
3. Write and evaluate expressions for given values of variables, using order of operations, including expressions with whole number exponents. 6.ALG.3
4. Generate equivalent expressions by applying the associative, commutative, distributive, and identity properties. 6.ALG.4
5. Identify when two expressions are equivalent by using properties of operations including like terms. 6.ALG.5

Equations & Inequalities

C. Focus on reasoning about and solving equations and inequalities. 6.ALG.C

6. Use substitution to determine if a given value in a specified set makes an equation or inequality true.
Include the following inequality symbols: <,>,≤,≥,≠ 6.ALG.6
7. Write and solve one-step equations in real-world and mathematical problems, involving positive rational numbers and zero. 6.ALG.7
8. Write, solve, and graph one-step inequalities in real-world and mathematical problems. 6.ALG.8

Geometry & Measurement

Area, Volume, & Surface Area

A. Solve problems involving area, volume, and surface area. 6.GM.A

1. Find the area of triangles, quadrilaterals, and polygons by composing or decomposing to solve real-world and mathematical problems. 6.GM.1
2. Apply the formulas V = lwh and V = Bh to find the volume of right rectangular prisms with fractional edge lengths to solve real-world and mathematical problems, including solving for an unknown dimension. 6.GM.2
3. Construct nets of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid, using the nets to find the surface area of these prisms. 6.GM.3

Coordinate Plane System

B. Graph points in all four quadrants. 6.GM.B

4. Find and graph pairs of rational numbers in all four quadrants of the coordinate plane in real-world and mathematical problems. 6.GM.4
5. Draw polygons in the coordinate plane when given coordinates for the vertices. 6.GM.5
6. Use coordinates to calculate vertical and horizontal distances between points with the same x-coordinate or the same y-coordinate to solve real-world and mathematical problems. 6.GM.6

Conversions

C. Apply measurement knowledge to solve real-world problems. 6.GM.C

7. Convert measurements within and between the metric and customary measurement systems to solve real-world and mathematical problems. 6.GM.7

Statistics & Probability

Statistical & Nonstatistical

A. Recognize that data collected to answer a statistical question can be analyzed by their distributions. 6.SP.A

1. Identify the difference between statistical and non-statistical questions and write simple statistical questions that allow variable responses. 6.SP.1

Measures of Center

B. Explore mean, median, and mode. 6.SP.B

2. Calculate and interpret any measure of center (mean, median, and mode) of a numerical data set. 6.SP.2
3. Determine which measure of center (mean or median) is more appropriate to describe the center of data and justify the choice. 6.SP.3
4. Describe how the mean or median is affected by outliers of a numerical data set. 6.SP.4

Measures of Variation

C. Explore range and interquartile range. 6.SP.C

5. Calculate and interpret the measure of variation [range and interquartile range (IQR)] of a numerical data set. 6.SP.5
6. Determine which measure of variation (range or interquartile range) is more appropriate to describe the shape; justify the choice. 6.SP.6

Numerical Data

D. Summarize and describe distributions. 6.SP.D

7. Represent numerical data on a number line, histogram, and box plot. 6.SP.7
8. Calculate the relative frequency of an interval of data values when given a histogram. 6.SP.8
9. Interpret a box plot to answer statistical questions about a data set. 6.SP.9