Florida Mathematics (B.E.S.T.)

Grade 6: Standards

Number Sense and Operations

1 Extend knowledge of numbers to negative numbers and develop an understanding of absolute value.

1. Extend previous understanding of numbers to define rational numbers. Plot, order and compare rational numbers. MA.6.NSO.1.1
2. Given a mathematical or real-world context, represent quantities that have opposite direction using rational numbers. Compare them on a number line and explain the meaning of zero within its context. MA.6.NSO.1.2
3. Given a mathematical or real-world context, interpret the absolute value of a number as the distance from zero on a number line. Find the absolute value of rational numbers. MA.6.NSO.1.3
4. Solve mathematical and real-world problems involving absolute value, including the comparison of absolute value. MA.6.NSO.1.4

2 Add, subtract, multiply and divide positive rational numbers.

1. Multiply and divide positive multi-digit numbers with decimals to the thousandths, including using a standard algorithm with procedural fluency. MA.6.NSO.2.1
2. Extend previous understanding of multiplication and division to compute products and quotients of positive fractions by positive fractions, including mixed numbers, with procedural fluency. MA.6.NSO.2.2
3. Solve multi-step real-world problems involving any of the four operations with positive multi-digit decimals or positive fractions, including mixed numbers. MA.6.NSO.2.3

3 Apply properties of operations to rewrite numbers in equivalent forms.

1. Given a mathematical or real-world context, find the greatest common factor and least common multiple of two whole numbers. MA.6.NSO.3.1
2. Rewrite the sum of two composite whole numbers having a common factor, as a common factor multiplied by the sum of two whole numbers. MA.6.NSO.3.2
3. Evaluate positive rational numbers and integers with natural number exponents. MA.6.NSO.3.3
4. Express composite whole numbers as a product of prime factors with natural number exponents. MA.6.NSO.3.4
5. Rewrite positive rational numbers in different but equivalent forms including fractions, terminating decimals and percentages. MA.6.NSO.3.5

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4 Extend understanding of operations with integers.

1. Apply and extend previous understandings of operations with whole numbers to add and subtract integers with procedural fluency. MA.6.NSO.4.1
2. Apply and extend previous understandings of operations with whole numbers to multiply and divide integers with procedural fluency. MA.6.NSO.4.2

Algebraic Reasoning

1 Apply previous understanding of arithmetic expressions to algebraic expressions.

1. Given a mathematical or real-world context, translate written descriptions into algebraic expressions and translate algebraic expressions into written descriptions. MA.6.AR.1.1
2. Translate a real-world written description into an algebraic inequality in the form of $x > a$, $x < a$, $x \geq a$ or $x \leq a$. Represent the inequality on a number line. MA.6.AR.1.2
3. Evaluate algebraic expressions using substitution and order of operations. MA.6.AR.1.3
4. Apply the properties of operations to generate equivalent algebraic expressions with integer coefficients. MA.6.AR.1.4

2 Develop an understanding for solving equations and inequalities. Write and solve one-step equations in one variable.

1. Given an equation or inequality and a specified set of integer values, determine which values make the equation or inequality true or false. MA.6.AR.2.1
2. Write and solve one-step equations in one variable within a mathematical or real-world context using addition and subtraction, where all terms and solutions are integers. MA.6.AR.2.2
3. Write and solve one-step equations in one variable within a mathematical or real-world context using multiplication and division, where all terms and solutions are integers. MA.6.AR.2.3
4. Determine the unknown decimal or fraction in an equation involving any of the four operations, relating three numbers, with the unknown in any position. MA.6.AR.2.4

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3 Understand ratio and unit rate concepts and use them to solve problems.

1. Given a real-world context, write and interpret ratios to show the relative sizes of two quantities using appropriate notation: a/b, a to b, or a:b where b ≠ 0. MA.6.AR.3.1
2. Given a real-world context, determine a rate for a ratio of quantities with different units. Calculate and interpret the corresponding unit rate. MA.6.AR.3.2
3. Extend previous understanding of fractions and numerical patterns to generate or complete a two- or three-column table to display equivalent part-to-part ratios and part-to-part-to-whole ratios. MA.6.AR.3.3
4. Apply ratio relationships to solve mathematical and real-world problems involving percentages using the relationship between two quantities. MA.6.AR.3.4
5. Solve mathematical and real-world problems involving ratios, rates and unit rates, including comparisons, mixtures, ratios of lengths and conversions within the same measurement system. MA.6.AR.3.5

Geometric Reasoning

1 Apply previous understanding of the coordinate plane to solve problems.

1. Extend previous understanding of the coordinate plane to plot rational number ordered pairs in all four quadrants and on both axes. Identify the x- or y-axis as the line of reflection when two ordered pairs have an opposite x- or y-coordinate. MA.6.GR.1.1
2. Find distances between ordered pairs, limited to the same x-coordinate or the same y-coordinate, represented on the coordinate plane. MA.6.GR.1.2
3. Solve mathematical and real-world problems by plotting points on a coordinate plane, including finding the perimeter or area of a rectangle. MA.6.GR.1.3

2 Model and solve problems involving two-dimensional figures and three-dimensional figures.

1. Derive a formula for the area of a right triangle using a rectangle. Apply a formula to find the area of a triangle. MA.6.GR.2.1
2. Solve mathematical and real-world problems involving the area of quadrilaterals and composite figures by decomposing them into triangles or rectangles. MA.6.GR.2.2
3. Solve mathematical and real-world problems involving the volume of right rectangular prisms with positive rational number edge lengths using a visual model and a formula. MA.6.GR.2.3
4. Given a mathematical or real-world context, find the surface area of right rectangular prisms and right rectangular pyramids using the figure's net. MA.6.GR.2.4

Data Analysis and Pr

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1 Develop an understanding of statistics and determine measures of center and measures of variability. Summarize statistical distributions graphically and numerically.

1. Recognize and formulate a statistical question that would generate numerical data. MA.6.DP.1.1
2. Given a numerical data set within a real-world context, find and interpret mean, median, mode and range. MA.6.DP.1.2
3. Given a box plot within a real-world context, determine the minimum, the lower quartile, the median, the upper quartile and the maximum. Use this summary of the data to describe the spread and distribution of the data. MA.6.DP.1.3
4. Given a histogram or line plot within a real-world context, qualitatively describe and interpret the spread and distribution of the data, including any symmetry, skewness, gaps, clusters, outliers and the range. MA.6.DP.1.4
5. Create box plots and histograms to represent sets of numerical data within real-world contexts. MA.6.DP.1.5
6. Given a real-world scenario, determine and describe how changes in data values impact measures of center and variation. MA.6.DP.1.6