

Achievement Level Descriptors

Mathematics Grade 6

ALD	Standard	Level 2	Level 3	Level 4	Level 5
Policy		Students at this level demonstrate a below satisfactory level of success with the challenging content of the <i>Florida Standards</i> .	Students at this level demonstrate a satisfactory level of success with the challenging content of the <i>Florida Standards</i> .	Students at this level demonstrate an above satisfactory level of success with the challenging content of the <i>Florida Standards</i> .	Students at this level demonstrate mastery of the most challenging content of the <i>Florida Standards</i> .
		A student performing at Level 2	A student performing at Level 3	A student performing at Level 4	A student performing at Level 5
Ratios and Proportional Relationships					
Range	6.RP.1.1	identifies a ratio using ratio language and/or notation	uses the concept of a ratio, ratio language, and notation to describe a ratio relationship between two quantities	describes multiple ratio relationships between two quantities	connects ratio relationships between multiple representations of ratio situations
Range	6.RP.1.2	determines a unit rate	uses the concept of a unit rate associated with a ratio and uses rate language in context	determines a unit rate with multiple steps	applies the concept of unit rate in nonroutine real-world situations with multiple steps
Range	6.RP.1.3a	plots coordinate pairs in Quadrant 1 from a table	completes a table to compare ratios from mathematical problems	creates or uses tables to compare ratios in a real-world context	creates and uses a table to compare ratios in a real-world context
Range	6.RP.1.3b	determines a unit rate involving unit pricing or constant speed	solves a unit rate problem including those involving unit pricing or constant speed	solves a multistep unit rate problem including those involving unit pricing or constant speed	solves and applies a multistep unit rate problem including those involving unit pricing or constant speed
Range	6.RP.1.3c	finds the percent of a quantity	determines the percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); finds the whole given a part and the percent	solves problems involving finding the whole, given a part and the percent in real-world contexts	solves nonroutine real-world or mathematical problems involving percent

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Range	6.RP.1.3d	identifies ratio relationships presented in graphical, tabular, or verbal formats using measurement units	uses ratio reasoning to convert measurement units; manipulates and transforms units appropriately when multiplying or dividing quantities in mathematical problems	manipulates and transforms units appropriately when multiplying or dividing quantities in a real-world context	applies ratio reasoning to real-world word problems and converts measurement units
Range	6.RP.1.3e	finds the circumference of a circle	uses the concept of pi as the ratio of the circumference of a circle to its diameter	given the circumference, determines an approximation for the radius or diameter	explains the relationship of the circumference of a circle to its diameter
The Number System					
Range	6.NS.1.1	solves mathematical problems involving division of fractions in contexts given visual fraction models and equations to represent the problem	solves and interprets division of fractions by fractions	solves and interprets real-world two-step division of fraction word problems involving mixed numbers	creates and solves word problems involving division of fractions by fractions
Range	6.NS.2.2	finds whole-number quotients (with up to four-digit dividends and one-digit divisors), using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division	fluently divides multi-digit numbers using the standard algorithm (with up to five-digit dividends and two-digit divisors or four-digit dividends and two- or three-digit divisors), using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division	justifies each step in division calculations	fluently divides multi-digit numbers using the standard algorithm, and assesses the reasonableness of the result
Range	6.NS.2.3	adds, subtracts, and multiplies using strategies based on place value, the properties of operations, and/or the relationship between operations; limit decimals to hundredths	fluently adds, subtracts, multiplies, and divides multi-digit decimals, using the standard algorithm for each operation	justifies each step in the procedure	assesses the reasonableness of the result

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Range	6.NS.2.4	finds the greatest common factor of two whole numbers (less than or equal to 50) and common multiples (less than or equal to 10), using a visual model or strategies	finds the greatest common factor of two whole numbers (less than or equal to 100) and the least common multiple of two whole numbers (less than or equal to 12); uses the distributive property to express a sum of two whole numbers (1 to 100) with a common factor, as a multiple of a sum of two whole numbers with no common factor, for example, expresses $36 + 8$ as $4(9 + 2)$	constructs an equivalent expression using either greatest common factor or least common multiple and the distributive property	constructs an equivalent expression, using greatest common factor, least common multiple, and the distributive property
Range	6.NS.3.5	places integers on the number line in a given situation (e.g., elevation, sea level)	demonstrates that positive and negative numbers are used together to describe quantities having opposite directions or values; uses positive and negative numbers to represent quantities in real-world contexts; explains the meaning of 0 in each situation	recognizes patterns about characteristics of positive and negative numbers, including fractions and decimals	[intentionally left blank]
Range	6.NS.3.6 6.NS.3.8	identifies opposites on a number line, the relationship of two ordered pairs with only sign differences; plots integer pairs in a coordinate plane (with one-unit increments on both axes) and on a horizontal number line	identifies when two points are reflections on a number line or reflections across one axis on the coordinate plane; plots ordered pairs, including rational numbers, on a coordinate plane, and on both horizontal and vertical number lines; includes coordinates of absolute value to find distances between points with the same first or second coordinate in mathematical problems	includes coordinates of absolute value in real-world context (scales may vary)	solves real-world problems involving absolute value and the coordinate plane; shows that when two ordered pairs differ only by signs, the locations of the points are related by reflections across both axes

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Range	6.NS.3.7	compares two rational numbers on a number line diagram; writes the comparison using mathematical notation; finds the absolute value of a rational number using representations; absolute value is the distance from zero on the number line	determines the greater or lesser rational number, including absolute values in a real-world context; uses mathematical notation and words to express these statements of order	writes, interprets, and explains statements of order for rational numbers in real-world contexts; interprets absolute value as magnitude for a positive or negative quantity in a real-world situation; distinguishes comparisons of absolute value from statements about order	draws conclusions about a real-world situation involving absolute values of rational numbers and compares values
Expressions and Equations					
Range	6.EE.1.1	writes and evaluates a single term in numerical expressions involving whole-number bases and exponents	writes and evaluates multi-term numerical expressions involving whole-number exponents	[intentionally left blank]	[intentionally left blank]
Range	6.EE.1.2a 6.EE.1.2b	identifies an expression that matches a written statement, with numbers and with letters standing for numbers, using correct mathematical terms	writes expressions from written statements that record an operation (with numbers and with letters standing for numbers); recognizes one or more parts of an expression as single entities	writes expressions that record operations (with numbers and with letters standing for numbers) involving real-world and mathematical contexts	writes and evaluates expressions that record operations (with numbers and with letters standing for numbers) involving real-world and mathematical contexts
Range	6.EE.1.2c	evaluates expressions at specific values of their variables (e.g., substitution), and includes expressions that arise from formulas	performs arithmetic operations, including those involving whole-number exponents and expressions at specific values of their variables, in the conventional order when there are no parentheses to specify a particular order (order of operations)	evaluates multistep real-world problems (involving rational numbers and whole number exponents)	[intentionally left blank]
Range	6.EE.1.3	[intentionally left blank]	applies the properties of operations to generate equivalent expressions	applies multiple properties of operations to identify and generate equivalent expressions	uses a real-world context to construct multiple equivalent expressions

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Range	6.EE.1.4	[intentionally left blank]	identifies when two expressions are equivalent	applies the properties of operations to identify and generate multiple equivalent expressions	constructs multiple equivalent expressions, identifies and justifies the properties of operations for each step
Range	6.EE.2.5	uses substitution to determine whether a given number makes an equation (with a single operation) true	solves an equation or inequality, using substitution to determine whether a given number in a specified set makes an equation or inequality true	solves an equation or inequality as a process of answering a question and justifies the answer: which values from a specified set, if any, make the equation or inequality true	[intentionally left blank]
Range	6.EE.2.6	writes a single operation expression (with one variable) to represent a mathematical problem	uses variables to represent numbers and write expressions when solving a real-world or mathematical problem; understands that a variable can represent an unknown number or, depending on the purpose at hand, any number in a specified set	justifies that a variable can represent an unknown number or, depending on the purpose at hand, any number in a specified set	creates a real-world situation that corresponds to a given expression
Range	6.EE.2.7	solves equations in the form $x + p = q$ and $px = q$ (with nonnegative whole numbers)	solves real-world and mathematical problems by writing and solving equations in the form $x + p = q$ and $px = q$, for cases in which p , q , and x are all nonnegative, rational numbers	solves and justifies one-step real-world and mathematical problems	interprets and analyzes the solution to one-step real-world and mathematical problems
Range	6.EE.2.8	recognizes that mathematical problem inequalities in the form $x > c$ or $x < c$ have infinitely many solutions	writes an inequality in the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem; represents solutions of such inequalities on number line diagrams	given a number line diagram, writes an inequality in the form $x > c$ or $x < c$ and justifies solutions; or, given an inequality in the form $x > c$ or $x < c$, graphs solutions on a number line diagram and justifies constraints	given an inequality in the form $x > c$ or $x < c$, creates a real-world situation and graph

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Range	6.EE.3.9	given a graph/table in a real-world or mathematical problem, identifies dependent and independent variables, and matches tables and graphs	given graphs and tables of real-world situations, writes an equation to express the relationship between the dependent and independent variables	given a real-world situation, writes an equation to express the relationship between the dependent and independent variables without graphs and tables provided	analyzes and describes the relationship between the variables
Geometry, Statistics and Probability					
Range	6.G.1.1	finds the area of polygons by decomposing into triangles and quadrilaterals	finds the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes	applies techniques for finding the area of polygons in the context of solving real-world and mathematical problems	solves geometric multistep real-world and mathematical area problems including decimal and fractional measurements
Range	6.G.1.2	solves volume problems of a right rectangular prism with one fractional edge length and unit cubes with unit fraction edge lengths; unit cubes have compatible denominators	solves volume problems by relating the number of unit cubes in a prism to the multiplication of the edge lengths in the context of solving real-world and mathematical problems	solves real-world and mathematical problems by applying the formulas for volume; finds the volume of two non-overlapping right rectangular prisms by adding the volumes of the two non-overlapping parts; finds the missing fractional edge length	given the volume of a right rectangular prism with fractional edge lengths, finds the missing fractional edge length in the context of solving real-world and mathematical problems
Range	6.G.1.3	plots polygons on the coordinate plane given coordinates for the vertices	uses coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate	uses coordinates in the context of solving real-world and mathematical problems	finds the missing vertex of a regular polygon when given the other vertices in the coordinate plane in a real-world context
Range	6.G.1.4	represents three-dimensional figures using nets made up of rectangles and triangles	uses nets to find the surface area of three-dimensional figures	applies the use of nets to solve real-world and mathematical problems using nets and three-dimensional figures, including decimal measurements	solves real-world and mathematical problems using nets and three-dimensional figures, including fractional

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Range	6.SP.1.1	recognizes a statistical question from a list of questions	justifies a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers	changes a question from a non-statistical question to a statistical question that anticipates variability in the data related to the question	writes a statistical question given a context
Range	6.SP.1.2	identifies the measure of center, spread, and overall shape from a graph display	determines a set of data collected to answer a statistical question has a distribution which can be described by using measures of center, spread, and overall shape	[intentionally left blank]	[intentionally left blank]
Range	6.SP.1.3	recognizes and determines the mean, median, and/or mode; finds the range	recognizes that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number	determines the new measures of center when additional data points are included from a context	analyzes how additional data points affect the measure of center in a numerical data set
Range	6.SP.2.4	identifies an appropriate display of numerical data in plots on a number line and dot/line plots	displays numerical data in plots on a number line, including dot/line plots, histograms, and box plots	constructs a histogram, dot/line plot, or box plot from given data	constructs a histogram or box plot from data displayed on a dot/line plot
Range	6.SP.2.5a 6.SP.2.5b 6.SP.2.5c 6.SP.2.5d	summarizes a numerical data set by quantifying the observations	summarizes numerical data sets in relation to their context; identifies the range and measures of center and any striking deviations (e.g., outliers)	relates a set of data to the appropriate measures of center with reference to the context	creates a set of data from a given box plot