Achievement Level Descriptors
Mathematics Grade 7

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 *Florida Standards*.	Students at this level demonstrate a **satisfactory** level of success with the challenging content of the *Florida Standards*.	Students at this level demonstrate an **above satisfactory** level of success with the challenging content of the *Florida Standards*.	Students at this level demonstrate **mastery** of the most challenging content of the *Florida Standards*.
Ratio and Proportional Relationships					
Range	7.RP.1.1	computes unit rates with ratios of one non-unit fraction and a whole number other than 1	computes unit rates associated with two fractions	computes and explains unit rates associated with ratios of two mixed numbers	[intentionally left blank]
Range	7.RP.1.2 (ab)	decides whether two quantities are in a proportional relationship and identifies the constant of proportionality (unit rate) in a representation that includes (0, 0)	identifies the constant of proportionality (unit rate) in tables, diagrams, and/or graphs	identifies the constant of proportionality (unit rate) in equations and/or verbal descriptions	extends the given representation or creates a different representation that would represent the same proportional relationship
Range	7.RP.1.2 (c)	identifies the equation that models a relationship from a given representation with a proportional relationship	models a proportional relationship using an equation when given a table or graph including the origin	models a proportional relationship using a verbal description	models a representation with a context that would represent a given proportional equation
Range	7.RP.1.2 (d)	explains what any point (x, y) on the graph of a proportional relationship means in terms of the situation, but does not identify the unit rate	explains what any point (x, y) on the graph of a proportional relationship means in terms of the situation, and identifies the unit rate when given the point (1, r), where r is the unit rate	interprets the meaning of (x, y) in terms of the situation when not given the point (1, r)	[intentionally left blank]
Range	7.RP.1.3	uses proportional relationships to solve ratio and percent problems in a mathematical context	uses proportional relationships to solve multistep ratio and percent problems in context	uses proportional relationships to solve complex, multistep ratio, and percent problems in context	creates equivalent proportional equations that could be used to solve the same ratio/percent problem in context

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Number System					
Range	7.NS.1.1 (abcd)	represents addition and subtraction of rational numbers on a number line or using other manipulatives; identifies that the sum of a number and its opposite equals zero	applies properties of operations as strategies to add and subtract rational numbers; explains subtraction as adding the additive inverse; shows p + q as the number located a distance |q| from p in a positive or negative direction	interprets sums of rational numbers by describing a real-world context and determines the reasonableness of the solution	justifies the steps taken to add or subtract rational numbers; analyzes for errors as necessary
Range	7.NS.1.2 (abcd)	multiplies or divides rational numbers using a number line or other manipulatives	applies properties of operations as strategies to multiply or divide rational numbers; explains that division by zero is undefined; shows that -(q/p) = (-p)/q = p/(-q); converts a rational number to a decimal using long division and knows that the rational number terminates in 0 or eventually repeats	determines the reasonableness of the solutions	interprets products and quotients of rational numbers in a real-world context
Range	7.NS.1.3	solves mathematical problems involving the four operations with rational numbers using the number line or other manipulatives	solves real-world problems involving the four operations with rational numbers	solves real-world and multistep mathematical problems involving the four operations with rational numbers	creates a story problem to model a given number sentence

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Expressions and Equations					
Range	7.EE.1.1	applies properties of operations as strategies to add and subtract rational coefficients; factors and expands linear expressions with integer coefficients	applies properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients	applies and justifies properties of operations as strategies to add, subtract, factor, and expand complex linear expressions with rational coefficients	analyzes for errors in the use of properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients
Range	7.EE.1.2	rewrites an expression in a different form	shows that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related	explains the key terms and factors for each expression in a given problem context	creates equivalent expressions given in a problem context and explains the key terms and factors of the problem for each expression
Range	7.EE.2.3	solves mathematical problems posed with positive rational numbers	solves multistep and real-world problems posed with rational numbers, using tools strategically; applies properties of operations, conversions between forms, as appropriate, and assesses the reasonableness of answers	given a real-world problem, creates a model using rational numbers, using tools strategically; justifies a solution to a real-world problem	given a real-world problem, creates and solves a model using rational numbers, using tools strategically; analyzes errors in a problem with a real-world context
Range	7.EE.2.4 (ab)	solves equations and inequalities of the form $px + q = r$ with integer coefficients and constants	given a model, solves real-world or mathematical problems involving equations and inequalities in the form $px + q = r$, $p(x + q) = r$ and $px + q < r$, $px + q > r$, with integer coefficients and p as a benchmark fraction; interprets inequality solutions in the context of the problem	creates a model and solves real-world or mathematical problems in the form $px + q = r$, $p(x + q) = r$ and $px + q < r$, $px + q > r$, with integer coefficients and the absolute value of p as a benchmark fraction	creates a model and solves real-world or mathematical problems using equations and inequalities with rational coefficients and explains what the solution means

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Geometry					
Range	7.G.1.1	computes actual lengths given a geometric figure and a scale factor and finds actual lengths given two geometric figures with some unknown side measure	computes actual lengths and areas from a scale drawing and reproduces a scale drawing using a different scale	solves problems involving scaled drawings of two-dimensional geometric figures by creating a drawing and finding the appropriate scale	[intentionally left blank]
Range	7.G.1.2	draws polygons with given conditions	constructs geometric shapes given a combination of angle and side conditions; notices when conditions determine a unique triangle, more than one triangle, or no triangle	explains the conditions of a unique triangle, more than one triangle, or no triangle	analyzes and justifies the conditions for a unique triangle, more than one triangle, or no triangle
Range	7.G.1.3	identifies the two-dimensional figure that results from a vertical or horizontal cut of a right rectangular prism or right rectangular pyramid	identifies the two-dimensional figure that results from a vertical or horizontal cut of a three-dimensional figure	describes and/or draws the two-dimensional figure that results from a vertical or horizontal slice of a three-dimensional figure	[intentionally left blank]
Range	7.G.2.4	identifies the formula for the area and/or circumference of a circle	uses the formulas and solves problems for the area and circumference of a circle given radius or diameter, or vice versa, given a graphic representation in a real-world context	gives an informal derivation of the relationship between circumference and area of a circle; uses formulas and solves real-world problems without requiring graphic representations	uses the relationship between circumference and area of a circle to solve multistep real-world problems
Range	7.G.2.5	uses facts about angle relationships (supplementary, complementary, vertical, and adjacent) to find the unknown angle measure in a figure	uses facts about angle relationships to write and solve multistep equations for an unknown angle in a figure	finds the measures of the unknown angles in a figure	[intentionally left blank]

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Range	7.G.2.6	finds the area of triangles, quadrilaterals, and regular polygons; finds the volume of cubes and right prisms	solves real-world problems involving area of two-dimensional figures composed of triangles, quadrilaterals, and polygons; solves real-world volume and surface area problems for cubes and right prisms	solves real-world problems involving surface area and volume of composite figures	uses relationships between volume and surface area of three-dimensional shapes to solve real-world problems
Statistics and Probability					
Range	7.SP.1.1 7.SP.1.2	identifies that a random sample produces the most valid representation of the entire population	uses statistical data to draw inferences about a population based on representative samples	generates and/or uses multiple samples to gauge variations in estimates or predictions	justifies the most representative sampling method for a situation
Range	7.SP.2.3 7.SP.2.4	uses basic measures of central tendency to compare two different populations	uses measures of central tendency and/or variability to draw comparisons about two different populations	uses measures of variability for numerical data from random samples to draw comparative inferences about two populations in any context	[intentionally left blank]
Range	7.SP.3.5	identifies that the probability of a chance event is a number between 0 and 1	identifies the probability of a chance event as equally likely or unlikely (0.5); represents the probability as a fraction, decimal, or percent	compares the probabilities of two or more events and justifies the likelihood of each event	[intentionally left blank]
Range	7.SP.3.6	makes approximations of probability for a chance event	uses the results of an experiment to make approximations of probability for an event; predicts the approximate relative frequency given the probability	compares and connects the relative frequency of an event to the theoretical probability of the event	justifies why the experimental probability approaches the theoretical probability as the relative frequency of an event increases
Range	7.SP.3.7 (ab) 7.SP.3.8 (abc)	determines and develops a theoretical probability model of a simple event; determines the sample space for compound events	designs a simulation to generate frequencies for compound events; uses observed frequencies to create a uniform probability model to determine theoretical probabilities of events	uses observed frequencies to create a probability model for the data from a chance process where outcomes may not be uniform; compares probabilities from a model to observed frequencies; explains possible sources of any discrepancy	compares and justifies the experimental and theoretical probability in a given situation; compares different simulations of compound events to see which best predicts the probability