

AzMERIT MATH GRADE 7					
PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
Ratio and Proportional Relationships					
Detailed	7.RP.A [1]	Computes unit rates with ratios of two unit fractions having like or different units.	Computes unit rates with ratios of one non-unit fraction and one unit fraction having like or different units.	Computes unit rates with ratios of two non-unit fractions having like or different units. Ratios include side lengths.	Computes unit rates with ratios of two mixed numbers having like or different units. Ratios include areas.
Detailed	7.RP.A [2a to 2d]	Decides whether two quantities are in a proportional relationship and identifies the constant of proportionality (unit rate)	Decides whether two quantities are in a proportional relationship and identifies the constant of proportionality (unit rate)	Decides whether two quantities are in a proportional relationship and identifies the constant of proportionality (unit rate)	Extends the given representation or creates a different representation that would represent the same proportional
Detailed	7.RP.A [3]	Uses proportional relationships to solve simple ratio and percent problems.	Uses proportional relationships to solve simple ratio and percent problems in context.	Uses proportional relationships to solve multistep ratio and percent problems in context.	Creates equivalent proportional equations that could be used to solve the same ratio/percent problem in context.
The Number System					
Detailed	7.NS.A [1a to 2d]	Adds, subtracts, multiplies and divides rational numbers using a number line or other manipulatives.	Adds, subtracts, multiplies and divides simple rational numbers. Recognizes that the sum of a number and its opposite equals zero.	Adds, subtracts, multiplies, and divides rational numbers and determines the reasonableness of the solution. Understands $p + q$ as the number located a distance $ q $ from p in a positive or negative direction, and understand subtraction as adding the additive inverse. Understands 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. Knows that division by zero is undefined.	Interprets the sums of rational numbers in real-world contexts. Justifies the steps taken to add or subtract rational numbers. Interprets products and quotients of rational numbers in a real-world context.
Detailed	7.NS.A [3]	Solves simple real-world and mathematical problems involving the four operations with rational numbers using the number line or other manipulatives.	Solves simple real-world and mathematical 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 based on a real-world context and uses this to solve problems.

Expressions and Equations					
Detailed	7.EE.A [1 to 2]	Applies properties of operations as strategies to add, subtract, factor, and expand linear expressions (with whole number coefficients). Recognizes and explains the meaning of an expression in context (with integer coefficients).	Applies properties of operations as strategies to add, subtract, factor, and expand linear expressions (with integer coefficients). Recognizes and explains the meaning of an expression in context (with rational coefficients).	Applies properties of operations as strategies to add, subtract, factor, and expand linear expressions (with simple rational coefficients). Understands 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.	Applies properties of operations as strategies to add, subtract, factor, and expand linear expressions (with complex rational coefficients). Creates equivalent expressions given a problem context and explains key terms and factors of the problem for each expression.
Detailed	7.EE.B [3 to 4b]	Solves equations of the form $px + q = r$ and $p(x + q) = r$ with (rational coefficients).	Solves real-world or mathematical problems of the form $px + q = r$, $p(x + q) = r$, $px + q > r$, and $px + q < r$ with rational coefficients.	Creates a model and solves real-world or mathematical problems of the form $px + q = r$, $p(x + q) = r$, $px + q > r$, and $px + q < r$ with rational coefficients.	Creates a model and solves real-world or mathematical problems using equations and inequalities with rational coefficients and explains what the solution means.
Geometry					
Detailed	7.G.A [1]	Finds actual lengths given a geometric figure and a scale factor.	Finds actual lengths given two geometric figures with some unknown side measure when given the scale factor that relates the two figures.	Computes actual lengths and areas from a scale drawing, creates a scale drawing based on a context, and reproduces a scale drawing using a different scale.	Explains the relationship between scale factors of length and scale factors of areas for geometric figures and reproduce a scale drawing using a different scale.
Detailed	7.G.A [2]	Identifies geometric shapes given conditions on the sides or angles.	Constructs geometric shapes given a combination of angle and side conditions and determines whether it makes a particular shape.	Notices when conditions determine a unique triangle, more than one triangle, or no triangle.	Justifies the conditions for a unique triangle, more than one triangle or no triangle.
Detailed	7.G.A [3]	Identifies the 2-dimensional figure that results from a vertical or horizontal cut of a right rectangular prism.	Identifies the 2-dimensional figure that results from a vertical or horizontal cut of right rectangular pyramids.	Describes the 2-dimensional figure that results from a vertical, horizontal, or angled slice of a right rectangular prism.	Draws the 2-dimensional figure that results from a vertical, horizontal or angled slice of a right prism or pyramid.
Detailed	7.G.B [4]	Recognizes the formulas for area and circumference of a circle.	Calculates area and circumference given radius or diameter. Calculates radius or diameter given the circumference.	Determines the area given the circumference or vice versa. Solves real-world problems involving area and circumference. Gives an informal derivation of the relationship between circumference and area of a circle.	Understands how and why the formulas for area and circumference of a circle work. Explains the relationship between area of a circle and area of a parallelogram.
Detailed	7.G.B [5]	Identifies supplementary, complementary, vertical and adjacent angles.	Finds the unknown angle given another angle and their relationship.	Finds any of the unknown angles formed by two intersecting lines when measures are given algebraic expressions.	Creates and solves multi-step equations to find unknown angle measures given a figure with intersecting lines.
Detailed	7.G.B [6]	Finds the area of triangles, quadrilaterals and regular polygons. Finds the volume of cubes and right prisms.	Solves real-world problems involving surface area of 2-dimensional figures. Solve real-world volume problems for cubes and right prisms.	Solves real-world problems involving surface area of composite 2-dimensional figures. Solves real-world problems involving volume of 3-dimensional objects.	Uses relationships between volume and surface area of 3 dimensional shapes to solve real-world problems.

Statistics and Probability					
Detailed	7.SP.A [1 to 2]	Identifies and recognizes sample populations given a scenario describing the entire population.	Recognizes that a random sample produces the most valid representation of the entire population.	Makes inferences about a population based on representative samples. Uses multiple samples to gauge variations in estimates or predictions.	Identifies and justifies the most representative sampling method for a situation. Chooses or creates a method of generating multiple samples to gauge variations in estimates or predictions.
Detailed	7.SP.B [3 to 4]	Identify basic measures of central tendency to compare two different populations.	Uses measures of central tendency to draw comparisons about two different populations.	Uses measures of central tendency and variability to make comparative inferences about two populations in any context.	Compares two visual representations of data to make comparative inferences about the central tendency and variability of two populations in context.
Detailed	7.SP.C [5]	Understands that the probability of a chance event is a number between 0 and 1.	Understands that if the probability of a chance event is closer to 1, it is likely to happen and if it is closer to 0, it is not likely to happen.	Identifies the probability of a chance event as impossible (0), unlikely, equally likely or unlikely (.5), more likely, or certain (1). Represents the probability as a fraction, decimal, or percent.	Compares probabilities of two or more events and justify the likelihood of each event.
Detailed	7.SP.C [6]	Makes approximations of probability for a chance event.	Uses the results of an experiment to make approximations of probability for an event.	Compares the relative frequency of an event to the theoretical probability of the event.	Recognizes and justifies why the experimental probability approaches the theoretical probability as the relative frequency of an event increases.
Detailed	7.SP.C [7a to 7b]	Determines the theoretical probability of a simple event.	Determines the theoretical probability of a simple event and uses observed frequencies to create a uniform probability model.	Determines the theoretical probability of an event and uses observed frequencies to create a probability model for the data from a chance process (where outcomes are uniform or not uniform).	Compares and justifies the experimental and theoretical probability in a given situation.
Detailed	7.SP.C [8a to 8c]	Determines the sample space for compound events.	Determines the theoretical probability of a compound event.	Designs a simulation to generate frequencies for compound events.	Compares different simulations to see which best predicts the probability.