Florida 7th Grade Assessment Item Specification Report		
Benchmark number	Benchmark	Content Limits
MA.7.A.1.1#:	Distinguish between situations that are proportional or not proportional, and use proportions to solve problems.	Items will not include discounts, simple interest, taxes, tips, percents of increase or decrease, inverse variation, scale drawing, or constant speed. ------ Items will not include negative numbers.
MA.7.A.1.2#:	Solve percent problems, including problems involving discounts, simple interest, taxes, tips, and percents of increase or decrease.	Items may include solving for the whole, the part, or the percent. ------ Percents less than 100 should be whole numbers or mixed numbers that can be written in decimal form (e.g., 3 1/2% as 3.5%). ------ Items may require the student to round answers to the nearest whole number, dollar, cent, percent, or other amount, as appropriate.
MA.7.A.1.3#:	Solve problems involving similar figures.	Items may include graphic representations of three-dimensional objects, but the similar figures being assessed must be two-dimensional figures. ------- Items may include diagonals of two-dimensional figures. ------ Items will not require the use of the Pythagorean theorem. ------- Items will not include circles. ------ Items will not include how changes in dimensions affect perimeter, circumference, area, or volume.
MA.7.A.1.4#:	Graph proportional relationships and identify the unit rate as the slope of the related linear function.	Students should NOT be expected to use y=mx+b or the slope formula in order to solve items in this benchmark. ------ Items will NOT include determining the slope using formulas. ------- For graphs showing a line of a proportional relationship, the line must pass through the origin. ------- Graphs should use dashed lines for discrete values. -------- Items may include up to two variables, with no more than five procedural steps needed to evaluate the expression, equation, or inequality. ----- Items may include the use of whole numbers, fractions, and terminating decimals as indicated in the general content limits. ------ Items may include all four quadrants on a coordinate grid. ------ Items may include the concept of positive slope, negative slope, no slope, or zero slope.

MA.7.A.1.5#:	Distinguish direct variation from other relationships, including inverse variation.	Items may include graphs, using four quadrants, function tables, and situations. ------ Representations (graphs, tables, situations) used in the item may be nonlinear: however, items will not assess the vocabulary related to nonlinear relationships (i.e., *parabolas* , *quadratic*). ------ Graphs in items with real-world context are limited to the first quadrant only. ----- Graphs in items with mathematical context may use all four quadrants.
MA.7.A.1.6#:	Apply proportionality to measurement in multiple contexts, including scale drawings and constant speed.	Measurements may be in either metric or customary units, but measurements from both systems may not be used in the same item. ------ Items may include the concepts of average speed or constant speed. ------ Items may include fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, 16, 20, 24, 25, 32, or 50. ------- Items may include decimals through the hundredths place. ------- Items will NOT include circumference, perimeter, area, or volume. ------- Items will NOT include percents of increase or decrease. ------- Items will NOT include converting units between two derived units (e.g., converting miles per hour to feet per second).
MA.7.A.3.1#:	Use and justify the rules for adding, subtracting, multiplying, dividing, and finding the absolute value of integers.	Items may include the effects of the four basic operations on integers, and the use of properties of real numbers to solve problems (commutative, associative, distributive, identity, equality, inverse, and the inverse relationship of positive and negative numbers). -------- Items should include at lease one integer in the computation. ------- Items may use fractions less than 1 with numerators and denominators less than 100. ------ Items may use decimals to the ten-thousandths place. ------- Items may include up to three operations, with no more than five procedural steps needed to evaluate the expression.
MA.7.A.3.2#:	Add, subtract, multiply, and divide integers, fractions, and terminating decimals, and perform exponential operations with rational bases and whole number exponents including solving problems in everyday contexts.	Items may include up to three operations and up to five procedural steps. ------- Items may include at least one negative integer, a fraction, or a terminating decimal. ------- Items using exponents are limited to whole-number exponents less than or equal to 4. ------ Items will not include raising an exponential expression to a power. ------- Items will not include scientific notation.

MA.7.A.3.3#:	Formulate and use different strategies to solve one-step and two-step linear equations, including equations with rational coefficients.	Items involving finding a solution should be limited to a variable on one side of the equation. ------ Items identifying formulating an equation for a situation may involve two variables. ------ Items may not exceed two (of the four) operations in one linear equation. ------ Items may not include irrational coefficients.
MA.7.A.3.4#:	Use the properties of equality to represent an equation in a different way and to show that two equations are equivalent in a given context.	Items may include up to three operations. ----- Equations (or expressions) used in items may include up to three operations. ------- Coefficients and constants used in multistep equations (or expressions) must be integers. ------- Items that contain one-step equations may use fractions less than 1.
MA.7.A.5.1#:	Express rational numbers as terminating or repeating decimals.	Items may include mixed numbers, fractions, and decimals that are terminating or repeating. ------- Items will not include irrational numbers. --------- Items will not include converting a repeating decimal to a fraction or mixed number. ------- Decimals that must be converted to fractions must terminate by the thousandths place.
MA.7.A.5.2#:	Solve non-routine problems by working backwards.	Assessed with MA.7.A.3.3
MA.7.G.2.1#:	Justify and apply formulas for surface area and volume of pyramids, prisms, cylinders, and cones.	Dimensions of given figures will be whole numbers. ------ Problems related to surface area will not include cones, but problems related to volume can include cones. ------- In calculating surface area and volume of simple shapes, dimensions of given figures will be whole numbers.
MA.7.G.2.2#:	Use formulas to find surface areas and volume of three-dimensional composite shapes.	Students will solve problems involving surface area or volume using the decomposition of three-dimensional figures. ------- Three-dimensional figures used in composite figures are limited to three and may include right-rectangular prisms, right triangular prisms, right-square pyramids, right circular cylinders, and cones. ------- Problems related to surface area will not include cones, but problems related to volume can include cones. ------- Items that include cones and cylinders used in the composition or decomposition may include whole figures, half-figures, or quarter-figures. ------- Right-square pyramids used in the composition or decomposition must be whole pyramids only. ------- Items will not include truncated cones and pyramids. ------ Dimensions of composite figures used in calculations will be whole numbers.

MA.7.G.4.1#:	Determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures, and apply these relationships to solve problems.	Items that increase the dimensions of a figure should use scale factors that are whole numbers less than or equal to 25. ------- Items that decrease the dimensions of a figure should use scale factors of 1/2, 1/3, 1/4, 1/5, 1/10, 10%, 20%, 25%, or 50%. Distractors in multiple choice items may exceed this limit. ------- Items assessing change in volume should only include right-rectangular prisms and right-circular cylinders. ------- Items will not assess changes in surface area.
MA.7.G.4.2#:	Predict the results of transformations, and draw transformed figures with and without the coordinate plane.	Items may include dilations, translations, reflections, and rotations of two-dimensional figures. ------- Items that include translations will be limited to horizontal or vertical moves. ------ Items may include lines of reflection, which may or may not pass through the object being reflected. ------- Items may include centers of rotation, which may or may not be on the object being rotated. ------- Items may include clockwise and counterclockwise rotations, which are limited to 45, 90, 180, 270, and 360 degrees. ------ Items may present figures on coordinate grids, which may include all four quadrants. ------- Items may include the concepts of symmetry, congruency, or scale factors. ------- Items may include up to three transformations.
MA.7.G.4.3#:	Identify and plot ordered pairs in all four quadrants of the coordinate plane.	Scales on graphs used in items must be in increments of 1 for both the x- and y-axes. ------- Both coordinates of all points used in items must be between -10 and 10, inclusive. ------- Items will not include finding the midpoint of a segment, the slope of a line, or use of the distance formula. -------- Items will not include determining the x- or y-intercepts of a line.

MA.7.G.4.4#:	Compare, contrast, and convert units of measure between different measurement systems (US customary or metric (SI)), dimensions, and derived units to solve problems.	Items may include conversions from customary to metric or vice versa, using only one of the conversions found on the reference sheet. -------- Items may include up to three conversions within the same system of measurement (e.g., millimeters to centimeters, centimeters to meters, and meters to kilometers). ------ Items may include conversions within the same unit of measure when converting derived units (e.g., miles per hour to feet per second). ------ Items may include converting a denominate number (e.g., 5 ft 3 in.) to a single unit within the same system of measurement, or vice versa. ------- Gridded-response items may only involve conversions within the same system of measurement. ------- Items will not include a combination of multiple conversions within the same system and across different measurement systems (e.g., convert meters to inches).
MA.7.P.7.1#:	Determine the outcome of an experiment and predict which events are likely or unlikely, and if the experiment is fair or unfair.	Items may include concepts such as certain, impossible, likelihood, fair, unfair, most likely, equally likely, and least likely. ------- Items will include only simple events. ------- Items may include representing probabilities as fractions, ratios, decimals between 0 and 1 (inclusive), and/or percentages between 0 and 100 (inclusive). ------- Items will not include combinations or permutations. ------- In items involving the determination of all possible outcomes, the number of outcomes should not exceed 36.
MA.7.P.7.2#:	Determine, compare, and make predictions based on experimental or theoretical probability of independent or dependent events,	Items may include determining the probability of a compound event both with and without replacement. -------- Items may include distinguishing between independent and dependent events. ------- Probabilities should be expressed as whole numbers, fractions, or decimals. ------- Items assessing compound events should not exceed sixteen outcomes in a sample space.
MA.7.S.6.1#:	Evaluate the reasonableness of a sample to determine the appropriateness of generalizations made about the population.	Items may include common misuses of statistics based on an inadequate or nonrepresentative sample, or an over-generalized result. ------ Items may provide measures of central tendency or range. ------- Items will not include calculating measures of central tendency or range. ------- No more than 25 sets of data are to be displayed. ------- The sample size should not exceed the general content limits.

MA.7.S.6.2#:	Construct and analyze histograms, stem-and-leaf plots, and circle graphs.	Items may provide or include calculating measures of central tendency and range of the dat displayed in histograms, stem-and-leaf plots, and circle graphs only. ------- The number of data pieces displayed should not exceed ten when a measure of central tendency is being calculated. ------- The number of data pieces displayed should not exceed 25 when a measure of central tendency is not being calculated. ------- Percents used in items assessing circle graphs will be limited to whole-number percents.