

**I AM Performance Level Descriptors (PLDs)
Grade 8 Mathematics**

	Content Connector	Below Proficiency	Approaching Proficiency	At Proficiency
Algebra and Functions				
MA.8.AF.1.a.1	Solve linear equations with two steps based on real world problems.	Recognizes linear equations.	Solves linear equations with one step.	Solves linear equations with two steps based on real world problems.
MA.8.AF.2.a.1	Recognize when a linear equation has one solution, infinitely many solutions, or no solutions.	Selects a linear equation.	Recognizes when a linear equation has one solution	Recognizes when a linear equation has one solution, infinitely many solutions, or no solutions.
MA.8.AF.3.a.1	Distinguish between functions and non-functions in graphs or tables.	Recognizes graphs and tables.	Recognizes functions and nonfunctions in graphs and tables.	Distinguishes between functions and non-functions in graphs and tables.
MA.8.AF.4.a.1	Given a graph, describe the defining features of a function.	Selects at least one feature of a function.	Given a graph, defines at least one feature of a function.	Given a graph, defines multiple features of a function.
MA.8.AF.4.a.2	Given a verbal situation, identify its corresponding graph.	Given a verbal situation, selects at least one feature of a function.	Given a verbal situation, defines at least one feature of a corresponding graph.	Given a verbal situation, identifies its corresponding graph.
MA.8.AF.4.a.3	Given a line graph of a situation, describe or select its qualitative features.	Identifies a line graph of a given situation.	Given a line graph of a situation, describes or selects a qualitative feature.	Given a line graph of a situation, describes or selects multiple qualitative features.
MA.8.AF.5.a.1	Given multiple representations, describe a function as linear or not linear.	Given a graphic representation, select a function as linear or not linear.	Given multiple representations of the same type, selects a function as linear or not linear.	Given multiple representations (equation, map, graph, table), describes a function as linear or not linear.

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MA.8.AF.6.a.1	Identify the rate of change (slope) and initial value (y-intercept) from graphs.	Identifies the slope as positive or negative.	Selects the slope or y-intercept from graphs (using these terms).	Identifies the rate of change (slope) and initial value (y-intercept) from graphs.
MA.8.AF.7.a.1	Given a table or a graph, compare two linear functions to answer a question about rates.	Given a graph, selects a slope.	Given a table or a graph, determines two individual slopes.	Given a table or a graph, compares two linear functions to answer a question about rates, including simple cases of unit rates.
MA.8.AF.8.a.1	Given a graph, identify the solution to a system of linear equations.	Recognizes the format of an ordered pair.	Given a graph, recognizes an ordered pair, but with the coordinates in the incorrect order.	Given a graph, identifies the solution to a system of linear equations.
Geometry and Measurement				
MA.8.GM.1.a.1	Identify and describe attributes of three-dimensional geometric objects.	Chooses three-dimensional objects given visual clues.	Identifies the attributes of three-dimensional objects.	Identifies and describes the attributes of three-dimensional objects.
MA.8.GM.2.a.1	Apply the formula to find the volume of three-dimensional shapes (e.g., cubes, spheres, and cylinders).	Identifies three-dimensional objects.	Solves a problem using the mathematical formula for volume of at least one shape.	Applies the mathematical formula to find the volume of multiple three-dimensional shapes.
MA.8.GM.3.a.1	Recognize a rotation, reflection, or translation of a figure.	Matches the figures in a plane.	Recognizes either the rotation, reflection, or translation of a figure.	Recognizes a rotation, reflection, or translation of a figure.
MA.8.GM.4.a.1	Describe a sequence of transformations between two congruent figures.	Recognizes congruent figures.	Identifies a sequence of transformations between two congruent figures.	Describes a sequence of transformations between two congruent figures.
MA.8.GM.5.a.1	Describe a sequence of transformations between two similar figures.	Identifies similar figures.	Identifies part of a sequence of transformations between two similar figures.	Describes a sequence of transformations between two similar figures.
MA.8.GM.6.a.1	Describe the effects of transformations on the coordinates of a figure.	Identifies the coordinates of a given figure.	Identifies some part of the effects of transformations on the coordinates of a figure.	Describes the effects of transformations on the coordinates of a figure.

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MA.8.GM.7.a.1	Given the lengths of the sides of a right triangle, determine which one must be the hypotenuse.	Determines the hypotenuse of a right triangle when given the lengths of its sides.	Determines the hypotenuse of a right triangle when given the lengths of its sides.	Determines the hypotenuse of a right triangle when given the lengths of its sides.
MA.8.GM.8.a.1	Apply the Pythagorean Theorem to determine lengths/distances in real-world situations.	Shows relationships between the sides of a triangle.	Attempts to use the Pythagorean Theorem to determine the hypotenuse of a triangle in real-world situations.	Applies the Pythagorean Theorem to determine lengths/distances of all parts of a triangle in real-world situations.
MA.8.GM.8.a.2	Find the hypotenuse of a right triangle using the Pythagorean Theorem.	Identifies the relationships between the sides of a triangle.	Attempts to use the Pythagorean Theorem to answer a question.	Finds the hypotenuse of a right triangle using the Pythagorean Theorem.
MA.8.GM.9.a.1	Apply the Pythagorean Theorem to determine lengths/distances on a coordinate plane.	Attempts to count the length of the legs of the triangle.	Attempts to use the Pythagorean Theorem to answer a problem on the coordinate plane.	Applies the Pythagorean Theorem to determine lengths/distances on a coordinate plane.
Data Analysis, Statistics and Probability				
MA.8.DSP.1.a.1	Graph bivariate data using scatter plots and identify possible associations between the variables.	When graphs are given, selects data when given clear associations and obvious answers.	When graphs are given, selects bivariate data using scatter plots and identifies positive, negative, and no associations between the variables.	Graphs bivariate data using scatter plots and identifies positive, negative, and no associations between the variables.
MA.8.DSP.1.a.2	Using scatter plots, identify data points that appear to be outliers.	Identifies a scatter plot.	Using scatter plots, identifies data points that appear to be obvious outliers by clicking on the correct plot.	Using scatter plots, identifies coordinates and data points that appear to be outliers.
MA.8.DSP.2.a.1	Identify a linear association when analyzing bivariate data on a scatter plot.	Given a linear set of data graphed, identifies the line of best fit.	When given lines, selects a line of best fit.	Identifies a linear association (best fit line equation) when analyzing bivariate data on a scatter plot.
MA.8.DSP.3.a.1	Use the line of best fit to find a point that answers a question about the data.	When given a graph, selects a point from the data.	Uses the line of best fit to find a point, but may not answer a question about the data.	Uses the line of best fit to find a point that answers a question about the data.

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MA.8.DSP.4.a.1	Determine the probability of simple events.	Identifies parts in a probability situation.	Determines the likelihood of an event.	Determines the probability of simple events.
MA.8.DSP.5.a.1	Determine the theoretical probability of multi-stage probability experiments (2 coins, 2 dice).	Identifies parts in a probability situation.	Determines the theoretical probability of each event correctly (2 coins, 2 dice).	Determines the theoretical probability of multi-stage probability experiments (2 coins, 2 dice). Can find probability of each event and multiply correctly.
MA.8.DSP.6.a.1	Use the multiplication counting principle to determine the total number of outcomes.	Correctly counts the total number of samples.	Given a limited number of outcomes, uses the multiplication counting principle to determine the total number of outcomes.	Uses the multiplication counting principle to determine the total number of outcomes.
Number Sense and Computation				
MA.8.C.1.a.1	Solve real-world problems with rational numbers by using two operations.	Identifies rational numbers.	Uses rational numbers to solve one- operation equations.	Uses rational numbers to solve two- operation, real-world problems.
MA.8.C.2.a.1	Perform operations with numbers expressed in scientific notation.	Identifies a number in scientific notation.	Performs a single operation with numbers in scientific notation.	Performs multiple operations with numbers expressed in scientific notation.
MA.8.NS.1.a.1	Identify rational and irrational numbers.	Groups numbers by fractions, decimals, or radicals.	Identifies either rational or irrational numbers.	Identifies rational and irrational numbers.
MA.8.NS.1.a.2	Round real numbers to the hundredths place.	Rounds to the nearest integer.	Identifies the hundredth place and rounds to the nearest tenth.	Rounds real numbers to the hundredths place.
MA.8.NS.2.a.1	Use the estimate of irrational numbers to locate them on a number line.	Identifies rational numbers line on a number line.	Locates irrational numbers on a number line.	Estimates irrational numbers to locate them on a number line.

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MA.8.NS.3.a.1	Use properties of integer exponents to produce equivalent expressions.	Identifies integer exponents.	Identifies equivalent expressions.	Uses properties of integer exponents to produce equivalent expressions.
MA.8.NS.4.a.1	Solve equations using properties of square roots.	Evaluates radical expressions.	Isolates and solves the basic square root variables in an equation.	Solves equations using properties of square roots.
Process Standards				
PS.1	Make sense of problems and persevere in solving them.	Identifies given quantities and unknowns for a given problem.	Identifies what question is asking, relevant or irrelevant information, and can set up solution method.	Makes sense of and solves problems.
PS.2	Reason abstractly and quantitatively.	Represents a problem using numbers and symbols.	Identifies a symbolic expression or equation that represents a problem situation.	Creates symbolic expressions or equations to represent problem situations.
PS.3	Construct viable arguments and critique the reasoning of others.	Identifies clearly invalid arguments, without justification or explanation.	Identifies the flaws in a given argument.	Constructs arguments and justifications for mathematical thinking, and critiques the reasoning of others.
PS.4	Model with mathematics.	Identifies parts of a real-world problem.	Creates a model to represent a real-world problem.	Applies math knowledge to solve real-world problems using a variety of models and representations and reflects to make sure the answer makes sense.
PS.5	Use appropriate tools strategically.	Recognizes familiar mathematic tools.	Uses familiar tools to aid mathematical process.	Uses relevant mathematical tools and external mathematical resources to communicate mathematical ideas.

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PS.6	Attend to precision.	Identifies common mathematical definitions.	Uses common mathematical vocabulary to connect or explain simple mathematical concepts.	Communicates correct mathematical language with appropriate precision and context.
PS.7	Look for and make use of structure.	Identifies simple structures.	Identifies the rules for simple numeric and geometric structures, and uses those rules to extend a pattern.	Applies structural classifications and patterns to answer problems in a variety of ways.
PS.8	Look for and express regularity in repeated reasoning.	Identifies simple examples of repeated reasoning or patterns.	Identifies the rules exhibited in repeated reasoning or patterns.	Applies repeated reasoning to develop general methods, rules, and short-cuts for solving mathematical problems.