

**I AM Performance Level Descriptors (PLDs)
Grade 10 Mathematics**

	Content Connector	Below Proficiency	Approaching Proficiency	At Proficiency
Equations and Inequalities (Linear and Systems)				
MA10.EI.1.a.1	Solve linear equations with integer coefficients using one or two steps.	Substitutes values into a linear equation.	Solves a one-step linear equation.	Solve linear equations with integer coefficients using one or two steps.
MA10.EI.2.a.1	Recognize when a linear equation has one solution, infinitely many solutions, or no solutions.	Identifies concept of a linear equation.	Identifies one solution in linear equation.	Recognizes when a linear equation has one solution, infinitely many solutions, or no solutions.
MA10.EI.3.a.1	Translate a real-world problem into a one-variable linear equation.	Identifies the variable in the real-world problem.	Attempts to translates a real-world problem into a linear equation.	Translates a real-world problem into a one-variable linear equation.
MA10.EI.4.a.1	Represent a real-world situation using a proportion.	Identifies a proportion in the real-world problem.	Attempt to write a proportion from a real-world situation.	Represents a real-world situation using a proportion.
MA10.EI.5.a.1	Identify solutions from the graph of a linear inequality within a real-world problem.	Identifies linear inequality within a real-world problem.	Identifies single solution from the graph of a linear inequality.	Identifies solutions from the graph of a linear inequality within a real-world problem.
MA10.EI.6.a.1	Finds a solution of compound inequalities given a graph.	Graphs inequalities on a number line.	Determines if single solution satisfies inequality conditions.	Finds a solution of compound inequalities given a graph.
MA10.EI.7.a.1	Solves literal equations for a specified variable.	Identifies specified variable.	Solves equations with one variable.	Solves literal equations for specified variable.
MA10.EI.8.a.1	Evaluate the absolute value of an expression.	Identifies expression containing absolute value.	Evaluates expressions.	Evaluates absolute value of an expression.

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MA10.EI.9.a.1	Identify an absolute value graph.	Identifies absolute value graph.	Identifies absolute value graph.	Identifies absolute value graph.
MA10.SEI.1.a.1	Identify the solution to a system of linear equations given a graph.	Identifies a solution to one equation in the system of equations.	Identifies a labeled point that is a solution to the system of linear equations.	Identifies the coordinates/point of the solution of a system of a linear equation given a graph.
MA10.SEI.2.a.1	Solve a system of linear equations.	Checks a solution in both multiple equations.	Uses elimination method to solve system of linear equation.	Solves a system of linear equations.
MA10.SEI.3.a.1	Choose a system of linear equations that represents a given real-world problem.	Identifies variables when given real world problems.	Chooses a system of linear equations.	Chooses linear equations that represent real world problems.
MA10.SEI.4.a.1	Identify the solution set to a system of inequalities.	Identifies the graphs on the corresponding linear equations.	Identifies a single point in solution set of a system of inequalities.	Chooses the correct solution to a set of inequalities.
Functions (Linear and Non-linear)				
MA10.F.1.a.1	Given multiple representations, describe a function as linear and not linear.	Identifies a function as linear and not linear using one representation.	Identifies a function as linear and not linear using a graph and an equation.	Given multiple representations, describes a function as linear and non linear.
MA10.F.2.a.1	Identify the rate of change (slope) and initial value (y-intercept) from graphs.	Identifies the rate of change (slope) as positive, negative, or constant from graphs.	Identifies either the rate of change (slope) or initial value (y-intercept) from graphs.	Identifies the rate of change (slope) and initial value (y-intercept) from graphs.
MA10.F.4.a.1	Interpret the rate of change using graphical representations of a real-world situation.	Identifies that a rate of change occurred.	Identifies the rate of change using graphical representations of a real-world situation.	Interprets the rate of change using graphical representations of a real-world situation.

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MA10.F.5.a.1	Describe the attributes of an equation given various forms.	Identifies various forms of an equation.	Describes the attributes of one form of an equation.	Describes the attributes of an equation given various forms.
MA10.F.6.a.1	Given a table or a graph, compare two linear functions to answer a question about rates.	Given a table or a graph, identifies the rate of one linear function.	Given a table or a graph, identifies the rate of both linear functions.	Given a table or graph, compare the rates of two linear functions to answer a question about rates.
MA10.F.7.a.1	Distinguish between functions and non-functions within graphs or tables.	Identifies that a graph is a function.	Distinguish between functions and non-functions given a graph.	Distinguish between functions and non-functions within graphs or tables.
MA10.F.8.a.1	Identify the domain and range from a table or graph.	Identifies the domain or range from a table.	Identifies the domain and range from a table.	Identifies the domain and range from a table or graph.
MA10.F.9.a.1	Given the qualitative features, sketch a graph.	Chooses the graph with the correct extrema (maxima and/or minima).	Chooses the graph with some of the qualitative features.	Chooses the correct graph with all the qualitative features.
MA10.F.9.a.2	Given a sketch, describe and make predictions about the relationship between the variables.	Given a sketch, identifies characteristics of the sketch.	Given a sketch, describes the relationship between the variables.	Given a sketch, describes and make predictions about the relationship between the variables.
MA10.F.9.a.3	Given multiple graphs, describe the defining features of a function.	Given a graph, identifies a feature of a function.	Given a graph, describes some of the defining features of a function.	Given a graph, describes all the defining features of a function.
MA10.F.9.a.4	Given a verbal description, create or identify a graph to model the situation.	Given a verbal description without values, chooses an appropriate linear or quadratic graph.	Given a verbal description with one value, chooses an appropriate graph to represent the given linear or quadratic situation.	Given a verbal description with multiple values, identifies a specific linear or quadratic graph to model the situation.
MA10.F.10.a.1	Interpret statements that use function notation in terms of a context.	Recognize statements that use function notation.	Recognize statements that use function notation in terms of a context.	Interpret statements that use function notation in terms of a context.
MA10.QEEF.1.a.1	Given multiple graphs, describe the function as linear or not linear.	Given a graph, describes the function as linear or not linear.	Given a graph, describes the function as linear or not linear.	Given a graph, describes the function as linear or not linear.

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MA10.QEEF.2.a.1	Determine if points lie on a graph of an exponential or quadratic function.	Determines if a graph is a quadratic or exponential function.	Determines if an equation is a quadratic or exponential function.	Determines if an equation, graph or table of points are an exponential or quadratic function.
MA10.QEEF.3.a.1	Solve equations using the properties of square roots.	Solves a square root equation with perfect square roots (not exceeding 100).	Solves a square root equation involving non-perfect square roots.	Solves equations using the properties of square roots.
MA10.QEEF.4.a.1	Determine if points lie on a graph of a quadratic function of a real-world situation.	Identifies if a point is a possible solution, given a graph.	Identifies if a point is a possible solution of a quadratic function of a real-world situation.	Determines if points lie on a graph of a quadratic function of a real-world situation.
MA10.QEEF.5.a.1	Describe attributes of a quadratic function in a real-world problem.	Identifies an attribute of a quadratic function.	Describes the attributes of a quadratic function.	Describes the attributes of a quadratic function in a real-world problem.
MA10.QEEF.6.a.1	With a model, answer questions about exponential functions.	Given a model, identifies a feature of an exponential function.	Given a model, identifies features of an exponential function.	Given a model, answer questions about exponential functions.
Geometry and Measurement				
MA10.GM.1.a.1	Identify and describe attributes of three-dimensional geometric objects.	Given a list of attributes, matches to 3-D object.	Identifies attributes of 3-D object.	Identifies and describes attributes of 3-D geometric objects.
MA10.GM.2.a.1	Apply the formula to find the volume of three-dimensional shapes (e.g., cubes, spheres, and cylinders).	Identifies corresponding formula to find volume of 3-D Shapes from given list.	Substitutes numbers into formula to find volume of three-dimensional shapes.	Applies the formula to find the volume of three-dimensional shapes.
MA10.GM.3.a.1	Describe a sequence of transformations between two congruent figures.	Identifies congruent shapes that have been translated (moved in 1 direction).	Identifies congruent shapes that have been a multiple step transformation.	Describes sequence of transformations between two congruent figures.

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MA10.GM.4.a.1	Describe the effects of transformations on the coordinates of a figure.	Identifies corresponding coordinates that have been translated only.	Identifies corresponding coordinate that have been transformed no more than two times.	Describes the effects of transformation of coordinates of a figure.
MA10.GM.5.a.1	Apply the Pythagorean Theorem to determine lengths/distances in real-world situations.	Given the Pythagorean Theorem and two legs of a triangle, applies with perfect square numbers.	Solves problems with Pythagorean Theorem.	Applies Pythagorean Theorem to determines lengths/distances in real world situations.
MA10.GM.5.a.2	Find the hypotenuse of a two-dimensional right triangle (Pythagorean Theorem).	Identifies which side of right triangle is hypotenuse.	Given all three side lengths of triangle, determines using the Pythagorean Theorem, if it is a right triangle.	Finds the hypotenuse of a two-dimensional right triangle.
MA10.GM.6.a.1	Apply the Pythagorean Theorem to determine lengths/distances on a coordinate plane.	Compares segment lengths on a coordinate plane.	Given triangle on a coordinate plane, uses Pythagorean Theorem to determines length and distance.	Applies the Pythagorean Theorem to determines lengths/distances on a coordinate plane.
Number Sense and Data Analysis				
MA10.DASP.1.a.1	Graph bivariate data using scatter plots and identify possible associations between the variables.	Identifies bivariate data.	Graphs bivariate data using scatter plots.	Graphs bivariate data using scatter plots and identifies possible associations between the variables.
MA10.DASP.1.a.2	Using scatter plots, identify data points that appear to be outliers.	Identifies a scatter plot.	Using scatter plots, identifies data points; understand data trend.	Using scatter plots, identifies data points that appear to be outliers.
MA10.DASP.2.a.1	Determine the theoretical probability of multi-stage probability experiments (2 coins, 2 dice).	Given the sample space and formula, makes appropriate calculations.	Given the sample space of each individual event, determines the theoretical probability of multi-stage probability experiments.	Determines the theoretical probability of multi-stage probability experiments.

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MA10.DASP.2.a.2	Collect data from multi-stage probability experiments (2 coins, 2 dice).	Recognizes a multi-stage probability experiment.	Collects data from one probability experiment.	Collects data from multi-stage probability experiments.
MA10.DASP.3.a.1	Use the multiplication counting principle to determine the total number of outcomes.	Recognizes that there are multiple outcomes.	Identifies the multiplication counting principle and attempt computation.	Uses the multiplication counting principle to determine the total number of outcomes.
MA10.DASP.4.a.1	Determine whether a sampling method was random or nonrandom.	Understands what a sample size is.	Understands what random and nonrandom sampling is.	Determines whether a sampling method was random or nonrandom.
MA10.DASP.6.a.1	Use the line of best fit to find a point that answers a question about the data.	Determines if a given line of best fit best represents the data.	Writes a line of best fit for the data.	Uses a line of best fit to find a point that answers a question about the data.
MA10.DASP.7.a.1	Interpret a two-way table summarizing data on two categorical variables collected from the same subjects using relative frequencies calculated for rows or columns.	Given pertinent information from a two-way table, calculates appropriately.	Distinguishes independent parts of a two-way table.	Interprets a two-way table summarizing data on two categorical variables collected from the same subjects using relative frequencies calculated for rows or columns.
MA10.NSEC.1.a.1	Identify rational and irrational numbers.	Understands what a rational number is.	Understands the difference between rational and irrational numbers.	Identifies rational and irrational numbers.
MA10.NSEC.1.a.2	Round irrational numbers to the hundredths place.	Rounds to hundredths place.	Identifies numbers as irrational number.	Rounds irrational numbers to the hundredths place.
MA10.NSEC.2.a.1	Use the estimate of irrational numbers to locate them on a number line.	Estimates irrational numbers.	Locates and plots irrational numbers on a number line between two integers.	Uses the estimate of irrational numbers to locate them on a number line to the hundredths place.

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MA10.NSEC.3.a.1	Use properties of integer exponents to produce equivalent expressions.	Simplifies a numerical expression with a single integer exponent.	Identifies properties of integer exponents.	Uses properties of integer exponents to produce equivalent expressions.
MA10.NSEC.6.a.1	Solve real-world problems with rational numbers by using two operations.	Given the operations to solve a real-world problem involving integers, computes problem.	Identifies operations when solving problems requiring two operations with rational numbers.	Solves real-world problems with rational numbers by using two operations.
MA10.NSEC.8.a.1	Simplify numeric exponential expressions in rational form.	Identifies that an exponent is a series of multiplication.	Uses properties of exponents to expand a rational expression to attempt to simplify.	Simplifies numeric exponential expressions in rational form.
MA10.NSEC.9.a.1	Use factoring to find equivalent expressions.	Knows process of factoring numbers.	Identifies that polynomial can be factored.	Uses factoring to find equivalent expressions.
MA10.NSEC.10.a.1	add and subtract polynomials.	Finds a monomial with in a polynomial.	Combines like terms.	Adds and subtracts polynomials.
MA10.NSEC.10.a.2	Multiply polynomials.	Uses distributive property.	Multiplies a polynomial and monomial	Multiplies polynomials.
MA10.NSEC.10.a.3	Divide a polynomial by a monomial.	Divides/simplifies a monomial.	Breaks a polynomial divided by a monomial into a series of individual monomials.	Divides a polynomial by a monomial.
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.

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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.
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.