

SEC PLD	Standard	Below Proficient	Approaching Proficient	Proficient	Highly Proficient
Policy		The Level 1 student is below proficient in applying the English language arts/literacy, mathematics, and science knowledge/skills as specified in the Utah Core State Standards. The student generally performs significantly below the standard for the grade-level/course, is likely able to partially access grade level content and engages with higher order thinking skills with extensive support.	The Level 2 student is approaching proficient in applying the English language arts/literacy, mathematics, and science knowledge/skills as specified in the Utah Core State Standards. The student generally performs slightly below the standard for the grade level/course, is able to access grade-level content and engages in higher order thinking skills with some independence and support.	The Level 3 student is proficient in applying the English language arts/literacy, mathematics, and science knowledge/skills as specified in the Utah Core State Standards. The student generally performs at the standard for the grade level/course, is able to access grade-level content, and engages in higher order thinking skills with some independence and minimal support.	The Level 4 student is highly proficient in applying the English language arts/literacy, mathematics, and science knowledge/skills as specified in the Utah Core State Standards. The student generally performs significantly above the standard for the grade level/course, is able to access above grade-level content, and engages in higher order thinking skills independently.
NUMBER AND QUANTITY/Functions					
		The Level 1 Student:	The Level 2 Student:	The Level 3 Student:	The Level 4 Student:
Range	N.Q.1	Draws conclusions and makes inferences with respect to the units involved when given a scaled graph.	Selects and uses appropriate scales- to create linear and exponential graphs with context.	Uses units as a way to understand problems and to guide the solution of multi-step problems; chooses and interprets units consistently in formulas; chooses and interprets the scale and the origin in graphs and data displays.	Evaluates aspects of misleading graphs and explains needed corrections.
Range	N.Q.2	Selects the most appropriate unit for the situation when given a context.	Identifies a situation or context which can be measured using a given unit or quantity.	Creates and defines appropriate quantities for the purpose of descriptive modeling.	Justifies the units or quantities selected for a given context or situation.
Range	N.Q.3	Determines the appropriate power of ten to reasonably measure a quantity. Determines whether whole numbers, fractions, or decimals are most appropriate.	Determines what level of rounding should be used in a problem-solving situation. Determines the resulting accuracy in calculations.	Chooses a level of accuracy appropriate to limitations on measurement when reporting quantities.	Explains the level of accuracy selected.
Number and Quantity/FUNCTIONS					
		The Level 1 Student:	The Level 2 Student:	The Level 3 Student:	The Level 4 Student:
Range	F.IF.1	Identifies functions, including functions represented in equations, tables, graphs, or context.	Writes relations in function notation.	Demonstrates understanding that a function's domain assigns to exactly one element of the range. Understands input and output values.	Applies and extends knowledge of domain and range to real world situations and contexts.
Range	F.IF.2	Evaluates simple functions in their domains. Rewrites an equation in function notation when given in $y =$ form.	Evaluates functions for inputs in their domain. Writes functions using function notation (without context).	Uses function notation and evaluates functions for inputs in their domain, and interprets statements that use function notation in terms of context.	Creates context from a given domain and range and uses function notation to write an equation to model the context.
Range	F.IF.3	Identifies the parts of a recursive function or sequence.	Defines and expresses a recursive sequence as a function.	Recognizes that sequences are functions. Recognizes that a sequence has a domain which is the subset of integers and can generate a sequence given a recursive function.	Applies the ideas of sequences being functions to real world contexts.
Range	F.IF.4	Identifies the key features (as listed in the Standard) when given a linear or exponential graph.	Interprets the key features (as listed in the Standard) when given a linear or exponential graph.	Identifies and interprets the key features (as listed in the Standard) when given a table of values for a linear or exponential function. Sketches graphs of linear or exponential functions, showing key features, when given a verbal description of the relationship.	Accurately creates a story or context that models the given key features of linear or exponential functions.

Range	F.IF.5	Identifies domains of functions when given a graph.	Relates the domain of a function to its graph and graphs a function given a restricted domain.	Relates the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. Graphs a function given a restricted domain and identifies reasonability of a domain in a particular context.	Creates a function for a given context where the domain meets given parameters.
Range	F.IF.6	Determines the rate of change of a linear function presented algebraically.	Determines the rate of change of an exponential function presented algebraically.	Calculates and interprets the average rate of change of a function presented symbolically or as a table over a specified interval.	Estimates the rate of change from a graph.
Range	F.IF.7a	Identifies the graph of a linear function given its equation.	Constructs the graph of a linear function given its equation.	Constructs the graph of a linear function given its equation and identifies the x - and y -intercepts.	Graphs linear equations generated from real-life contexts.
Range	F.IF.7e	Identifies the graph of an exponential function given its equation.	Constructs the graph of an exponential function given its equation.	Constructs the graph of an exponential function given its equation and identifies the intercepts and end behavior.	Graphs exponential equations generated from real-life contexts.
Range	F.IF.9	Compares slopes and y -intercepts of two linear functions where one is presented graphically and the other is presented in slope-intercept form.	Compares growth rates and intercepts of two exponential functions where one is presented graphically and the other is presented in function notation.	Uses tables, graphs, algebra, and verbal descriptions to compare properties of two functions (linear and/or exponential).	Constructs a linear or exponential function that has a characteristic (i.e. slope, intercept, maximum) that is greater than or lesser than a given function.
Range	F.BF.1a	Recognizes a relationship as explicit or recursive.	Writes an explicit or recursive expression for a linear function.	Writes an explicit or recursive expression for a linear or exponential function or recursive process for a given context.	Describes steps to model a given linear or exponential context with mathematical representations.
Range	F.BF.1b	Combines linear functions using addition and multiplication.	Combines linear and/or exponential functions using addition and multiplication.	Combines linear and/or exponential functions using addition, subtraction, multiplication, and division.	Builds a function that models a given situation by adding another function that alters the situation, and relates these individual and combined functions to the model.
Range	F.BF.2	Recognizes if a sequence is arithmetic, geometric, or neither.	Writes arithmetic and/or geometric sequences with an explicit formula.	Writes arithmetic and geometric sequences both recursively and with an explicit formula.	Models contextual situations with arithmetic and geometric sequences (as appropriate).
Range	F.BF.3	Relates the vertical translation of a linear function to its y -intercept.	Performs vertical translations on linear functions.	Performs vertical translations on linear and exponential graphs. Describes what will happen to a linear or exponential function when $f(x)$ is replaced by $f(x) + k$ for different values of k .	Find the value of k given $f(x)$ replaced by $f(x) + k$ on a graph of linear or exponential functions.
Range	F.LE.1a, b, c	Recognizes relationships in tables and graphs that can be modeled with linear functions (constant rate of change) and with exponential functions (exponential rate of change).	Shows that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals.	Recognizes situations in which one quantity changes at a constant rate per unit interval relative to another.	Describes the rate of change per unit as constant or the growth factor as a constant percentage. Proves that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals.
Range	F.LE.2	Constructs linear functions of arithmetic sequences when given a graph.	Constructs linear and exponential functions, including arithmetic and geometric sequences, given a graph.	Constructs linear functions and exponential functions, including arithmetic sequences and geometric sequences, given input-output pairs, including those in a table.	Constructs linear and exponential functions, including arithmetic and geometric sequences, given the description of a relationship.

Range	F.LE.3	Graphs a linear and exponential function on the same coordinate plane and describes how the graphs compare.	Recognizes that linear and exponential functions may have points in common when graphed on the same coordinate plane.	Observes that a quantity increasing exponentially eventually exceeds a quantity increasing linearly using graphs and tables.	Describes and compares the changes of behavior between a linear and an exponential function including the approximate point(s) of intersection.
Range	F.LE.5	Identifies which values are constant from a given context.	Interprets the slope and x - and y -intercepts in a linear function in terms of a context.	Interprets the base value and vertical shifts in an exponential function of the form $f(x) = b^x + k$, where b is an integer and k can equal zero.	Interprets the base value and initial value in an exponential function of the form $f(x) = ab^x$, where b is an integer, and a can be any positive integer including one.
Algebra					
		The Level 1 Student:	The Level 2 Student:	The Level 3 Student:	The Level 4 Student:
Range	A.SSE.1 a & b	Identifies some of the basic terms (base, exponent, coefficient, and factor) of a linear or exponential expression.	Identifies all of the basic terms (base, exponent, coefficient, and factor) of linear and exponential expressions.	Interprets complicated expressions by viewing one or more of their parts as a single entity.	Explains the context of different parts of a formula presented as a complicated expression.
Range	A.CED.1	Distinguishes between one-variable linear equations and inequalities within contextual situations.	Creates one-variable linear equations and inequalities from contextual situations.	Solves and interprets the solution to multi-step linear equations and inequalities in context.	Uses properties of exponents to solve and interpret the solution to exponential equations and inequalities in context.
Range	A.CED.2	Constructs a graph of a linear or exponential function given the equation.	Writes an equation to represent a linear relationship.	Constructs equations and graphs that model linear and exponential relationships (with context).	Compares and contrasts equations and graphs that model linear and exponential relationships.
Range	A.CED.3	Determines whether a point is a solution to a system of equations and/or inequalities given a graph or equations.	Interprets solutions as viable or non-viable options in a modeling context where constraints are presented verbally.	Represents constraints by equations or inequalities, and by systems of equations and/or inequalities.	Defends and justifies solutions or non-solutions in a modeling context.
Range	A.CED.4	Rearranges a linear equation that contains only one variable.	Rearranges a linear equation that includes several steps with scaffolding.	Uses linear equation solving techniques to rearrange formulas to highlight a specific quantity by extending concepts used in solving numerical equations.	Identifies useful quantities to highlight the variable of interest and applies the rearranged linear formula to solve problems in context.
Range	A.REI.1	Solves a linear equation with multiple steps, without justifying the steps involved in solving.	Describes the steps in solving linear equations.	Explains and justifies the steps in solving linear equations by applying the properties of equality, inverse, and identity.	Explains and justifies the steps in solving linear equations by applying and naming the properties of equality, inverse, and identity.
Range	A.REI.3	Solves linear equations and inequalities in one variable.	Solves linear equations and inequalities in one variable, where that variable is included on both sides of the equal sign or inequality.	Solves linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Solves linear equations and inequalities in one variable, including equations with coefficients represented by letters within a real-world context.
Range	A.REI.5	Identifies what value one of the equations can be multiplied by in order to solve the system of equations.	Multiplies one of the equations in a system to show how to solve the system.	Solves a system of linear equations exactly when given the equations in Standard Form.	Proves that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
Range	A.REI.6	Solves a system of linear equations approximately when given a graph of the system.	Explains whether a system of equations has one, infinitely many, or no solutions.	Solves a system of linear equations exactly when given the equations in standard form.	Analyzes the system of equations and is able to solve exactly and approximately given a context or real-world situation. Solves a system of equations and manipulates one of the equations to provide additional information or an additional given solution.

Range	A.REI.10	Identifies at least some of the solutions of a linear equation in two variables graphed on the coordinate plane.	Identifies at least some of the solutions of an exponential equation in two variables graphed on the coordinate plane.	Identifies that a continuous curve or line contains an infinite number of solutions and identifies solutions and non-solutions of linear and exponential equations.	Identifies viable solutions using the knowledge that continuous lines and curves contain an infinite number of solutions.
Range	A.REI.11	Finds the point where two lines or exponential curves intersect on a graph or approximates solutions using other methods such as a table or technology.	Finds and explains why the solution to a system of linear/exponential equations is the point where the two intersect.	Models the solutions of a system of linear equations and/or exponential equations showing the solutions using technology, tables, graphics, approximations.	Explains why there are infinitely many solutions when $f(x) = g(x)$.
Range	A.REI.12	Identifies a solution region when the graph of a linear inequality is given.	Graphs the solutions to a linear inequality in two variables as a half-plane.	Graphs solutions of the system of inequalities and identifies the solution set as a region of the coordinate plane that satisfies both inequalities.	Writes or creates a system of linear inequalities given a context or graph and identifies the solution set as a region of the coordinate plane that satisfies all inequalities.

Geometry

		The Level 1 Student:	The Level 2 Student:	The Level 3 Student:	The Level 4 Student:
Range	G.CO.1	Identifies an angle, circle, perpendicular line, parallel line, and line segment.	Informally defines an angle, circle, perpendicular line, parallel line, and line segment using examples and non-examples.	Defines an angle, circle, perpendicular line, parallel line, and line segment based on the notions of point, line, distance along a line, and distance around a circular arc.	Identifies real-life examples of an angle, circle, perpendicular line, parallel line, and line segment using precise definitions.
Range	G.CO.2	Identifies reflections, rotations, and translations.	Identifies dilations.	Creates transformations in the plane and understands them as functions that take points in the plane as inputs and give other points as outputs.	Creates functions to describe transformations.
Range	G.CO.3	Distinguishes between rotations and reflections given a rectangle, parallelogram, trapezoid, or regular polygon and its transformation.	Identifies lines and points of symmetry given a rectangle, parallelogram, trapezoid, or regular polygon and its reflection or rotation.	Describes the rotations and reflections that a given rectangle, parallelogram, trapezoid, or regular polygon carries onto itself.	Identifies a rectangle, parallelogram, trapezoid, or regular polygon that satisfies a description of rotational symmetry or lines of symmetry.
Range	G.CO.4	Identifies rotations, reflections, and translations given an image and its transformation.	Informally describes rotations, reflections, and translations using examples and non-examples.	Develops definitions of rotations, reflections, and translations using the terms angles, circles, perpendicular lines, parallel lines, and line segments.	Justifies statements about rotations, reflections, and translations on the coordinate plane.
Range	G.CO.5	Performs rotations, reflections, and translations on a given figure.	Identifies a sequence of transformations that will carry a given figure onto another.	Performs rotations, reflections, and translations using a variety of methods and specifies the sequence of transformations that will carry a given figure onto another.	Explains how the order of a sequence of transformations is performed may result in different outcomes.
Range	G.CO.6	Identifies transformations of a given figure based on descriptions of rigid motion.	Creates transformations of a given figure based on descriptions of rigid motion.	Identifies the congruence of two figures using transformations of rigid motion.	Justifies the congruence of two complex figures using properties of rigid motion.
Range	G.CO.7	Identifies corresponding pairs of angles or corresponding pairs of sides of two triangles are congruent.	Identifies corresponding pairs of angles and corresponding pairs of sides of two triangles are congruent.	Shows that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent (CPCTC) using the definition of congruence in terms of rigid motions.	Justifies that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent in a context.
Range	G.CO.8	Identifies corresponding parts of two congruent triangles.	Identifies the minimum conditions necessary for triangle congruence (ASA, SAS, SSS).	Demonstrates how the criteria for triangle congruence (ASA, SAS, SSS) follow from the definition of congruence in terms of rigid motions.	Understands and explains why SSA and AAA do not provide enough evidence for triangle congruence.

Range	G.CO.12	Copies a line segment or an angle.	Bisects a line segment and an angle.	Constructs perpendicular lines, a perpendicular bisector of a line segment, and a line parallel to a given line through a point not on the line.	Creates a polygon using geometric constructions.
Range	G.CO.13	Constructs congruent segments and perpendicular lines.	Constructs an equilateral triangle, a square, and a regular hexagon.	Constructs an equilateral triangle, a square, and a regular hexagon inscribed in a circle.	Explores the construction of other regular polygons inscribed in a circle.
Range	G.GPE.4	Identifies if segments on a coordinate plane are parallel or perpendicular by calculating slope.	Identifies if segments on a coordinate plane are congruent by calculating length.	Proves a triangle is a special triangle, or a quadrilateral is a special quadrilateral (such as a rectangle or parallelogram), algebraically, using coordinates.	Justifies statements about geometric figures using coordinates.
Range	G.GPE.5	Identifies that the slopes of parallel lines are equal and the slopes of perpendicular lines are negative reciprocals or one that is 0 and the other that is undefined.	Creates the equation of a line that passes through a specific point given its slope.	Creates the equation of a line parallel or perpendicular to a given line that passes through a given point.	Creates the equation of a line parallel or perpendicular to a given line that passes through a given point in a context.
Range	G.GPE.7	Identifies the perimeter of a polygon.	Identifies areas of a rectangle and right triangle using coordinates.	Identifies areas of any triangle using coordinates.	Identifies perimeters of polygons and areas of triangles and rectangles using coordinates in a context.
Statistics and Probability					
		The Level 1 Student:	The Level 2 Student:	The Level 3 Student:	The Level 4 Student:
Range	S.ID.1	Identifies dot plots, histograms, and box plots for a given set of data.	Graphs numerical data on a real number line using dot plots, histograms, and box plots.	Describes and gives a simple interpretation of a graphical representation of data on dot plots, histograms, and box plots.	Determines and justifies which type of data plot on a real number line would be most appropriate for a set of data. Identify advantages and disadvantages of different types of data plots.
Range	S.ID.2	Describes informally the center and spread of a single set of data or graph.	Compares informally the similarities or differences in shape, center, or spread between two graphs.	Explains similarities and differences using specific measures of center and spread, given two sets of data or two graphs.	Plots data based on situations with multiple data sets, and then compares and discusses using measures of center and spread. Justifies which measure(s) are most appropriate for comparison. Identifies advantages and disadvantages of using each measure of center and spread.
Range	S.ID.3	Identifies shape, center, and spread of a data set.	Identifies and states the effects of existing outliers.	Interprets similarities and differences between shape, center, and spread in the context of data sets with possible effects from existing outliers.	Plots and interprets data based on contextual situations involving outliers, and then compares and discusses center and spread and explores the manipulation of additional data points.
Range	S.ID.5	Presents data in a frequency table.	Creates a two-way frequency table showing the relationship between two categorical variables.	Finds and interprets joint, marginal and conditional relative frequencies. Recognizes possible associations and trends in the data.	Given a context, interprets, identifies, and describes associations and trends using a two-way frequency table.
Range	S.ID.6a, b, and c	Creates a scatter plot of bivariate data.	Determines if a plotted data set is approximately linear.	Creates a scatter plot of bivariate data and estimates a linear function that fits the data. Uses this function to solve problems in the context of the data.	Compares the fit of different functions to data and determines which function has the best fit.

Range	S.ID.7	Identifies a linear model of bivariate data.	Graphs data in a scatter plot. Identifies the slope and y-intercept from the linear model.	Using the line of best fit, interprets the slope (rate of change) and the intercept (constant term) of a linear model in the context of the situation and data.	Using the function of best fit, interpolates and extrapolates trends in the data.
Range	S.ID.8	Uses a table or graph of a set of data to informally describe a correlation.	Computes the correlation coefficient of a set of linearly-related data using technology.	Interprets the correlation coefficient of a linear fit in the context of a situation using technology. Determines whether the correlation shows a weak positive, strong positive, weak negative, strong negative, or no correlation.	Supports or refutes a hypothesized correlation between two sets of data.
Range	S.ID.9	Defines causation and correlation.	Identifies the existence of causation or correlation in the context of a problem.	Distinguishes between causation and correlation in the context of a situation with data.	Supports or refutes claims of causation with the understanding that a strong correlation does not imply causation.

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