

Probability and Statistics	
M.O.PS.5.9	analyze the role of sampling, randomness, bias, and sample size in data collection and interpretation.
Level 1: Knowledge	<ul style="list-style-type: none"> Vocabulary-sample, random, bias
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze the role of sampling in data collection and interpretation
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze the role of randomness in data collection and interpretation
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze the role of bias in data collection and interpretation
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze the role of sample size in data collection and interpretation
M.O.PS.5.8	analyze individual performances in terms of percentiles, z-scores, and t-scores.
Level 1: Knowledge	Vocabulary-percentiles, z-scores and t-scores
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze individual performances in terms of percentiles
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze individual performances in terms of z-scores
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze individual performances in terms of t-scores
M.O.PS.5.6	analyze measures of central tendency (mean, median, and mode) from data presented in a variety of forms such as charts, tables, and graphs or from data created through experimentation.
Level 1: Knowledge	Vocabulary-measures of central tendency (mean, median, and mode)
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze measures of central tendency from data presented in a variety of forms
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze measures of central tendency from data created through experimentation
Level 3: Performance	<ul style="list-style-type: none"> Create data through experimentation
M.O.PS.5.7	interpret and calculate measures of dispersions (range and standard deviation) from data presented in a variety of forms such as charts, tables and graphs or from data created through experimentation.
Level 1: Knowledge	<ul style="list-style-type: none"> Vocabulary-measures of dispersion (range and standard deviation)
Level 2:	<ul style="list-style-type: none"> Analyze measures of dispersion from data presented in a variety

Reasoning	of forms
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze measures of dispersion from data created through experimentation
Level 3: Performance	<ul style="list-style-type: none"> Create data through experimentation
M.O.PS.5.11	determine the correlation values for given data or for data generated by students and use the results to describe the association of the variables within the given data. Identify whether this association is systematic or predictable.
Level 1: Knowledge	<ul style="list-style-type: none"> Vocabulary-Systematic
Level 1: Knowledge	<ul style="list-style-type: none"> Distinguish whether the association of variables is systematic or predictable
Level 2: Reasoning	<ul style="list-style-type: none"> Determine correlation values for given data and use results to describe the association of the variables
Level 2: Reasoning	<ul style="list-style-type: none"> Determine correlation values for data generated by students and use results to describe the association of the variables
M.O.PS.5.12	calculate the Chi-Square values for a given population.
Level 1: Knowledge	Vocabulary – Chi-Square
Level 2: Reasoning	Calculate the chi-square value for a given population
M.O.PS.5.2	using a real-world problem solving investigation, create and interpret data using various methods of displaying circle graphs, histograms, and frequency curves, make predictions, include information concerning outliers, present and justify results.
Level 1: Knowledge	<ul style="list-style-type: none"> Vocabulary – when appropriate to use each of the following graphs and the components of each: Circle graphs, Histograms, Frequency Curves
Level 1: Knowledge	<ul style="list-style-type: none"> Vocabulary – outliers, predictions
Level 2: Reasoning	<ul style="list-style-type: none"> Distinguishing which graph is appropriate for the given data
Level 2: Reasoning	<ul style="list-style-type: none"> Creating a circle graph
Level 2: Reasoning	<ul style="list-style-type: none"> Creating a histogram
Level 2:	<ul style="list-style-type: none"> Creating a frequency curve

Reasoning	
Level 3: Performance	<ul style="list-style-type: none"> • Use a real-world problem to solve an investigation
Level 3: Performance	<ul style="list-style-type: none"> • Create data using various methods
Level 3: Performance	<ul style="list-style-type: none"> • Interpret data using various methods of display
Level 3: Performance	<ul style="list-style-type: none"> • Justify results on various methods of display
Level 4: Product	<ul style="list-style-type: none"> • Display for a real-world problem
Level 4: Product	<ul style="list-style-type: none"> • Presentation of real-world problem with display and interpretations
M.O.PS.5.13	perform a regression analysis on a set of data, either given or created through experimentation, and use the results to predict specific values of a variable. Identify the regression equation.
Level 1: Knowledge	<ul style="list-style-type: none"> • Vocabulary-regression analysis
Level 1: Knowledge	<ul style="list-style-type: none"> • Identifying a regression analysis
Level 2: Reasoning	<ul style="list-style-type: none"> • Perform a regression analysis on a set of data that is given
Level 2: Reasoning	<ul style="list-style-type: none"> • Perform a regression analysis on a set of data that is created through experimentation
Level 2: Reasoning	<ul style="list-style-type: none"> • Perform a regression analysis and use the results to predict specific values of a variable
M.O.PS.5.3	determine possible outcomes using tree diagrams and the counting principles of permutations and combinations.
Level 1: Knowledge	<ul style="list-style-type: none"> • Vocabulary – tree diagram, permutations and combinations
Level 2: Reasoning	<ul style="list-style-type: none"> • Determine possible outcomes using tree diagrams
Level 2: Reasoning	<ul style="list-style-type: none"> • Determine outcomes using permutations
Level 2: Reasoning	<ul style="list-style-type: none"> • Determine outcomes using combinations
M.O.PS.5.5	use the normal distribution and the binomial distribution including Pascal's triangle, to determine probability of events.
Level 1:	<ul style="list-style-type: none"> • Vocabulary – normal distributions, binomial distributions and

Knowledge	Pascal's triangle
Level 2: Reasoning	<ul style="list-style-type: none"> Determine probability of events using the normal distribution
Level 2: Reasoning	<ul style="list-style-type: none"> Determine probability of events using the binomial distribution including Pascal's triangle
M.O.PS.5.4	express the chances of events occurring either in terms of a probability or odds.
Level 1: Knowledge	<ul style="list-style-type: none"> Vocabulary – probability and odds
Level 2: Reasoning	<ul style="list-style-type: none"> Express the chances of events occurring in terms of probability
Level 2: Reasoning	<ul style="list-style-type: none"> Express the chances of events occurring in terms of odds
M.O.PS.5.1	distinguish between experimental and theoretical probability.
Level 1: Knowledge	<ul style="list-style-type: none"> Vocabulary – definitions of experimental and theoretical probability
Level 1: Knowledge	<ul style="list-style-type: none"> Be able to find experimental probability
Level 1: Knowledge	<ul style="list-style-type: none"> Be able to find theoretical probability
Level 2: Reasoning	<ul style="list-style-type: none"> Distinguishing between theoretical and experimental probability
M.O.PS.5.10	identify a real life situation that involves statistical concepts including a t-test, make a hypothesis as to the outcome; develop, justify, and implement a method to collect, organize and analyze data; generalize the results to make a conclusion, compare the hypothesis and the conclusion; present the project using predictive and analytic tools (with and without technology).
Level 1: Knowledge	<ul style="list-style-type: none"> Vocabulary-hypothesis, outcome, t-test
Level 2: Reasoning	<ul style="list-style-type: none"> Identify a real life situation that involves statistical concepts including a t-test
Level 2: Reasoning	<ul style="list-style-type: none"> Make a hypothesis as to the outcome
Level 2: Reasoning	<ul style="list-style-type: none"> Compare the hypothesis and conclusion
Level 3: Performance	<ul style="list-style-type: none"> Develop a method to collect, organize and analyze data
Level 3: Performance	<ul style="list-style-type: none"> Justify a method to collect, organize and analyze data
Level 3: Performance	<ul style="list-style-type: none"> Implement a method to collect, organize and analyze data

Level 3: Performance	<ul style="list-style-type: none"> • Generalize the results to make a conclusion
Level 4: Product	<ul style="list-style-type: none"> • Presentation of the project using analytic and predictive tools (with or without technology)
M.O.PS.5.14	perform an analysis of variance (ANOVA) and interpret the results.
Level 1: Knowledge	<ul style="list-style-type: none"> • Vocabulary-ANOVA
Level 2: Reasoning	<ul style="list-style-type: none"> • Perform an analysis of variance (ANOVA)
Level 3: Performance	<ul style="list-style-type: none"> • Interpreting the analysis of variance (ANOVA)

Algebra II	
M.O.A2.2.1 DOK ?	determine equations of lines including parallel, perpendicular, vertical and horizontal lines, and compare and contrast the properties of these equations.
Level 1: Knowledge	<ul style="list-style-type: none"> Parallel and perpendicular lines
Level 1: Knowledge	<ul style="list-style-type: none"> Vertical and horizontal lines
Level 2: Reasoning	<ul style="list-style-type: none"> Determine equations of parallel and perpendicular lines
Level 2: Reasoning	<ul style="list-style-type: none"> Determine equations of vertical and horizontal lines
Level 2: Reasoning	<ul style="list-style-type: none"> Compare and contrast parallel and perpendicular lines
Level 2: Reasoning	<ul style="list-style-type: none"> Compare and contrast vertical and horizontal lines
M.O.A2.2.2 DOK 2	factor higher order polynomials by applying various methods including factoring by grouping and the sum and difference of two cubes; analyze and describe the relationship between the factored form and the graphical representation.
Level 1: Knowledge	<ul style="list-style-type: none"> Define polynomials
Level 1: Knowledge	<ul style="list-style-type: none"> Recall various methods of factoring
Level 2 Reasoning	<ul style="list-style-type: none"> Analyze and describe relationship between the factored form and the graphical representation
M.O.A2.2.3 DOK 1	define complex numbers, simplify powers of 'i', perform basic operations with complex numbers, and give answers as complex numbers in simplest form.
Level 1: Knowledge	<ul style="list-style-type: none"> Define complex numbers
Level 2: Reasoning	<ul style="list-style-type: none"> Simplify powers of 'i'
Level 2: Reasoning	<ul style="list-style-type: none"> Perform basic operations with complex numbers
Level 2: Reasoning	<ul style="list-style-type: none"> Simplify complex numbers

M.O.A2.2.5 DOK 2	solve quadratic equations over the set of complex numbers: apply the techniques of factoring, completing the square, and the quadratic formula; use the discriminant to determine the number and nature of the roots; identify the maxima and minima; use words, graphs, tables, and equations to generate and analyze solutions to practical problems.
Level 1: Knowledge	<ul style="list-style-type: none"> Solve quadratic equations over the set of complex numbers
Level 1: Knowledge	<ul style="list-style-type: none"> Apply the techniques of factoring, completing the square, and the quadratic formula
Level 1: Knowledge	<ul style="list-style-type: none"> Use the discriminant to determine the number and nature of the roots
Level 1: Knowledge	<ul style="list-style-type: none"> Identify the maxima and minima
Level 3: Performance	<ul style="list-style-type: none"> Use words, graphs, tables, and equations to generate and analyze solutions to practical problems
M.O.A2.2.6 DOK ?	develop and use the appropriate field properties of matrices by adding, subtracting, and multiplying; solve a system of linear equations using matrices; and apply skills toward solving practical problems.
Level 1: Knowledge	<ul style="list-style-type: none"> Define matrices
Level 2: Reasoning	<ul style="list-style-type: none"> Develop and use the appropriate field properties of matrices by adding, subtracting, and multiplying
Level 2: Reasoning	<ul style="list-style-type: none"> Solve a system of linear equations using matrices
Level 3: Performance	<ul style="list-style-type: none"> Apply skills toward solving practical problems
M.O.A2.2.4 DOK 1	simplify expressions involving radicals and fractional exponents, convert between the two forms, and solve equations containing radicals and exponents.
Level 2: Reasoning	<ul style="list-style-type: none"> Simplify expressions involving radicals and fractional exponents
Level 2: Reasoning	<ul style="list-style-type: none"> Convert between radical and fractional forms
Level 2: Reasoning	<ul style="list-style-type: none"> Solve equations containing radicals and exponents
M.O.A2.2.7	define a function and find its zeros; express the domain and range using

DOK 2	interval notation; find the inverse of a function; find the value of a function for a given element in its domain; and perform basic operations on functions including composition of functions.
M.O.A2.2.8 DOK 2	analyze families of functions and their transformations; recognize linear, quadratic, radical, absolute value, step, piece-wise, and exponential functions; analyze connections among words, graphs, tables and equations when solving practical problems with and without technology.
M.O.A2.2.9 DOK ?	solve quadratic inequalities, graph their solution sets, and express solutions using interval notation.
M.O.A2.2.10 DOK ?	solve and graph the solution set of systems of linear inequalities in two variables by finding the maximum or minimum values of a function over the feasible region using linear programming techniques.
M.O.A2.2.12	analyze the conic sections; identify and sketch the graphs of a parabola, circle, ellipse, and hyperbola and convert between graphs and equations
M.O.A2.2.13 DOK 2	solve absolute value inequalities graphically, numerically and algebraically and express the solution set in interval notation.
M.O.A2.2.14	define a logarithmic function, transform between exponential and logarithmic forms, and apply the basic properties of logarithms to simplify or expand an expression.
M.O.A2.2.11	solve practical problems involving direct, inverse and joint variation.
M.O.A2.2.15	identify a real life situation that exhibits characteristics of change that can be modeled by a quadratic equations; pose a questions; make a hypothesis as to the answer; develop, justify, and implement a method to collect, organize and analyze related data; extend the nature of collected, discrete data to that of a continuous function that describes the known data set; generalize the results to make a conclusion; compare the hypothesis and the conclusion; present the project numerically, analytically, graphically and verbally using the predictive and analytic tools of algebra (with and without technology).
M.O.A2.2.16	describe and illustrate how patterns and sequences are used to develop recursive and closed form equations; analyze and describe characteristics of each form.

Trigonometry	
M.O.T.3.1 DOK 2	<p>apply the right triangle definition of the six trigonometric functions of an angle to determine the values of the function values of an angle in standard position given a point on the terminal side of the angle.</p> <ul style="list-style-type: none"> determine the value of the other trigonometric functions given the value of one of the trigonometric functions and verify these values with technology. using geometric principles and the Pythagorean Theorem, determine the six function values for the special angles and the quadrantal angles and use them in real-world problems. compare circular functions and the trigonometric function values to draw inferences about coterminal angles and co-functions.
Level 3: Performance	<ul style="list-style-type: none"> compare circular functions and the trigonometric function values
Level 3: Performance	draw inferences about coterminal angles and co-functions
M.O.T.3.2	<p>convert angle measures from degrees to radians (and vice versa) and apply this concept to</p> <ul style="list-style-type: none"> create a data set, analyze, and formulate a hypotheses to test and develop formulas for the arclength, area of a sector, and angular velocity and use the formula for application in the real-world. compare and contrast the concepts of angular velocity and linear velocity and demonstrate by graphical or algebraic means relationship between them and apply to real-world problems.
Level 3: Performance	<ul style="list-style-type: none"> develop formulas for the arclength
Level 3: Performance	<ul style="list-style-type: none"> develop formulas for the area of a sector
Level 3: Performance	<ul style="list-style-type: none"> develop formulas for the angular velocity
Level 3: Performance	<ul style="list-style-type: none"> use the formula for the arclength application in the real-world.
Level 3: Performance	<ul style="list-style-type: none"> use the formula for the area of a sector application in the real-world.

Level 3: Performance	<ul style="list-style-type: none"> use the formula for the angular velocity application in the real-world.
Level 3: Performance	<ul style="list-style-type: none"> compare the concepts of angular velocity
Level 3: Performance	<ul style="list-style-type: none"> compare the concepts of linear velocity
Level 3: Performance	<ul style="list-style-type: none"> contrast the concepts of angular velocity
Level 3: Performance	<ul style="list-style-type: none"> contrast the concepts of linear velocity
Level 2: Reasoning	<ul style="list-style-type: none"> Convert angle measures from degrees to radians (and vice versa)
Level 4: Product	<ul style="list-style-type: none"> demonstrate by graphical means relationship between linear and angular velocity
Level 4: Product	<ul style="list-style-type: none"> demonstrate by algebraic means relationship between linear and angular velocity
M.O.T.3.7	model periodic data sets using graphs, tables, and equations and use them to analyze real-world problems such as electricity and harmonic motion.
M.O.T.3.8 DOK 3	investigate real-world problems within a project based investigation involving triangles using the trigonometric functions, the law of sines and the law of cosines, justify and present results.
Level 3: Performance	<ul style="list-style-type: none"> investigate real-world problems within a project based investigation involving triangles using the trigonometric functions
Level 3: Performance	<ul style="list-style-type: none"> investigate real-world problems within a project based investigation involving triangles using the law of sines
Level 3: Performance	<ul style="list-style-type: none"> investigate real-world problems within a project based investigation involving triangles using the law of cosines
M.O.T.3.9	develop and test a hypothesis to find the area of a triangle given the measures of two sides and the included angle or the measures of three sides (Heron's formula) and use these formulas to find total area of figures constructed of multiple shapes.
M.O.T.3.4	justify and present the solutions of trigonometric equations that include both infinite and finite (over a restricted domain) solutions.

Level 2: Reasoning	<ul style="list-style-type: none"> Justify the solutions of trigonometric equations for infinite solutions
Level 2: Reasoning	<ul style="list-style-type: none"> Justify the solutions of trigonometric equations for finite solutions
Level 3: Performance	<ul style="list-style-type: none"> Present the solutions of trigonometric equations for infinite solutions
Level 3: Performance	<ul style="list-style-type: none"> Present the solutions of trigonometric equations for finite solutions
M.O.T.3.5	<p>find the value of the inverse trigonometric functions using special angle trigonometric function values and technology.</p> <ul style="list-style-type: none"> draw inferences of restricted domain to recognize and produce a graph of the inverse trigonometric functions. prove conjectures made about the solution of the equations such as $x = \sin(\arcsin y)$, $x = \sin(\arccos y)$ being sure to consider restrictions of the domain.
Level 1: Knowledge	<ul style="list-style-type: none"> find the value of the inverse trigonometric functions using special angle trigonometric function values
Level 1: Knowledge	<ul style="list-style-type: none"> find the value of the inverse trigonometric functions using technology
Level 2: Reasoning	<ul style="list-style-type: none"> draw inferences of restricted domain to recognize a graph of the inverse trigonometric functions.
Level 2: Reasoning	<ul style="list-style-type: none"> draw inferences of restricted domain to produce a graph of the inverse trigonometric functions.
Level 2: Reasoning	<ul style="list-style-type: none"> prove conjectures made about the solution of the equations such as $x = \sin(\arcsin y)$ being sure to consider restrictions of the domain
Level 2: Reasoning	<ul style="list-style-type: none"> prove conjectures made about the solution of the equations such as $x = \sin(\arccos y)$ being sure to consider restrictions of the domain
M.O.T.3.6	<p>identify a real life problem utilizing graphs of trigonometric functions and/or the inverse functions; make a hypothesis as to the outcome; develop, justify, and implement a method to collect, organize, and analyze data; generalize the results to make a conclusion; compare the hypothesis and the conclusion; present the project using words, graphs, drawings, models, or tables.</p>
M.O.T.3.10	<p>express complex numbers in polar form:</p> <ul style="list-style-type: none"> perform operations including adding, subtracting, multiplying, and dividing; evaluate powers and roots of complex numbers using De Moivre's Theorem; and graph complex numbers.

	<ul style="list-style-type: none"> graph complex numbers in the polar coordinate plane and make conjectures about some polar graphs and real-world situations such as the paths that the planets travel.
Level 1: Knowledge	<ul style="list-style-type: none"> express complex numbers in polar form
Level 2: Reasoning	<ul style="list-style-type: none"> perform operations of adding complex numbers
Level 2: Reasoning	<ul style="list-style-type: none"> perform operations of subtracting complex numbers
Level 2: Reasoning	<ul style="list-style-type: none"> perform operations of multiplying complex numbers
Level 2: Reasoning	<ul style="list-style-type: none"> perform operations of dividing complex numbers
Level 2: Reasoning	<ul style="list-style-type: none"> evaluate powers of complex numbers using De Moivre's Theorem
Level 2: Reasoning	<ul style="list-style-type: none"> evaluate roots of complex numbers using De Moivre's Theorem
Level 2: Reasoning	<ul style="list-style-type: none"> Graph complex numbers
M.O.T.3.3	<p>using various methods, basic identities and graphical representation</p> <ul style="list-style-type: none"> verify trigonometric identities prove the sum and difference to two angles, double-angles, and half-angle identities
Level 1: Knowledge	<ul style="list-style-type: none"> Use formulas for sum of two angles
Level 1: Knowledge	<ul style="list-style-type: none"> Use formulas for the sum of double-angles
Level 1: Knowledge	<ul style="list-style-type: none"> Use formulas for the sum of half-angle
Level 1: Knowledge	<ul style="list-style-type: none"> Use formulas for the difference of two angles
Level 1:	<ul style="list-style-type: none"> Use formulas for the difference of double-angles

Knowledge	
Level 1: Knowledge	<ul style="list-style-type: none"> • Use formulas for the difference of half-angle
Level 2: Reasoning	<ul style="list-style-type: none"> • verify trigonometric identities with basic identities
Level 2: Reasoning	<ul style="list-style-type: none"> • verify trigonometric identities with graphical representation
Level 3: Performance	<ul style="list-style-type: none"> • prove the sum of two angles
Level 3: Performance	<ul style="list-style-type: none"> • prove the sum of double-angles
Level 3: Performance	<ul style="list-style-type: none"> • prove the sum of half-angle identities
Level 3: Performance	<ul style="list-style-type: none"> • prove the difference of two angles
Level 3: Performance	<ul style="list-style-type: none"> • prove the difference of double-angles
Level 3: Performance	<ul style="list-style-type: none"> • prove the difference of half-angle identities
M.O.T.3.11	create graphical and algebraic representations for performing vector operations and analyze these to solve real-world problems such as force analysis and navigation.

Algebra I

Students will create and solve linear equations, absolute value equations, and linear inequalities in one variable.	
MO.A1.2.1 DOK 2	formulate algebraic expressions for use in equations and inequalities that require planning to accurately model real-world problems.
Level 1: Knowledge	definition of algebraic expressions
Level 1: Knowledge	definition of inequalities
Level 2: Reasoning	formulate algebraic expressions for use in equations
Level 2: Reasoning	formulate algebraic expressions for use in inequalities
Level 3: Performance	model real-world problems from algebraic expressions with equations
Level 3: Performance	model real-world problems from algebraic expressions with inequalities
MO.A1.2.2 DOK 2	create and solve multi-step linear equations, absolute value equations, and linear inequalities in one variable, (with and without technology); apply skills toward solving practical problems such as distance, mixtures or motion and judge the reasonableness of solutions.
Level 1: Knowledge	<ul style="list-style-type: none"> definition of linear equations
Level 1: Knowledge	<ul style="list-style-type: none"> definition of absolute value
Level 1: Knowledge	<ul style="list-style-type: none"> definition of linear inequalities
Level 1: Knowledge	<ul style="list-style-type: none"> definition of variable
Level 2: Reasoning	<ul style="list-style-type: none"> Create multi-step linear equations with technology
Level 2: Reasoning	<ul style="list-style-type: none"> Create multi-step linear equations without technology
Level 2: Reasoning	<ul style="list-style-type: none"> Create absolute value equations with technology
Level 2: Reasoning	<ul style="list-style-type: none"> Create absolute value equations without technology
Level 2:	<ul style="list-style-type: none"> Create linear inequalities with technology

Reasoning	
Level 2: Reasoning	<ul style="list-style-type: none"> • Create linear inequalities without technology
Level 2: Reasoning	<ul style="list-style-type: none"> • Apply skills toward solving practical problems
Level 2: Reasoning	<ul style="list-style-type: none"> • Judge the reasonableness of solutions in multi-step linear equations
Level 2: Reasoning	<ul style="list-style-type: none"> • Judge the reasonableness of solutions in absolute value equations
Level 2: Reasoning	<ul style="list-style-type: none"> • Judge the reasonableness of solutions in linear inequalities with one variable
Level 3: Performance	<ul style="list-style-type: none"> • Solve multi-step linear equations with technology
Level 3: Performance	<ul style="list-style-type: none"> • Solve multi-step linear equations without technology
Level 3: Performance	<ul style="list-style-type: none"> • Solve absolute value equations with technology
Level 3: Performance	<ul style="list-style-type: none"> • Solve absolute value equations without technology
Level 3: Performance	<ul style="list-style-type: none"> • Solve linear inequalities with technology
Level 3: Performance	<ul style="list-style-type: none"> • Solve linear inequalities without technology
MO.A1.2.3 DOK 2	evaluate data provided, given a real-world situation, select an appropriate literal equation and solve for a needed variable.
Level 1: Knowledge	<ul style="list-style-type: none"> • Definition of literal equation
Level 2: Reasoning	<ul style="list-style-type: none"> • Select an appropriate literal equation
Level 2: Reasoning	<ul style="list-style-type: none"> • Evaluate provided data in a real-world situation
Level 3: Performance	<ul style="list-style-type: none"> • Solve for a needed variable in a literal equation

Students will determine the slope of a line, the equation of a line, and create and solve systems of linear equations graphically and numerically using the elimination method and the substitution method, given a real-world situation.	
MO.A1.2.5 DOK 3	analyze a given set of data and prove the existence of a pattern numerically, algebraically and graphically, write equations from the patterns and make inferences and predictions based on observing the pattern.
MO.A1.2.6 DOK 1	determine the slope of a line through a variety of strategies (e.g. given an equation or graph).
Level 1: Knowledge	<ul style="list-style-type: none"> • Definition of slope
Level 2: Reasoning	<ul style="list-style-type: none"> • Determine the slope of a line through a variety of strategies
MO.A1.2.7 DOK 2	analyze situations and solve problems by determining the equation of a line given a graph of a line, two points on the line, the slope and a point, or the slope and y intercept.
Level 1: Knowledge	<ul style="list-style-type: none"> • Definition of slope
Level 1: Knowledge	<ul style="list-style-type: none"> • Definition of y-intercept
Level 2: Reasoning	<ul style="list-style-type: none"> • Know y-intercept form of an equation
Level 2: Reasoning	<ul style="list-style-type: none"> • Know point-slope form of an equation
Level 2: Reasoning	<ul style="list-style-type: none"> • Analyze situations by determining the equation of a line given a graph of a line
Level 2: Reasoning	<ul style="list-style-type: none"> • Analyze situations by determining the equation of a line given two points on the line
Level 2: Reasoning	<ul style="list-style-type: none"> • Analyze situations by determining the equation of a line given the slope and a point
Level 2: Reasoning	<ul style="list-style-type: none"> • Analyze situations by determining the equation of a line given the slope and y intercept
Level 3: Performance	<ul style="list-style-type: none"> • Solve problems by determining the equation of a line given a graph of a line

Level 3: Performance	<ul style="list-style-type: none"> Solve problems by determining the equation of a line given two points on the line
Level 3: Performance	<ul style="list-style-type: none"> Solve problems by determining the equation of a line given the slope and y intercept
Level 3: Performance	<ul style="list-style-type: none"> Solve problems by determining the equation of a line given the slope and a point
MO.A1.2.8 DOK 4	identify a real life situation that involves a constant rate of change; pose a question; make a hypothesis as to the answer; develop, justify, and implement a method to collect, organize, and analyze related data; extend the nature of collected, discrete data to that of a continuous linear function that describes the known data set; generalize the results to make a conclusion; compare the hypothesis and the conclusion; present the project numerically, analytically, graphically and verbally using the predictive and analytic tools of algebra (with and without technology).
Level 1: Knowledge	<ul style="list-style-type: none"> Definition of equations
Level 2: Reasoning	<ul style="list-style-type: none"> Analyze a given set of data
Level 2: Reasoning	<ul style="list-style-type: none"> Prove the existence of a pattern numerically
Level 2: Reasoning	<ul style="list-style-type: none"> Prove the existence of a pattern algebraically
Level 2: Reasoning	<ul style="list-style-type: none"> Prove the existence of a pattern graphically
Level 2: Reasoning	<ul style="list-style-type: none"> Make inferences from patterns
Level 2: Reasoning	<ul style="list-style-type: none"> Make predictions from patterns
Level 3: Performance	<ul style="list-style-type: none"> Write equations from patterns
MO.A1.2.9 DOK 2	create and solve systems of linear equations graphically and numerically using the elimination method and the substitution method, given a real-world situation.
Level 1: Knowledge	<ul style="list-style-type: none"> Definition of elimination method

Level 1: Knowledge	<ul style="list-style-type: none"> • Definition of substitution method
Level 2: Reasoning	<ul style="list-style-type: none"> • Create systems of linear equations graphically using the elimination method given a real
Level 2: Reasoning	<ul style="list-style-type: none"> • Create systems of linear equations graphically using the substitution method given a real
Level 2: Reasoning	<ul style="list-style-type: none"> • Create systems of linear equations numerically using the elimination method given a real
Level 2: Reasoning	<ul style="list-style-type: none"> • Create systems of linear equations numerically using the substitution method given a real
Level 3: Performance	<ul style="list-style-type: none"> • Solve systems of linear equations graphically using the elimination method given a real
Level 3: Performance	<ul style="list-style-type: none"> • Solve systems of linear equations graphically using the substitution method given a real
Level 3: Performance	<ul style="list-style-type: none"> • Solve systems of linear equations numerically using the elimination method given a real
Level 3: Performance	<ul style="list-style-type: none"> • Solve systems of linear equations numerically using the substitution method given a real
MO.A1.2.4 DOK 2	develop and test hypotheses to derive the laws of exponents and use them to perform operations on expressions with integral exponents.
Level 1: Knowledge	<ul style="list-style-type: none"> • Definition of exponents
Level 2: Reasoning	<ul style="list-style-type: none"> • Develop hypotheses to derive the laws of exponents
Level 2: Reasoning	<ul style="list-style-type: none"> • Test hypotheses to derive the laws of exponents
Level 3: Performance	<ul style="list-style-type: none"> • Use laws of exponents to perform operations on expressions with integral exponents.
MO.A1.2.10 DOK 1	simplify and evaluate algebraic expressions <ul style="list-style-type: none"> • add and subtract polynomials • multiply and divide binomials by binomials or monomials
MO.A1.2.11 DOK 2	create polynomials to represent and solve problems from real-world situations while focusing on symbolic and graphical patterns.
MO.A1.2.12	use area models and graphical representations to develop and explain

DOK 2	appropriate methods of factoring.
MO.A1.2.13 DOK 1	simplify radical expressions <ul style="list-style-type: none"> through adding, subtracting, multiplying and dividing exact and approximate forms
MO.A1.2.14 DOK 2	choose the most efficient method to solve quadratic equations by <ul style="list-style-type: none"> graphing (with and without technology), factoring quadratic formula and draw reasonable conclusions about a situation being modeled.
MO.A1.2.15 DOK 2	describe real life situations involving exponential growth and decay equations including $y=2^x$ and $y=(\frac{1}{2})^x$; compare the equation with attributes of an associated table and graph to demonstrate an understanding of their interrelationship.
MO.A1.2.16 DOK 2	simplify and evaluate rational expressions <ul style="list-style-type: none"> add, subtract, multiply and divide determine when an expression is undefined.
MO.A1.2.17 DOK 2	perform a linear regression (with and without technology), <ul style="list-style-type: none"> compare and evaluate methods of fitting lines to data. identify the equation for the line of regression, examine the correlation coefficient to determine how well the line fits the data use the equation to predict specific values of a variable.
MO.A1.2.18 DOK 2	compute and interpret the expected value of random variables in simple cases using simulations and rules of probability (with and without technology).
MO.A1.2.19 DOK 2	gather data to create histograms, box plots, scatter plots and normal distribution curves and use them to draw and support conclusions about the data.
MO.A1.2.20 DOK 3	design experiments to model and solve problems using the concepts of sample space and probability distribution.
MO.A1.2.21 DOK 2	use multiple representations, such as words, graphs, tables of values and equations, to solve practical problems; describe advantages and disadvantages of the use of each representation.