Moon Area School District Curriculum Map

Course: Algebra One Linear
Grade Level: 9
Content Area: Math
Frequency: Full-Year Course

Unit 0

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline
Real Numbers How do you model real numbers in a real-world situation? **Simplifying Variable Expressions** What does it look like to be in simplest form? **Writing Verbal Models and Data Analysis** What predictions can you make from a scatterplot or matrix?	CC.2.1.8.E.1 Distinguish between rational and irrational numbers using their properties. CC.2.1.8.E.4 Estimate irrational numbers by comparing them to rational numbers. CC.2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational exponents. CC.2.1.HS.F.2 Apply properties of rational and irrational numbers	• Order real numbers • State the absolute value of a number • Add, subtract, multiply & divide real numbers • Simplify variable expressions involving exponents • Combining like terms • Identify and write expressions for real-life functions • Find the probability of an event • Construct a scatterplot and make predictions about real-life situations • Add and subtract two matrices	August - October

Unit 1

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline
Equations What is meant by equality when solving equations? How are the volume formulas for cone, cylinder and sphere related? **Inequalities** How do the words "and" and "or" affect the outcome of an inequality? **Data Analysis** How does the choice of the data display influence the prediction or probability? Name a real-life situation that can be represented in a two-way table. What can this table tell us? **Unit 1 Cumulative Assessment**	CC.2.1.HS.F.3 Apply quantitative reasoning to choose and interpret units and scales in formulas, graphs, and data displays. CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems. CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations. CC.2.2.8.C.1 Define, evaluate, and compare functions	• Solve linear equations using addition, subtraction, multiplication and division of real numbers • Use two or more transformations to solve an equation • Write ratios and proportions to represent real world problems. • Identify scale factor in proportions and ratios. • Collect variables on one side of an equation • Solve absolute value equations • Solve literal equations and rewrite equations in function form/slope-intercept form. • Apply formulas for the volume of a cone, cylinder and sphere. • Graph and solve one-step inequalities in one variable. • Solve multi-step inequalities. • Write, solve and graph compound inequalities. • Solve absolute value inequalities. • Find the probability of an event and apply two-way tables. • Find the median, outliers and range of data. • Draw and interpret a box-and whisker plot. • Identify the interquartile range of the data set. • Determine outcomes as certain, less and more likely • Determine probability of compound events • Construct a scatterplot and make predictions about real- life situations.	November - February

Unit 2

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline
Functions What does slope-intercept form of an equation tell us? **Writing Linear Equations** How do we use real-world data to write the equation of a line?	CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.	• Whether relations are functions • Domain and range of a function • Independent and dependent variables of functions • Make and input-output table for a function • Use function notation to evaluate functions. • Graph a linear equation using a table • Graph a linear equation using the intercepts • Find the slope of a line using two of its points or the slope of a linear function. • Identify the constant of proportionality in an equation. • Graph a linear equation in slope-intercept form. • Use slope-intercept form to write the equation of a line. • Use slope and any point on a line to write an equation of the line. • Write an equation of a line given two points on the line. • Write a linear equation that approximates a set of data points. • Write a linear equation given the slope and a point	March - May

Unit 3

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline
Systems of Linear Equations and Inequalities How might one determine the most efficient method for solving a system of equations? Distinguish between the solution set of a system of equations verses system of inequalities.	CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations. CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.	• Solve a system of linear equations by graphing • Use substitution to solve a linear system. • Use linear combination to solve a system of linear equations. • Choose a method to solve a system of linear equations. • Identify linear systems as having one solution, no solution, or infinitely many solutions. • Graph a linear inequality in two variables. • Solve a system of linear inequalities by graphing.	May - June