Classical Magnet School

Course __Algebra 1_____

	Sept	Oct	Nov & Dec	Jan	Feb & March	April	May	June
Themes, Topics & Textbook Chapters	Operations and Variables 1.1 – 1.4, 2.1-2.3	Solving Linear Equations 3.1-3.3, 3.6, 3.9	Linear Functions and Scatter Plots 5.1-5.3, 6.1-6.7	Systems of Linear Functions 7.1-7.4	Proportions, Percent and Probability 2.6,2.7, 3.4,3.7, 12.7	Inequalities 4.1-4.6	Exponential Functions 8.7-8.8	Review
Essential Questions	In what ways is math represented/communicated? How do we represent or communicate ideas in mathematics? Are rules necessary?	Why is balance necessary in life? How do we maintain balance?	How are relationships represented? How do you describe the nature of a relationship? How do you measure change?	Is there a best way to solve a problem?	How do you determine fairness? What is fair?	How do you compare things? How do you determine worth?	How does one measure growth?	
Standards	<u>Algebra</u> Interpret parts of an expression, such as terms, factors, and coefficients A-SSE1a <u>Functions</u> Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output 8.F1. Use function notation, evaluate functions or inputs in their domains, and interpret statements that use function notation in terms of a context. F-IF2.	<u>Algebra</u> Create equations that describe numbers or relationships A-CED. Understand Solving equations as a process of reasoning and explain the reasoning. A-REI. Solve equations in one variable A-REI	<u>Functions</u> Understand the concept of a function and use function notation F-IF. Interpret functions that arise in applications in terms of the context. F-IF. Analyze functions using different representations. F-IF Write a function that describes a relationship between two quantities. F-BF1. Prove that linear functions grow by equal differences over equal intervals. F-LE1a. <u>Functions</u> Interpret the parameters in a linear function in terms of a context. F-LE5. <u>Statistics</u> Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. S-ID6. Interpret the slope (rate of change) and the	<u>Algebra</u> Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of other produces a system with the same solutions. A-REI5. Solve systems of linear equations exactly and approximately focusing on pairs of linear equations in two variables A-REI6.	<u>Geometry</u> Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar. G-SRT2. <u>Statistics</u> Understand independence and conditional probability and use them to interpret data S-CP1-5. Use the rules of probability to computer probabilities of compound events in a uniform probability model. S-CP 6-9.	<u>Algebra</u> Create equations and inequalities in one variable and use them to solve problems. A-CED2	<u>Functions</u> Construct and compare linear and exponential models and solve problems F-LE1-4. Interpret the parameters in an exponential function in terms of a context. F-LE5.	

			intercept (constant term) of a linear model in the context of the data. S-ID7.					
Major Skills	Use variables to model relationships. Simplify variable expressions using order of operations. Use coordinate plane to represent functions.	Solve two-step and multi-step equations, including those with variables on both sides and the distributive property. Use equations to model and solve real-world situations.	Analyze, describe, and generalize, linear functions using tables, rules, equations and graphs. Calculate slope. Use coordinate plane to represent functions. Use and apply the standard form and y-intercept form of the equations of lines. Understand the relationship between slopes of parallel and perpendicular lines	Construct and use systems linear functions to model and solve real-world solutions.	Use ratios, proportions and percents to solve equations. Use probability to make predictions and evaluate the likelihood of simple and compound events.	Solve two-step and multi-step inequalities. Use inequalities to model and solve real-world situations.	Analyze, describe, and generalize, exponential functions using tables, rules, equations and graphs. Use exponential functions to model and solve real-world situations.	Review course content.
Coached Projects					-What is beauty? -Racial Profiling Activity			
Seminars	"What Side of the Road?" Staircase Problem	'Number is the ruler' Pythagoras quote	Bottle/Graph "The Family Race" Problem – slope (CAPT)	Spider legs – system of equations	Vitruvius 10 Books of Architecture Racial Profiling	Cell Phone Plan Comparison	Growth Seminar	