

DEPARTMENT: MATHEMATICS	COURSE TITLE: ALGEBRA HONORS COURSE NUMBER: 314
GRADE(S): 9-12	PRE-REQUISITES (IF ANY): B IN MATH 8 OR CONFERENCE WITH DEPARTMENT HEAD

UNIT	LENGTH	CONTENT	SKILLS	METHODS OF ASSESSMENT	FRAMEWORK STRAND(S) & STANDARD(S)
Relationships and Methods of Representation	1-2 weeks	<ul style="list-style-type: none"> Qualitative graphing Coordinate plane Creating data tables and graphs from equations Introduction to linear and non-linear graphs Recognizing polynomial functions from data tables 	<ul style="list-style-type: none"> Identify independent, dependent variable Plot points Understand vocabulary of coordinate plane Use graphing calculator 	<ul style="list-style-type: none"> Tests Lab reports Homework Notebook Papers In-class projects Portfolio 	2,4,5,7,8,17,18, 19
Direct Variation, Inverse Variation and Linear Functions	2-3 weeks	<ul style="list-style-type: none"> Definition of function Direct variation functions Inverse variation functions Linear functions 	<ul style="list-style-type: none"> Recognize different types of functions from data, situations, equations, or graphs Write equations to model these types of situations 	<ul style="list-style-type: none"> Tests Lab reports Homework Notebook Papers In-class projects Portfolio 	4,5,7,8,9,14
Single Variable Equations and Inequalities	2-3 weeks	<ul style="list-style-type: none"> Order of operations Solving equations symbolically Writing equations to model situations 	<ul style="list-style-type: none"> Compute with whole numbers, decimals, fractions, integers Simplify expressions Identify and use properties (commutative, associative, distributive) Identify and use properties of equality 	<ul style="list-style-type: none"> Tests Lab reports Homework Notebook Papers In-class projects Portfolio 	1,2,4,5,6,14,16
Linear Equations, Inequalities and Slope	3-4 weeks	<ul style="list-style-type: none"> Definition and meaning of slope Finding slope from a graph, data table, equation Positive, negative, zero, undefined slope Recognizing linear vs. non-linear data tables Standard form of linear equations Slope-intercept form of linear equations Point-slope form of linear equations Writing equations to model linear situations Coordinate geometry Distance and midpoint formulae X and y-intercepts Parallel and perpendicular lines 	<ul style="list-style-type: none"> Find slope from data or equations Compare slopes (positive, negative, zero, undefined, parallel, non-parallel) Translate growth rate into slope Graph from equations, data tables, or situations Interpret graphs Transform equations from one form to another Check whether a point is on a graph Graph linear inequalities 	<ul style="list-style-type: none"> Tests Lab reports Homework Notebook Papers In-class projects Portfolio 	4,5,6,7,8,9,10,14, 16,17, 18, 19

Systems of Equations and Inequalities	3-4 weeks	<ul style="list-style-type: none"> Recognizing what a system is Solving by graphing Solving by substitution Solving by addition, subtraction Writing and solving systems to model situations Solving systems of inequalities by graphing 	<ul style="list-style-type: none"> Graph two equations or inequalities on the same set of axes Estimate points of intersection Check solutions to systems Interpret a graph of a system 	<ul style="list-style-type: none"> Tests Lab reports Homework Notebook Papers In-class projects Portfolio 	4,5,6,8,14,16
Quadratic Equations	4-5 weeks	<ul style="list-style-type: none"> Standard form Vertex form Factored form Writing equations to model quadratic situations Solving quadratic equations using graphing, factoring, completing the square, and the quadratic formula 	<ul style="list-style-type: none"> Simplify polynomials by adding/subtracting like terms Multiply binomials and polynomials Factor polynomials Simplify rational expressions Divide polynomials by monomials Complete the square Use the quadratic formula 	<ul style="list-style-type: none"> Tests Lab reports Homework Notebook Papers In-class projects Portfolio 	1,2,3,4,5,6,7,8,11,12,13,14,17,19
Exponential Equations and Laws of Exponents	2-3 weeks	<ul style="list-style-type: none"> Recognizing an exponential set of data Laws of exponents Negative exponents Zero exponent 	<ul style="list-style-type: none"> Perform computation with exponents Simplify expressions involving exponents Complete exponential data tables Make graphs from equations Find patterns in exponential data 	<ul style="list-style-type: none"> Tests Lab reports Homework Notebook Papers In-class projects Portfolio 	4,5,7,8,12,14,17,19
Absolute Value Equations	1-2 weeks	<ul style="list-style-type: none"> Vertex form of absolute value equation Meaning of absolute value Solving absolute value equations 	<ul style="list-style-type: none"> Recognize absolute value equation in vertex form Graph absolute value equations and inequalities using data or vertex and slope Solve absolute value equation 	<ul style="list-style-type: none"> Tests Lab reports Homework Notebook Papers In-class projects Portfolio 	15