MARLBORO CENTRAL SCHOOL DISTRICT-CURRICULUM MAP

Subject: Integrated Algebra **Grade High School**

Month	Unit Name or Theme	Content	Skills	Assessment
September	Variables, Functions, Patterns, and Graphs	1-1 Using Variables 1-2 Using Exponents and Order of Operations 1-3 Exploring Real Numbers 1-4 Patterns and Functions 1-5 Scatter Plots 1-6 Mean, Median, Mode, and Range	A.A.1 Translate a quantitative verbal phrase into an algebraic expression. A.A.3 Translate a quantitative verbal phrase into an algebraic expression. A.A.4 Translate verbal sentences into mathematical equations or inequalities A.N.6 Evaluate expressions involving factorial(s), absolute value(s), and exponential expression(s). A.A.5 Write algebraic equations or inequalities that represent a situation. A.N.6 Evaluate expressions involving factorial(s), absolute value(s), and exponential expression(s). A.A.5 Write algebraic equations or inequalities that represent a Situation. A.S.7 Create a scatter plot of bivariate data. A.S.12 Identify the relationship between the independent and dependent variables from a scatter plot (positive, negative, or none). A.S.4 Compare and contrast the appropriateness of different measures of central tendency for a given data set.	Observations Homework Checkpoint quizzes Chapter assessments (Possibly Projects)
October	Rational Numbers	2-1 Adding Rational Numbers 2-2 Subtracting Rational Numbers 2-3 Multiplying and Dividing Rational Numbers	A.N.1 Identify and apply the properties of real numbers (closure, commutative, associative, distributive, identity, inverse) *Note: Students do not need to identify*	Observations Homework Checkpoint quizzes Chapter assessments

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		2-4 The Distributive Property 2-5 Properties of Numbers 2-6 Theoretical and Experimental Probability 2-7 Probability of Compound Events 12-7 Counting Methods and Permutations 12-8 Combinations	*groups and fields, but students should be engaged in the ideas.* A.N.6 Evaluate expressions involving factorial(s), absolute value(s), and exponential expression(s). A.N.1 Identify and apply the properties of real numbers (closure, commutative, associative, distributive, identity, inverse) *Note: Students do not need to identify groups and fields, but students should be engaged in the ideas.* A.N.6 Evaluate expressions involving factorial(s), absolute value(s), and exponential expression(s). A.N.1 Identify and apply the properties of real numbers (closure, commutative, associative, distributive, identity, inverse) *Note: Students do not need to identify groups and fields, but students should be engaged in the ideas.* A.A.13 Add, subtract, and multiply monomials and polynomials. A.N.1 Identify and apply the properties of real numbers (closure, commutative, associative, distributive, identity, inverse) *Note: Students do not need to identify groups and fields, but students should be engaged in the ideas.* A.S.20 Calculate the probability of an event and its complement. A.S.21 Determine empirical probabilities based on specific sample data. A.S.23 Calculate the probability of: o a series of independent events o a series of dependent events o two mutually exclusive events o two events that are not mutually exclusive	(Possibly Projects)

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			A.N.7 Determine the number of possible events, using counting techniques or the Fundamental Principle of Counting. A.N.8 Determine the number of possible arrangements (permutations) of a list of items. A.N.8 Determine the number of possible arrangements (permutations) of a list of items.	
November	Solving Equations Solving Inequalities	3-1 Solving Two-Step Equations 3-2 Solving Multi-Step Equations 3-3 Equations with Variables on Both Sides 3-4 Ratio and Proportion 3-5 Proportions and Similar Figures 3-6 Equations and Problem Solving 3-7 Percent of Change 3-8 Finding and Estimating Square Roots 3-9 The Pythagorean Theorem 4-1 Inequalities and Their Graphs 4-2 Solving Inequalities Using Addition and Subtraction 4-3 Solving Inequalities Using Multiplication and Division 4-4 Solve two-step inequalities	A.A.5 Write algebraic equations or inequalities that represent a Situation. A.A.6 Analyze and solve verbal problems whose solution requires solving a linear equation in one variable or linear inequality in one variable. A.N.1 Identify and apply the properties of real numbers (closure, commutative, associative, distributive, identity, inverse) *Note: Students do not need to identify groups and fields, but students should be engaged in the ideas.* A.A.5 Write algebraic equations or inequalities that represent a Situation. A.A.22 Solve all types of linear equations in one variable. A.A.5 Write algebraic equations or inequalities that represent a Situation. A.A.6 Analyze and solve verbal problems whose solution requires solving a linear equation in one variable or linear inequality in one variable. A.A.26 Solve algebraic proportions in one variable which result in linear or quadratic equations. A.M.1 Calculate rates using appropriate	Observations Homework Checkpoint quizzes Chapter assessments (Possibly Projects)

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			units (e.g., rate of a space ship versus the rate of a snail). A.M.2 Solve problems involving conversions within measurement systems, given the relationship between the units. A.A.6 Analyze and solve verbal problems whose solution requires solving a linear equation in one variable or linear inequality in one variable. A.A.25 Solve equations involving fractional expressions *Note: Expressions which result in linear equations in one variable.* A.A.26 Solve algebraic proportions in one variable which result in linear or quadratic equations. A.A.5 Write algebraic equations or inequalities that represent a Situation. A.N.5 Solve algebraic problems arising from situations that involve fractions, decimals, percents (decrease/increase and discount), and proportionality/direct variation. A.M.3 Calculate the relative error in measuring square and cubic units, when there is an error in the linear measure. A.N.2 Simplify radical terms (no variable in the radicand). A.A.45 Determine the measure of a third side of a right triangle using the Pythagorean theorem, given the lengths of any two sides. A.A.4 Translate verbal sentences into mathematical equations or Inequalities. A.A.21 Determine whether a given value is a solution to a given linear equation in one	

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			variable or linear inequality in one variable. A.A.6 Analyze and solve verbal problems whose solution requires solving a linear equation in one variable or linear inequality in one variable A.A.24 Solve linear inequalities in one variable	
December	Graphs and Functions	4-5 Compound Inequalities 4-6 Absolute Value Equations and Inequalities 5-1 Relating Graphs to Events 5-2 Relations and Functions 5-3 Function Rules, Tables, and Graphs 5-4 Writing a Function Rule 5-5 Direct Variation 5.6 Inverse Variation 5.7 Describing Number Patterns	A.A.4 Translate verbal sentences into mathematical equations or Inequalities. A.A.5 Write algebraic equations or inequalities that represent a situation. A.A.6 Analyze and solve verbal problems whose solution requires solving a linear equation in one variable or linear inequality in one variable A.A.24 Solve linear inequalities in one variable A.G.4 Identify and graph linear, quadratic (parabolic), absolute value, and exponential functions. A.CN.3 Model situations mathematically, using representations to draw conclusions and formulate new situations. A.G.3 Determine when a relation is a function, by examining ordered pairs and inspecting graphs of relations. A.G.4 Identify and graph linear, quadratic (parabolic), absolute value, and exponential functions. A.A.5 Write algebraic equations or inequalities that represent a situation. A.A.5 Write algebraic equations or inequalities that represent a situation. A.N.5 Solve algebraic problems arising from situations that involve fractions, decimals, percents	Observations Homework Checkpoint quizzes Chapter assessments (Possibly Projects)

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			(decrease/increase and discount), and proportionality/direct variation A.A.5 Write algebraic equations or inequalities that represent a situation. A.PS.3 Observe and explain patterns to formulate generalizations and conjectures.	
January	Systems of Equations and Inequalities	6-1 Rate of Change and Slope 6-2 Slope-Intercept Form 6-3 Applying Linear Functions 6-4 Standard Form 6-5 Point-Slope Form and Writing Linear Equations 6-6 Parallel and Perpendicular Lines 6-7 Scatter Plots and Equations of Lines 6-8 Graphing Absolute Value Equations 7-1 Solving Systems by Graphing 7-2 Solving Systems Using Substitution	A.A.32 Explain slope as a rate of change between dependent and independent variables. A.A.33 Determine the slope of a line, given the coordinates of two points on the line. A.A.34 Write the equation of a line, given its slope and the coordinates of a point on the line. A.A.35 Write the equation of a line, given the coordinates of two points on the line. A.A.37 Determine the slope of a line, given its equation in any form. A.A.5 Write algebraic equations or inequalities that represent a situation. A.G.4 Identify and graph linear, quadratic (parabolic), absolute value, and exponential functions. A.A.36 Write the equation of a line parallel to the x- or y-axis, A.G.4 Identify and graph linear, quadratic (parabolic), absolute value, and exponential functions. A.A.34 Write the equation of a line, given its slope and the coordinates of a point on the line. A.A.35 Write the equation of a line, given the coordinates of two points on the line. A.G.4 Identify and graph linear, quadratic (parabolic), absolute value, and exponential functions A.A.34 Write the equation of a line, given	Observations Homework Checkpoint quizzes Chapter assessments (Possibly Projects)

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			its slope and the coordinates of a point on the line. A.A.37 Determine the slope of a line, given its equation in any form. A.A.38 Determine if two lines are parallel, given their equations in any form. A.S.7 Create a scatter plot of bivariate data. A.S.8 Construct manually a reasonable line of best fit for a scatter plot and determine the equation of that line. A.S.17 Use a reasonable line of best fit to make a prediction involving interpolation or extrapolation. A.G.4 Identify and graph linear, quadratic (parabolic), absolute value, and exponential functions. A.A.7 Analyze and solve verbal problems whose solution requires solving systems of linear equations in two variables. A.G.7 Graph and solve systems of linear equations and inequalities with rational coefficients in two variables. A.G.9 Solve systems of linear and quadratic equations graphically *Note: Only use systems of linear and quadratic equations that lead to solutions whose coordinates are integers.* A.A.7 Analyze and solve verbal problems whose solution requires solving systems of linear equations in two variables. A.A.10 Solve systems of two linear equations in two variables algebraically.	
February	Exponents and Exponential Functions	7-3 Solving Systems Using Elimination 7-4 Applications of Linear Systems 7-5 Linear Inequalities 7-6 Systems of Linear Inequalities	A.A.7 Analyze and solve verbal problems whose solution requires solving systems of linear equations in two variables. A.G.7 Graph and solve systems of linear equations and inequalities with rational	Observations Homework Checkpoint quizzes Chapter assessments (Possibly Projects)

Month	Unit Name or Theme	Content	Skills	Assessment
		8-1 Zero and Negative Exponents 8-2 Scientific Notation 8-3 Multiplication Properties of Exponents 8-4 More Multiplication Properties of Exponents (Raising a Power to a Power) 8-5 Division Properties of Exponents	coefficients in two variables. A.A.6 Analyze and solve verbal problems whose solution requires solving a linear equation in one variable or linear inequality in one variable. A.A.21 Determine whether a given value is a solution to a given linear equation in one variable or linear inequality in one variable. A.G.6 Graph linear inequalities. A.A.40 Determine whether a given point is in the solution set of a system of linear inequalities. A.A.40 Determine whether a given point is in the solution set of a system of linear inequalities A.N.6 Evaluate expressions involving factorial(s), absolute value(s), and exponential expression(s). A.N.4 Understand and use scientific notation to compute products and quotients of numbers. A.N.4 Understand and use scientific notation to compute products and quotients of numbers. A.A.12 Multiply and divide monomial expressions with a common base, using the properties of exponents *Note: Use integral exponents only.*	
March	Polynomials and Factoring	8-6 Geometric Sequences 8-7 Exponential Functions 8-8 Exponential Growth and Decay 9-1 Adding and Subtracting Polynomials 9-2 Multiplying and Factoring 9-3 Multiplying Binomials 9-4 Squaring a Binomial and Difference of	A.PS.3 Observe and explain patterns to formulate generalizations and conjectures. A.N.6 Evaluate expressions involving factorial(s), absolute value(s), and exponential expression(s). A.G.4 Identify and graph linear, quadratic (parabolic), absolute value, and exponential functions.	Observations Homework Checkpoint quizzes Chapter assessments (Possibly Projects)

Month	Unit Name or Theme	Content	Skills	Assessment
		Perfect Squares 9-5 Factoring Trinomials (Leading Coefficient of One) 9-6 Factoring Trinomials (Leading Coefficient > 1) 9-7 Factoring Special Cases 9-8 Factoring by Grouping	A.A.9 Analyze and solve verbal problems that involve exponential growth and decay. A.A.13 Add, subtract, and multiply monomials and polynomials. A.A.13 Add, subtract, and multiply monomials and polynomials. A.A.20 Factor algebraic expressions completely, including trinomials with a lead coefficient of one (after factoring a GCF). A.A.13 Add, subtract, and multiply monomials and polynomials. A.A.20 Factor algebraic expressions completely, including trinomials with a lead coefficient of one (after factoring a GCF). A.A.19 Identify and factor the difference of two perfect squares. A.A.20 Factor algebraic expressions completely, including trinomials with a lead coefficient of one (after factoring a GCF). A.A.20 Factor algebraic expressions completely, including trinomials with a lead coefficient of one (after factoring a GCF).	
April	Quadratic Equations and Functions	10-1 Exploring Quadratic Graphs 10-2 Quadratic Functions 10-3 Solving Quadratic Equations 10-4 Factoring to Solve Quadratic Equations 10-4 Extension Solve a system with one linear and one quadratic function. 10-5 Completing the Square 10-6 Using the Quadratic Formula 10-8 Choosing a Linear, Quadratic, or	A.G.4 Identify and graph linear, quadratic (parabolic), absolute value, and exponential functions. A.G.10 Determine the vertex and axis of symmetry of a parabola, given its graph (See A.A.41) *Note: The vertex will have an ordered pair of integers and the axis of symmetry will have an integral value.* A.A.41 Determine the vertex and axis of symmetry of a parabola, given its equation.	Observations Homework Checkpoint quizzes Chapter assessments (Possibly Projects)

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		Exponential Model	A.A.8 Analyze and solve verbal problems that involve quadratic equations. A.G.4 Identify and graph linear, quadratic (parabolic), absolute value, and exponential functions. A.A.8 Analyze and solve verbal problems that involve quadratic equations. A.A.28 Understand the difference and connection between roots of a quadratic equation and factors of a quadratic expression. A.G.8 Find the roots of a parabolic function graphically *Note: Only quadratic equations with integral solutions.* A.A.8 Analyze and solve verbal problems that involve quadratic equations. A.A.27 Understand and apply the multiplication property of zero to solve quadratic equations with integral coefficients and integral roots. A.A.28 Understand the difference and connection between roots of a quadratic equation and factors of a quadratic expression. A.A.11 Solve a system of one linear and one quadratic equation. A.A.8 Analyze and solve verbal problems that involve quadratic equations. A.A.8 Analyze and solve verbal problems that involve quadratic equations. A.R.2 Recognize, compare, and use an array of representational forms.	
May	Rational Expressions and Equations Rational Expressions and Functions	11-1 Simplifying Radicals 11-2 Operations with Radical Expressions 11-3 Solving Radical Equations 11-4 Graphing Square Root Functions 11-5 Trigonometric Ratios 11-6 Angles of Elevation and Depression	A.N.2 Simplify radical terms (no variable in the radicand). A.N.3 Perform the four arithmetic operations using like and unlike radical terms and express the result in simplest form.	Observations Homework Checkpoint quizzes Chapter assessments (Possibly Projects)

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		12-1 Graphing Rational Functions 12-2 Simplifying Rational Expressions	A.N.3 Perform the four arithmetic operations using like and unlike radical terms and express the result in simplest form. A.PS.2 Recognize and understand equivalent representations of a problem situation or a mathematical concept. A.R.8 Use mathematics to show and understand mathematical phenomena (e.g., compare the graphs of the functions represented by the equations $y=x^2$ and $y=-x^2$). A.A.42 Find the sine, cosine, and tangent ratios of an angle of a right triangle, given the lengths of the sides. A.A.43 Determine the measure of an angle of a right triangle, given the length of any two sides of the triangle. A.A.44 Find the measure of a side of a right triangle, given an acute angle and the length of another side. A.A.44 Find the measure of a side of a right triangle, given an acute angle and the length of another side. A.R.2 Recognize, compare, and use an array of representational forms. A.A.16 Simplify fractions with polynomials in the numerator and denominator by factoring both and renaming them to lowest terms.	
June	**REVIEW FOR REGENTS**	12-3 Multiplying and Dividing Rational Expressions 12-4 Dividing Polynomials 12-5 Adding and Subtracting Rational Expressions 12-6 Solving Rational Equations	A.A.18 Multiply and divide algebraic fractions and express the product or quotient in simplest form. A.A.14 Divide a polynomial by a monomial or binomial, where the quotient has no remainder. A.A.17 Add or subtract fractional expressions with monomial or like	Observations Homework Checkpoint quizzes Chapter assessments (Possibly Projects)

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			binomial denominators. A.A.20 Factor algebraic expressions completely, including trinomials with a lead coefficient of one (after factoring a GCF). A.A.26 Solve algebraic proportions in one variable which result in linear or quadratic equations.	

Key to number:	A.G.2 A = Integrated Algebra G = Geometry 2 = Performance Indicator number	

N – Numbers and Operations
A – Algebra
G – Geometry
M – Measurement
S – Statistics and Probability