Course: Honors Math
Grade Level:8th Grade
Textbook/Instructional Materials: Glenco Course 3, Prentic Hall Pre- Algebra, Connect Ed Course 2 and 3

Month	IB Unit/Topic	Assessments and Activities	Approaches to Learning	Curriculum Standards and IB Criterion and Strands
September	**Real Numbers**	**Activities:** ISN Mystery Signs Newspaper Scavenger Hunt Bingo 1.1 Using Variables 1.2 Exponents & Order of Operations 1.3 Exploring Real Numbers 2.1 Adding Rational Numbers 2.2 Subtracting Rational Numbers 2.3 Mult/Dividing Rational Numbers 2.4 The Distributive Property **Formative:** quizzes exit tickets student-student interactions class discussion	In order for a students to (Ai) select appropriate mathematics when solving problems in both familiar and unfamiliar situations students must interpret data ATL Category:Thinking Skill Cluster: Critical Thinking In order for a students to (Aii) apply the selected mathematics successfully when solving problems students must combine knowledge, understanding and skills to create products or solutions ATL Category:Thinking Skill Cluster: Transfer In order for a students to (Aiii) solve problems correctly in a variety of contexts students must apply existing knowledge to generate new ideas, products or processes. ATL Category:Thinking Skill Cluster: Creative Thinking	**Curriculum Objectives:** **N.RN.3** Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. **IB Criterion/Strands:** Criterion A: Knowing and understanding i. select appropriate mathematics when solving problems in both familiar and unfamiliar situations ii. apply the selected mathematics successfully when solving problems iii. solve problems correctly in a variety of contexts

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		formulate rules warm-ups homework quizlet thatquiz Plickers Kahoot **Summative:** Unit 1 Test		
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
October	**Functions and Equations**	**Activities:** ISN Multi-Step Equations (All-Things-Algebra) One-Step Equation QR Task Cards Graphing Your Story Lesson 1.4 Introducing Functions 3.1 Solving 2-Step Equations 3.2 Solving Multi-Step Equations 3.3 Equations w Variables on Both Sides 5.1 Relating Graphs to	In order for a students to (Di) identify relevant elements of authentic real-life situations students must apply existing knowledge to generate new ideas, products, or processes. ATL Category:Thinking Skill Cluster: Creative In order for a students to (Dii) select appropriate mathematical strategies when solving authentic real-life situations students must apply skills and knowledge in unfamiliar situations ATL Category:Thinking Skill Cluster: Transfer In order for a students to (Diii) apply the selected mathematical strategies successfully to reach a	**Curriculum Objectives:** **F.IF.1** Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If *f* is a function and *x* is an element of its domain, then *f*(*x*) denotes the output of *f* corresponding to the input *x*. The graph of *f* is the graph of the equation *y* = *f*(*x*). **F.IF.2**. Use function notations, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. **F.IF.5** Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it*

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		Events 5.2 Relations and Functions 5.4 Writing a Function Rule **Formative:** quizzes exit tickets manipulatives student-student interactions class discussion formulate rules warm-ups homework quizlet thatquiz plickers **Summative:** Unit 2 Test	solution students must demonstrate persistence and perseverance ATL Category:Self-Management Skill Cluster: Affective In order for a students to (Div) explain the degree of accuracy of a solution students must practice flexible thinking- develop multiple opposing, contradictory and complementary arguments. ATL Category: Thinking Skill Cluster: Creative In order for a students to (Dv) describe whether a solution makes sense in the context of the authentic real-life situation students must propose and evaluate a variety of solutions. ATL Category:Thinking Skill Cluster:Critical Thinking	*takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.* **IB Criterion/Strands:** Criterion D: i. identify relevant elements of authentic real-life situations ii. select appropriate mathematical strategies when solving authentic real-life situations iii. apply the selected mathematical strategies successfully to reach a solution iv. explain the degree of accuracy of a solution v. explain whether a solution makes sense in the context of the authentic real-life situation.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
November December	**Solving Inequalities**	**Activities:** ISN	In order for a students to (Ci) use appropriate mathematical	**Curriculum Objectives:** **A.CED.1** Create equations and inequalities in one

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		Inequalities Activity 3.6 Equations and Problem-Solving pg. 140 3.9 Pythagorean Theorem 4.1Inequalities and Their Graphs 4.2 Solving Inequalities Using Add/Sub 4.3 Solving Inequalities Using Mult/Div 4.4 Solving Multi- Step Inequalities 4.5 Compound Inequalities **Formative:** quizzes exit tickets student-student interactions class discussion formulate rules warm-ups homework quizlet thatquiz plickers **Summative:**	language (notation, symbols and terminology) in both oral and written explanations students must understand and use mathematical notation ATL Category: Communication Skill Cluster: Communication Skills In order for a students to (Cii) use different forms of mathematical representation to present information students must analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding ATL Category:Thinking Skill Cluster: Critical Thinking In order for a students to (Ciii) move between different forms of mathematical representation students must compare conceptual understanding across multiple subject groups and disciplines ATL Category:Thinking Skill Cluster: Creative Thinking In order for a students to (Civ) communicate complete and coherent mathematical lines of	variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.* **A.REI.3** Solve linear equations and inequalities in one variable, including equations with coefficient represented by letters. **A-REI.12.** Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. **IB Criterion/Strands:** Criterion C: Communicating i. use appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations ii. use different forms of mathematical representation to present information iii. move between different forms of mathematical representation iv. communicate complete and coherent

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		Unit 3 Test Road Trip Assessment	reasoning students must practice visible thinking strategies and techniques ATL Category:Thinking Skill Cluster: Creative In order for a students to (Cv) organize information using a logical structure students must keep an organized and logical system of information files/notebooks ATL Category:Self-Management Skill Cluster: Organization Skills	mathematical lines of reasoning v. organize information using a logical structure.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
January	**Linear Functions**	**Activities:** ISN What is slope Slope formula tic-tac-toe Slope Intercept conversion secret message Why was the cat kicked out of school puzzle	In order for a students to (Bi) select and apply mathematical problem-solving techniques to discover complex patterns students must consider multiple alternatives, including those that might be unlikely or impossible ATL Category: Thinking Skill Cluster: Critical In order for a students to (Bii) describe patterns as relationships and/or general rules consistent with findings students must	**Curriculum Objectives:** **A.REI.1** Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. **A.CED.4** Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law V = IR to highlight resistance R.* **A.CED.1** Create equations and inequalities in one

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		Linear equation word problems Shelves Swimming Pool 6.1 Rate of Change 6.2 Slope-Intercept Form 6.3 Applying Linear Functions 6.4 Standard Form 6.5 Point-Slope Form 7.5 Linear Inequalities Domain & Range Graphing Vertical & Horizontal Lines **Formative:** quizzes exit tickets manipulatives student-student interactions class discussion formulate rules warm-ups homework quizlet thatquiz plickers **Summative:**	ATL Category:Thinking Skill Cluster: Critical Thinking In order for a students to (Biii) move between different forms of mathematical representation students must compare conceptual understanding across multiple subject groups and disciplines ATL Category:Thinking Skill Cluster: Creative Thinking	variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.* **A.REI.3** Solve linear equations and inequalities in one variable, including equations with coefficient represented by letters. **A.SSE.1** Interpret expressions that represent a quantity in terms of its context. **A.SSE.1a** Interpret parts of an expression, such as terms, factors, and coefficients. **A.SSE.1b** Interpret complicated expressions by viewing one or more of their parts as a single entity. **A.CED.2** Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. **A.REI.10.** Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). **F.IF.7** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

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		Unit 4 Test Fencing Your Property Performance Task		**F.LE.2** Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). **IB Criterion/Strands:** Criterion B: Investigating patterns i. select and apply mathematical problem-solving techniques to discover complex patterns ii. describe patterns as relationships and/or general rules consistent with findings iii. verify and justify relationships and/or general rules.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
February	**Solving systems**	**Activities:** ISN Break-Even Canoe Shop School of Rock 4.6 Absolute Value Equations & Inequalities 6.8 Graphing Absolute Value Equations	In order for a students to (Ci) use appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations students must understand and use mathematical notation ATL Category: Communication Skill Cluster: Communication Skills In order for a students to (Cii) use different forms of mathematical representation to present	**Curriculum Objectives:** **A.REI.7.** Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. **A.REI.5.** Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. **A.REI.6.** Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on

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		7.1 Solving Systems by Graphing 7.2 Solving Systems by Substitution 7.3 Solving Systems by Elimination 7.6 Systems of Linear Inequalities Inverse Functions **Formative:** quizzes exit tickets manipulatives student-student interactions class discussion formulate rules warm-ups homework quizlet thatquiz plickers **Summative:** Unit 5 Test Solving Systems Poster Project Systems of Equations Cell Phone Plan Task	information students must analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding ATL Category:Thinking Skill Cluster: Critical Thinking In order for a students to (Ciii) move between different forms of mathematical representation students must compare conceptual understanding across multiple subject groups and disciplines ATL Category:Thinking Skill Cluster: Creative Thinking In order for a students to (Civ) communicate complete and coherent mathematical lines of reasoning students must practice visible thinking strategies and techniques ATL Category:Thinking Skill Cluster: Creative In order for a students to (Cv) organize information using a logical structure students must keep an organized and logical system of information files/notebooks	pairs of linear equations in two variables. **A.REI.11** Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. **A.REI.12.** Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. **IB Criterion/Strands:** Criterion C: Communicating i. use appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations ii. use different forms of mathematical representation to present information iii. move between different forms of mathematical representation iv. communicate complete and coherent mathematical lines of reasoning

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			ATL Category:Self-Management Skill Cluster: Organization Skills	v. organize information using a logical structure.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
March	Exponents and Exponential Functions	**Activities:** ISN Paper folding and yarn cutting activity Bacteria Growth 8.1 Zero & Negative Exponents 8.3 Multiplication Properties of Exponents 8.4 More Multiplication Properties of Exponents 8.5 Division Properties of Exponents 8.7 Exponential Functions 8.8 Exponential Growth and Decay 7.4 Rational Exponents (Algebra 2) 10.8 Choosing a Linear, Quadratic, or Exponential Model **Formative:**	In order for a students to (Bi) select and apply mathematical problem-solving techniques to discover complex patterns students must consider multiple alternatives, including those that might be unlikely or impossible ATL Category: Thinking Skill Cluster: Critical In order for a students to (Bii) describe patterns as relationships and/or general rules consistent with findings students must ATL Category:Thinking Skill Cluster: Critical Thinking In order for a students to (Biii) move between different forms of mathematical representation students must compare conceptual understanding across multiple subject groups and disciplines ATL Category:Thinking Skill Cluster: Creative Thinking	**Curriculum Objectives:** **F.IF.6** Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. **F.IF.9** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.* **F.LE.3** Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. **N.RN.1** Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. *For example, we define* $5^{1/3}$ *to be the cube root of 5 because we want* $(5^{1/3})^3 = 5^{(1/3)3}$ *to hold, so* $(5^{1/3})^3$ *must equal 5.*

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		quizzes exit tickets manipulatives student-student interactions class discussion formulate rules warm-ups homework quizlet thatquiz Plickers Kahoot **Summative:** Unit 6 Test Let's Make a Deal		**N.RN.2** Rewrite expressions involving radicals and rational exponents using the properties of exponents. **IB Criterion/Strands:** Criterion B: Investigating patterns i. select and apply mathematical problem-solving techniques to discover complex patterns ii. describe patterns as relationships and/or general rules consistent with findings iii. verify and justify relationships and/or general rules.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
April	**Polynomials and Factoring**	**Activities:** ISN Factoring Brochure 9.1 Adding and Subtracting Polynomials 9.2 Multiplying and Factoring 9.3 Multiplying Binomials 9.4 Multiplying Special Cases	In order for a students to (Ai) select appropriate mathematics when solving problems in both familiar and unfamiliar situations students must interpret data ATL Category:Thinking Skill Cluster: Critical Thinking In order for a students to (Aii) apply the selected mathematics successfully when solving problems students must combine	**Curriculum Objectives:** **A.APR.1** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. **IB Criterion/Strands:** Criterion A: Knowing and understanding

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		9.5 Factoring Trinomials 9.6 Factoring Trinomials 9.7 Factoring Special Cases 9.8 Factoring by Grouping **Formative:** quizzes exit tickets student-student interactions class discussion formulate rules warm-ups homework quizlet thatquiz Plickers Kahoot **Summative:** Unit 7 Test	knowledge, understanding and skills to create products or solutions ATL Category:Thinking Skill Cluster: Transfer In order for a students to (Aiii) solve problems correctly in a variety of contexts students must apply existing knowledge to generate new ideas, products or processes. ATL Category:Thinking Skill Cluster: Creative Thinking	i. select appropriate mathematics when solving problems in both familiar and unfamiliar situations ii. apply the selected mathematics successfully when solving problems iii. solve problems correctly in a variety of contexts
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
May	**Quadratics**	**Activities:** ISN 10.1 Exploring Quadratic Graphs 10.2 Quadratic Functions Graph in Factored Form	In order for a students to (Di) identify relevant elements of authentic real-life situations students must apply existing knowledge to generate new ideas, products, or processes. ATL Category:Thinking	**Curriculum Objectives:** **F.BF.4** Find inverse functions. **F.BF.4a** Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse. *For example, f(x) =2 x^3*

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		Graph in Vertex Form Translate in between Forms Transformations of Quadratics 10.3 Solving Quadratic Equations 10.4 Factoring to Solve Quadratic Equations 10.5 Completing the Square 10.6 Using the Quadratic Formula 5.6 Complex/Imaginary Numbers (Algebra 2) Inverse Functions Systems of Quadratics & Linear Functions **Formative:** quizzes exit tickets student-student interactions class discussion formulate rules warm-ups homework quizlet thatquiz Plickers Kahoot	Skill Cluster: Creative In order for a students to (Dii) select appropriate mathematical strategies when solving authentic real-life situations students must apply skills and knowledge in unfamiliar situations ATL Category:Thinking Skill Cluster: Transfer In order for a students to (Diii) apply the selected mathematical strategies successfully to reach a solution students must demonstrate persistence and perseverance ATL Category:Self-Management Skill Cluster: Affective In order for a students to (Div) explain the degree of accuracy of a solution students must practice flexible thinking- develop multiple opposing, contradictory and complementary arguments. ATL Category: Thinking Skill Cluster: Creative In order for a students to (Dv) describe whether a solution makes sense in the context of the authentic real-life situation	*or f(x) = (x+1)/(x-1) for x ≠ 1.* **F.BF.3** Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. **F.BF.1** Write a function that describes a relationship between two quantities. **F.BF.1b** Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.* **F.IF.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity*

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		Summative: Solving Quadratic Equations Activity Unit 8 Test	students must propose and evaluate a variety of solutions. ATL Category:Thinking Skill Cluster:Critical Thinking	**F.IF.7** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. **F.IF.7a** Graph linear and quadratic functions and show intercepts, maxima, and minima. **F.IF.8** Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. **F.IF.8a** Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. **A.SSE.3** Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.★ **A.SSE.3a** Factor a quadratic expression to reveal the zeros of the function it defines. **A.SSE.3b** Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. **A.CED.1** Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.* **A.SSE.2** Use the structure of an expression to identify ways to rewrite it. *For example, see* $x^4 - y^4$

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				as $(x^2)^2 – (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 – y^2)(x^2 + y^2)$. **A.REI.4** Solve quadratic equations in one variable. **A.REI.4a** Use the method of completing the square to transform any quadratic equation in *x* into an equation of the form $(x – p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. **A.REI.4b** Solve quadratic equations by inspection (e.g. for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers *a* and *b*. **IB Criterion/Strands:** Criterion D: Applying mathematics in real-life contexts i. identify relevant elements of authentic real-life situations ii. select appropriate mathematical strategies when solving authentic real-life situations iii. apply the selected mathematical strategies successfully to reach a solution

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				iv. explain the degree of accuracy of a solution v. explain whether a solution makes sense in the context of the authentic real-life situation.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
June	Radicals and Statistics	**Activities:** ISN Fibonacci Sequence Activity Piecewise Functions Scavenger Hunt 11.1 Simplifying Radicals 11.2 Operations with Radical Expressions 11.3 Solving Radical Equations 11.4 Graphing Square Root Functions Cubic Functions pg. 605 5.7 Arithmetic Sequence Pg. 296 #62 Fibonacci Sequence 8.6 Geometric Sequence Piecewise Functions pgs. 304-305 Histograms pgs. 52-53 Box-and-Whisker Plots	In order for a students to (Ai) select appropriate mathematics when solving problems in both familiar and unfamiliar situations students must interpret data ATL Category:Thinking Skill Cluster: Critical Thinking In order for a students to (Aii) apply the selected mathematics successfully when solving problems students must combine knowledge, understanding and skills to create products or solutions ATL Category:Thinking Skill Cluster: Transfer In order for a students to (Aiii) solve problems correctly in a variety of contexts students must apply existing knowledge to generate new ideas, products or processes. ATL Category:Thinking	**Curriculum Objectives:** **A.REI.11** Explain why the *x*-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. **F.BF.3** Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. **F.IF.7** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

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		1.5 Scatter Plots 1.6 Mean, Median & Mode 6.7 Scatter Plots & Equations of Lines 4.6 Absolute Value & Error Tolerance **Formative:** quizzes exit tickets student-student interactions class discussion formulate rules warm-ups homework quizlet thatquiz Plickers Kahoot **Summative:** Unit 9 Test	Skill Cluster: Creative Thinking	**F.IF.7b** Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. **F.IF.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.* **F.IF.7** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. **F.IF.7b** Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. **F.BF.3** Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

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				S.ID.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. **S.ID.6a** Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given function or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. **S.ID.6b** Fit a linear function for a scatter plot that suggests a linear association. **S.ID.6c** Informally assess the fit of a function by plotting and analyzing residuals. **S.ID.7** Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. **S.ID.8** Compute (using technology) and interpret the correlation coefficient of a linear fit. **S.ID.9** Distinguish between correlation and causation. **S.ID.1** Represent data with plots on the real number line (dot plots, histograms, and box plots). **S.ID.3** Interpret differences in shape, center, and spread in the context of the data sets, accounting

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				for possible effects of extreme data points (outliers). **IB Criterion/Strands:** Criterion A: Knowing and understanding i. select appropriate mathematics when solving problems in both familiar and unfamiliar situations ii. apply the selected mathematics successfully when solving problems iii. solve problems correctly in a variety of contexts