

**Moonachie School District  
Mathematics Curriculum:  
Grade Eight  
Algebra 1**

**Born On & Board Approved: August 27, 2024**

Re-Adoption: August 26, 2025

The following maps outline the New Jersey Student Learning Standards Standards for Mathematics for Algebra 1. Below is a list of assessment tools that are recommended for tracking student progress in these areas. In addition, resources that can be used in conjunction with instruction of these standards are provided but not limited to the list below.

**Assessment:**

Formative Assessment	Class-Work Review
Open-Ended Problems	Project-Based Assessment
Self-Assessment	Teacher Observation
End of Year Assessment	Group & Cooperative Work
Benchmark Assessment	Math Software (ex. Study Island)
Homework Review	
Summative Assessment	

**Resources:**

Math Journals	Center Games	Tangrams
Bar Models	Ten Frame	Geometric Shapes
Math Word Wall	Protractors	Geo-Board
Connecting Cubes	Mini White Boards	Textbooks
Number Line	Manipulatives	Rulers
Grid Paper	Math Songs/Poems	Three Dimensional Shapes
Computer Software	Calculators	Wiki-Sticks
Interactive White Board	Fraction Tiles	Pattern Blocks
Compass	Measurement Tools	

**Websites:**

<a href="http://www.aplusmath.com">http://www.aplusmath.com</a>	<a href="http://www.wolframalpha.com">www.wolframalpha.com</a>	<a href="http://www.interactmath.com">www.interactmath.com</a>
<a href="http://www.studyisland.com">http://www.studyisland.com</a>	<a href="http://www.kutasoftware.com">www.kutasoftware.com</a>	<a href="http://www.number2.com">www.number2.com</a>
<a href="http://www.funbrain.com">http://www.funbrain.com</a>	<a href="http://www.illuminations.nctm.org">www.illuminations.nctm.org</a>	<a href="http://www.khanacademy.org">www.khanacademy.org</a>
<a href="http://www.songsforteaching.com">http://www.songsforteaching.com</a>	<a href="http://www.ixl.com">www.ixl.com</a>	<a href="http://www.betterlesson.com">www.betterlesson.com</a>
<a href="http://www.purplemath.com">www.purplemath.com</a>	<a href="http://www.tenmarks.com">www.tenmarks.com</a>	<a href="http://www.buzzmath.com">www.buzzmath.com</a>

**References:** <http://www.state.nj.us/education/aps/cccs/math/>  
<http://www.state.nj.us/education/cccs/2014/tech/8.pdf>

**Standards for Mathematical Practice**

**MP. 1 - Make Sense of problems and persevere in solving them.**

**MP. 2 - Reason Abstractly and Quantitatively**

**MP. 3 - Construct Viable Arguments and Critique the Reasoning of Others**

**MP. 4 - Model with Mathematics**

**MP. 5 - Use Appropriate Tools Strategically**

**MP. 6 - Attend to Precision**

**MP. 7 - Look for and make use of Structure**

**MP. 8 - Look for and Express Regularity in Repeated Reasoning**

**Algebra 1**  
**CONCEPTUAL CATEGORY: ALGEBRA**  
**DOMAIN: ARITHMETIC WITH POLYNOMIALS AND RATIONAL EXPRESSIONS**

**Length of Time: 54 days**

Benchmark Assessment	Formative Assessment	Summative Assessment	Alternate Assessment
STAR Math STAR Math (Spanish)	Entrance Slip Exit Slip Student Reflection Math Accountable Talk Whiteboard Work	Topic Review Topic Test Quick Check Fact Assessment Performance Task	Manipulative Based Task Open Ended Project Choice Board

**Cluster Heading**

**A.APR.A: Perform arithmetic operations on polynomials.**

**Performance Indicators**

A.APR.A.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.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: <ul style="list-style-type: none"> <li>- Explain how the parts of an expression (terms, factors, and coefficients) relate to the context of a problem.</li> <li>- Apply the order of operations.</li> <li>- Explain the properties of operations and exponents.</li> <li>- Explain how a zero of a function is the value which makes the function equal to zero.</li> <li>- Define a monomial as a number, a variable, or a product of a number and one or more variables.</li> </ul>	Polynomial Monomial Binomial Trinomial Quadratic Cubic Polynomial with 4 terms or more Polynomial with degree 4 or more Like Terms Coefficient Operations	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> <li>- Google Slides</li> <li>- Google Sheets</li> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>

<ul style="list-style-type: none"> <li>- Define a polynomial as a monomial or sum of monomials.</li> <li>- Understand that only like terms may be added or subtracted.</li> <li>- Explain how the exponents of like variables change when polynomials are multiplied.</li> <li>- Show how an equation or inequality which has only one variable can be solved.</li> <li>- Explain how the properties of equality apply to equations whether the equation involves one or multiple variables.</li> <li>- Explain when an equation has multiple variables, one may choose the variable of interest in which to solve.</li> </ul>		
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<p><b>Cluster Heading</b></p>
<p><b>A.APR.B: Understand the relationship between zeros and factors of polynomials.</b></p>
<p><b>Performance Indicators</b></p>
<p>A.APR.B.2 Know and apply the Remainder Theorem: For a polynomial <math>p(x)</math> and a number <math>a</math>, the remainder on division by <math>x - a</math> is <math>p(a)</math>, so <math>p(a) = 0</math> if and only if <math>(x - a)</math> is a factor of <math>p(x)</math>.</p> <p>A.APR.B.3 Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.</p>

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>- Explain how a zero of a function is the x-intercept of the function.</li> </ul>	<p>Remainder</p> <p>Remainder Theorem</p> <p>Zeros</p> <p>Polynomial</p>	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> <li>- Google Slides</li> <li>- Google Sheets</li> </ul>

<ul style="list-style-type: none"> <li>- Explain how when it is not prime, the standard form of a quadratic, <math>ax^2 + bx + c = 0</math>, can be transformed into factored form, <math>(x-p)(x-q) = 0</math>.</li> <li>- Show that when <math>(x) = (x-p)(x-q)</math>, then <math>f(p) = 0</math> and <math>f(q) = 0</math>.</li> <li>- Demonstrate the process to complete a square.</li> <li>- Explain that the standard form of a quadratic, <math>ax^2 + bx + c = 0</math>, can be transformed into vertex form, <math>a(x-h)^2 + k = 0</math>, by completing the square.</li> <li>- Explain how when a quadratic is in vertex form, the minimum or maximum point is <math>(h,k)</math>.</li> <li>- Explain how properties of linear and quadratic expressions can be extended to polynomial expressions.</li> <li>- Apply polynomial operations, specifically to use polynomial division and the Rational Root Theorem to determine key features of a polynomial.</li> <li>- Explain how a set has closure under an operation if performance of that operation on members of the set always produces a member of the same set.</li> <li>- Demonstrate the connection between factors, roots, and evaluating functions.</li> <li>- Complete long division with polynomials.</li> </ul>	<p>Factorization  Functions  X-Intercept  Prime  Standard Form  Factored Form  Vertex Form  Quadratic  Quadratic Expression  Linear Expression  Polynomial Expression  Polynomial Operations  Rational Root Theorem  Factor  Factor Theorem  Root  Division (long/synthetic)  Polynomial Functions  Square Root  Quadratic Formula  Monomial  Binomial  Trinomial</p>	<ul style="list-style-type: none"> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>
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<ul style="list-style-type: none"> <li>- Complete synthetic division with polynomials.</li> <li>- Define the Remainder Theorem: For a polynomial <math>p(x)</math> and a number <math>a</math>, the remainder on division by <math>x - a</math> is <math>p(a)</math>, so <math>p(a) = 0</math> if and only if <math>(x - a)</math> is a factor of <math>p(x)</math>.</li> <li>- Demonstrate the graphical behavior of polynomial functions which have roots with multiplicity greater than one.</li> <li>- Show properties that allow expressions to be written in a different form.</li> <li>- Complete the general division algorithm for polynomials.</li> <li>- Show how to take a square root of each side of an equation.</li> <li>- Apply quadratic formulas to equations.</li> </ul>		
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**Cluster Heading**

**A.APR.C: Use polynomial identities to solve problems.**

**Performance Indicators**

A.APR.C.4 (+) Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity  $(x^2 + y^2)^2 = (x^2 - y^2)^2 + (2xy)^2$ .

A.APR.C.5 (+) Know and apply the Binomial Theorem for the expansion of  $(x + y)^n$  in powers of  $x$  and  $y$  for a positive integer  $n$ , where  $x$  and  $y$  are any numbers, with coefficients determined for example by Pascal's Triangle.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to:	Binomial Theorem Rational Root Theorem	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> </ul>

<ul style="list-style-type: none"> <li>- Completely factor a polynomial function to determine its roots.</li> <li>- Sketch any polynomial using its roots, y-intercept, and end behavior.</li> <li>- Use what they know about polynomial identities and to discover relationships amongst numbers.</li> <li>- expand a binomial using Pascal's triangle</li> <li>- Apply the Binomial Theorem.</li> </ul>	Pascal's Triangle Zeros Multiplicity Factored form Intercepts Long division Synthetic division Real complex zeros Imaginary Solutions	<ul style="list-style-type: none"> <li>- Google Slides</li> <li>- Google Sheets</li> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>
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<b>Cluster Heading</b>
<b>A.APR.D: Rewrite rational expressions.</b>
<b>Performance Indicators</b>
<p>A.APR.D.6 Rewrite simple rational expressions in different forms; write <math>a(x)/b(x)</math> in the form <math>q(x) + r(x)/b(x)</math>, where <math>a(x)</math>, <math>b(x)</math>, <math>q(x)</math>, and <math>r(x)</math> are polynomials with the degree of <math>r(x)</math> less than the degree of <math>b(x)</math>, using inspection, long division, or, for the more complicated examples, a computer algebra system.</p>
<p>A.APR.D.7 (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.</p>

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: <ul style="list-style-type: none"> <li>- Explain properties that allow expressions to be written in a different form.</li> <li>- Rewrite simple rational expressions in different forms using inspection, long</li> </ul>	Rational Expressions Polynomials Rational Numbers Non-Zero Rational Expression End behavior Zeros	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> <li>- Google Slides</li> <li>- Google Sheets</li> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>

division or a computer algebra system. - Solve equations using Rational Root Theorem. - Apply the Conjugate Root Theorem.	Multiplicity Factored form Intercepts Long division Synthetic division Real complex zeros Imaginary Solutions Rational Root Theorem Conjugate Root Theorem	
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**HIGH SCHOOL MATHEMATICS**  
**CONCEPTUAL CATEGORY: ALGEBRA**  
**DOMAIN: CREATING EQUATIONS**


**Length of Time: 36 days**

Benchmark Assessment	Formative Assessment	Summative Assessment	Alternate Assessment
STAR Math STAR Math (Spanish)	Entrance Slip Exit Slip Student Reflection Math Accountable Talk Whiteboard Work	Topic Review Topic Test Quick Check Fact Assessment Performance Task	Manipulative Based Task Open Ended Project Choice Board

**Cluster Heading**

**A.CED.A: Create equations that describe numbers or relationships. ★**

**Performance Indicators**

A.CED.A.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.CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. ★

A.CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. ★ 🌱

A.CED.A.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  $R$ . ★ 🌱

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>- Write equations that represent equations and inequalities in one variable and apply them to solve real world problems.</li> <li>- Create equations for linear, quadratic, rational, and exponential functions.</li> <li>- Write equations in two or more variables to represent real world scenarios.</li> <li>- Graph equations on a coordinate plane with appropriate labels and scales.</li> <li>- Identify viable and nonviable solutions to an equation.</li> <li>- Solve literal equations for a given variable.</li> </ul>	<p>Equation            Inequalities            Solution            Greater than            Less than            Equal to            Linear            Quadratic            Rational            Exponential            Constraints            Viable            Non viable            Literal Equations            Systems of Equations</p>	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> <li>- Google Slides</li> <li>- Google Sheets</li> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>

**HIGH SCHOOL MATHEMATICS**  
**CONCEPTUAL CATEGORY: ALGEBRA**  
**DOMAIN: REASONING WITH EQUATIONS AND INEQUALITIES**

**Length of Time: 54 days**

Benchmark Assessment	Formative Assessment	Summative Assessment	Alternate Assessment
<p>STAR Math            STAR Math (Spanish)</p>	<p>Entrance Slip            Exit Slip            Student Reflection</p>	<p>Topic Review            Topic Test            Quick Check</p>	<p>Manipulative Based Task            Open Ended Project            Choice Board</p>

	Math Accountable Talk Whiteboard Work	Fact Assessment Performance Task	
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**Cluster Heading**

**A.REI.A: Understand solving equations as a process of reasoning and explain the reasoning.**

**Performance Indicators**

A.REI.A.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.REI.A.2 Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: <ul style="list-style-type: none"> <li>- Use the properties of equality to solve simple equations.</li> <li>- Explain the steps taken to solve a simple equation.</li> <li>- Check for extraneous solutions to an equation by plugging back in.</li> </ul>	Inverse operations Properties of Equality Solution Rational Equation Radical Equation Extraneous solutions	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> <li>- Google Slides</li> <li>- Google Sheets</li> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>

**Cluster Heading**

**A.REI.B: Solve equations and inequalities in one variable.**

**Performance Indicators**

A.REI.B.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

A.REI.B.4 Solve quadratic equations in one variable.

A.REI.B.4.a 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.B.4.b 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  $b$ .

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: <ul style="list-style-type: none"> <li>- Solve linear equations and inequalities in one variable.</li> <li>- Solve a quadratic equation in one variable by completing the square, quadratic formula, taking square roots, and factoring.</li> <li>- Identify complex solutions for quadratic equations</li> <li>- Simplify complex solutions in the form <math>a \pm bi</math>.</li> </ul>	Equations Inequalities Coefficients Quadratic Equations Quadratic Formula Square Root Property Completing the Square Factoring Complex Solutions	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> <li>- Google Slides</li> <li>- Google Sheets</li> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>

<b>Cluster Heading</b> <b>A.REI.C: Solve systems of equations.</b>
<b>Performance Indicators</b>
<p>A.REI.C.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.</p> <p>A.REI.C.6 Solve systems of linear equations algebraically (include using the elimination method) and graphically, focusing on pairs of linear equations in two variables.</p> <p>A.REI.C.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line <math>y = -3x</math> and the circle <math>x^2 + y^2 = 3</math></p> <p>A.REI.C.8 (+) Represent a system of linear equations as a single matrix equation in a vector variable.</p> <p>A.REI.C.9 (+) Find the inverse of a matrix if it exists and use it to solve system.</p>

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: <ul style="list-style-type: none"> <li>- Solve a system of linear equations using substitution, elimination, and graphing.</li> </ul>	Systems of Equations Substitution Elimination Ordered Pair - Solution	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> <li>- Google Slides</li> <li>- Google Sheets</li> </ul>

<ul style="list-style-type: none"> <li>- Solve a system of a linear and a quadratic equation algebraically and graphically.</li> </ul>	Linear Equation Quadratic Equation No solution One Solution Infinitely Many Solutions Intersection	<ul style="list-style-type: none"> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>
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<p><b>Cluster Heading</b>  <b>A.REI.D: Represent and solve equations and inequalities graphically.</b></p>
<p><b>Performance Indicators</b></p>
<p>A.REI.D.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).</p> <p>A.REI.D.11 Explain why the x-coordinates of the points where the graphs of the equations <math>y = f(x)</math> and <math>y = g(x)</math> intersect are the solutions of the equation <math>f(x) = g(x)</math>; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where <math>f(x)</math> and/or <math>g(x)</math> are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. ★</p> <p>A.REI.D.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</p>

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: <ul style="list-style-type: none"> <li>- Understand that the solution to an equation in two variables is any of the ordered pairs on the graph.</li> <li>- Understand that the x-coordinate of the intersection point is the solution to <math>f(x) = g(x)</math>.</li> <li>- Solve linear, polynomial, rational, absolute value, exponential, and logarithmic functions using various strategies and resources.</li> </ul>	Ordered Pair Solution Linear Inequality Solid Line Dashed Line Shade below Shade above Solution set Intersection Double Shaded Linear	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> <li>- Google Slides</li> <li>- Google Sheets</li> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>

<ul style="list-style-type: none"> <li>- Graph a linear inequality in two variables on a coordinate plane.</li> <li>- Graph a system of linear inequalities in two variables on a coordinate plane.</li> </ul>	Polynomial Rational Absolute Value Exponential Logarithmic	
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**HIGH SCHOOL MATHEMATICS**  
**CONCEPTUAL CATEGORY: ALGEBRA**  
**DOMAIN: SEEING STRUCTURE IN EXPRESSIONS**

**Length of Time: 36 Days**

Benchmark Assessment	Formative Assessment	Summative Assessment	Alternate Assessment
STAR Math STAR Math (Spanish)	Entrance Slip Exit Slip Student Reflection Math Accountable Talk Whiteboard Work	Topic Review Topic Test Quick Check Fact Assessment Performance Task	Manipulative Based Task Open Ended Project Choice Board

**Cluster Heading**

**A.SSE.A: Interpret the structure of expressions.**

**Performance Indicators**

A.SSE.A.1 Interpret expressions that represent a quantity in terms of its context. ★  
 A.SSE.A.1.a Interpret parts of an expression, such as terms, factors, and coefficients.  
 A.SSE.A.1.b Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret  $P(1+r)^n$  as the product of  $P$  and a factor not depending on  $P$ .  
 A.SSE.A.2 Use the structure of an expression to identify ways to rewrite it. For example, see  $x^4 - y^4$  as  $(x^2)^2 - (y^2)^2$ , thus recognizing it as a difference of squares that can be factored as  $(x^2 - y^2)(x^2 + y^2)$ .

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to:	Algebraic Expression Variable	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> </ul>

<ul style="list-style-type: none"> <li>- Translate a verbal description into an algebraic expression.</li> <li>- Translate an algebraic expression into a verbal description.</li> <li>- Identify terms, like terms, factors, variables, and coefficients of a polynomial expression.</li> <li>- Understand and identify the factors that make up a complicated expression.</li> <li>- Identify ways to rewrite an expression using various mathematical properties.</li> </ul>	<p>Coefficient Constant Factors Like Terms Properties Polynomial Expression</p>	<ul style="list-style-type: none"> <li>- Google Slides</li> <li>- Google Sheets</li> <li>- Teacher generated activities</li> <li>- Textbook resources</li> </ul>
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<p><b>Cluster Heading</b></p>
<p><b>A.SSE.B: Write expressions in equivalent forms to solve problems.</b></p>
<p><b>Performance Indicators</b></p>
<p>A.SSE.B.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. ★</p> <p>A.SSE.B.3.a Factor a quadratic expression to reveal the zeros of the function it defines.</p> <p>A.SSE.B.3.b Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.</p> <p>A.SSE.B.3.c Use the properties of exponents to transform expressions for exponential functions. For example the expression <math>1.15t</math> can be rewritten as <math>(1.15^{1/12})^{12t} \approx 1.012^{12t}</math> to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.</p> <p>A.SSE.B.4 (+) Derive and/or explain the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments. ★</p>

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>- Create an equivalent form of an expression using various mathematical properties.</li> </ul>	<p>Equivalent Expressions Mathematical Properties Quadratic Expression Factor Zeros</p>	<ul style="list-style-type: none"> <li>- Task cards</li> <li>- Google Forms</li> <li>- Google Slides</li> <li>- Google Sheets</li> <li>- Teacher generated activities</li> </ul>

<ul style="list-style-type: none"> <li>- Solve for the zeros of a quadratic expression by factoring.</li> <li>- Determine the maximum or minimum of a quadratic function by completing the square.</li> <li>- Transform exponential functions using properties of exponents.</li> <li>- Create, explain, and apply the formula for the sum of a finite geometric series.</li> </ul>	<p>Minimum Maximum Exponents Exponential Functions Geometric Series</p>	<ul style="list-style-type: none"> <li>- Textbook resources</li> </ul>
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### INTERDISCIPLINARY CONNECTIONS

<p><b>Other Core Content Areas</b></p>	<p><b>English Language Arts</b> <b>Grades 9-10</b></p> <ul style="list-style-type: none"> <li>- <a href="#">L.KL.8.2.A</a>: Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.</li> <li>- <a href="#">SL.PE.8.1</a> : Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.</li> <li>- <a href="#">SL.PE.8.1.A</a> Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.</li> <li>- <a href="#">SL.PE.8.1.B</a> Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed.</li> <li>- <a href="#">SL.PE.8.1.C</a> Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas.</li> </ul> <p><b>Science</b></p> <ul style="list-style-type: none"> <li>- <a href="#">MS-ETS1-1</a> Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</li> </ul> <p><b>Social Studies</b></p> <ul style="list-style-type: none"> <li>- <a href="#">6.3.8.CivicsPD.1</a>: Deliberate on a public issue affecting an upcoming election, consider opposing</li> </ul>
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	<p>arguments, and develop a reasoned conclusion.</p> <ul style="list-style-type: none"> <li>- 6.3.8.CivicsPI.3: Use a variety of sources from multiple perspectives to examine the role of individuals, political parties, interest groups, and the media in a local or global issue and share this information with a governmental or nongovernmental organization as a way to gain support for addressing the issue.</li> </ul>
<p><b>Career Readiness, Life Literacies and Key Skills</b></p>	<ul style="list-style-type: none"> <li>- 9.4.8.CI.1: Assess data gathered on varying perspectives on causes of climate change (e.g., cross cultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions.</li> <li>- 9.4.8.CI.3: Examine challenges that may exist in the adoption of new ideas.</li> <li>- 9.4.8.CT.1: Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective.</li> <li>- 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.</li> <li>- 9.4.8.CT.3: Compare past problem-solving solutions to local, national, or global issues and analyze the factors that led to a positive or negative outcome.</li> <li>- 9.4.8.IML.1: Critically curate multiple resources to assess the credibility of sources when searching for information.</li> <li>- 9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations.</li> <li>- 9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem..</li> <li>- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.</li> </ul>
<p><b>Computer Science and Design Thinking</b></p>	<ul style="list-style-type: none"> <li>- 8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.</li> <li>- 8.1.8.DA.6: Analyze climate change computational models and propose refinements.</li> <li>- 8.2.8.ED.2: Identify the steps in the design process that could be used to solve a problem.</li> <li>- 8.2.8.ED.3: Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketch).</li> <li>- 8.2.8.ED.7: Design a product to address a real-world problem and document the iterative design process, including decisions made as a result of specific constraints and trade-offs (e.g., annotated sketches).</li> </ul>

**MODIFICATIONS**

<b>English Language Learners</b>	<b>Special Education</b>	<b>At-Risk</b>	<b>Gifted and Talented</b>	<b>504</b>
Scaffolding Word walls Sentence/paragraph frames Bilingual dictionaries/translation Think Alouds Read Alouds Highlight key vocabulary Annotation guides Think-pair-share Visual aides Modeling Cognates	Word walls Visual aides Graphic organizers Multimedia Leveled-readers Assistive technology Notes/summaries Extended time Answer masking Answer eliminator Highlighter Color Contrast	Teacher tutoring Peer tutoring Study guides Graphic organizers Extended time Parent communication Modified assignments Counseling 8th Grade Standards Math Review	Curriculum compacting Challenge assignments Enrichment activities Tiered activities Independent research/inquiry Collaborative teamwork Higher level questioning Critical/Analytical thinking tasks Self-directed activities Standards for Trigonometry review	Word walls Visual aides Graphic organizers Multimedia Leveled readers Assistive technology Notes/summaries Extended time Answer masking Answer eliminator Highlighter Color contrast Parent communication Modified assignments Counseling