

High School Weekly Lesson Plan Template–Unit #4

<p>Unit 4 *for additional curriculum information, please visit the district's resource High School Pacing Guides or Georgia's K-12 Standards</p>	<p style="text-align: center;">Course Name:</p>
<p>Day 1</p>	<p>Standards: A.PAR.6.1 Interpret quadratic expressions and parts of a quadratic expression that represent a quantity in terms of its context.</p> <p>LT: I can classify/name a polynomial according to degree and number of terms.</p> <p>SC: –I can interpret parts of an expression, such as terms, factors, leading coefficient, coefficients, constant and degree in context. –I can name a polynomial by number of terms –I can name a polynomial by its degree</p> <p>Lesson/Activity: Vocabulary including terms, factors, leading coefficient, constant and degrees. Also review naming/classifying polynomials by degree and number of terms.</p> <p>Resources: Polynomial Mix and Match</p>
<p>Day 3</p>	<p>Standards: A.PAR.6.2 Fluently choose and produce an equivalent form of a quadratic expression to reveal and explain properties of the quantity represented by the expression.</p> <p>LT: I can add/subtract polynomial expressions and write the final answer in standard form.</p> <p>SC: –I can identify like terms. –I can add and subtract polynomial expressions</p>

	<p>–I can write the answer in standard form. Lesson/Activity: Adding/subtracting polynomial expressions Resources: https://lor2.gadoe.org/gadoe/file/3afbc6e9-a272-4483-abc5-55d56488df38/1/Multiplying-Binomials-and-Factoring-Trinomials.pdf</p>
<p>Day 4</p>	<p>Standards: A.PAR.6.2 Fluently choose and produce an equivalent form of a quadratic expression to reveal and explain properties of the quantity represented by the expression. LT: I can multiply polynomial expressions and write the final answer in standard form. SC: –I can identify like terms. –I can multiply constants and add like term variable exponents –I can multiply a monomial x binomial –I can multiply a binomial x binomial Lesson/Activity: Multiplying polynomials Resources: https://lor2.gadoe.org/gadoe/file/3afbc6e9-a272-4483-abc5-55d56488df38/1/Multiplying-Binomials-and-Factoring-Trinomials.pdf</p>
<p>Day 5</p>	<p>Standards: A.PAR.6.2 Fluently choose and produce an equivalent form of a quadratic expression to reveal and explain properties of the quantity represented by the expression. LT: I can multiply polynomial expressions and write the final answer in standard form. SC: –I can identify like terms. –I can multiply constants and add like term variable exponents –I can multiply a monomial x binomial –I can multiply a binomial x binomial Lesson/Activity: Multiplying polynomials Resources: https://lor2.gadoe.org/gadoe/file/3afbc6e9-a272-4483-abc5-55d56488df38/1/Multiplying-Binomials-and-Factoring-Trinomials.pdf</p>

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Day 6	QUIZ: Polynomials
Day 7	<p>Standards: A.PAR.6.2 Fluently choose and produce an equivalent form of a quadratic expression to reveal and explain properties of the quantity represented by the expression.</p> <p>LT: I will identify and factor the greatest common factor of a polynomial expressions. SC: –I can identify the greatest numerical factor of a polynomial. –I can identify the greatest common exponent of a variable as a GCF in a polynomial. Lesson/Activity: Factor polynomials using GCF. Resources:</p>
Day 8	<p>Standards: A.PAR.6.2 Fluently choose and produce an equivalent form of a quadratic expression to reveal and explain properties of the quantity represented by the expression.</p> <p>LT: I can factor a quadratic expression and rewrite it in factored/intercept form. SC: –I can use the x-method to solve for the factored form of a quadratic expression. –I can identify a, b, and c in a quadratic expression. –I can multiply $a * c$ –I can identify two factors that multiply to give me $(a * c)$ and also add to give me b.</p> <p>Lesson/Activity: Factoring trinomials using X (limit to $a=1$) Resources:</p>
Day 9	<p>Standards: A.PAR.6.2 Fluently choose and produce an equivalent form of a quadratic expression to reveal and explain properties of the quantity represented by the expression.</p> <p>LT: I can factor a quadratic expression and rewrite it in factored/intercept form.</p>

	<p>SC:</p> <ul style="list-style-type: none"> -I can use the x-method to solve for the factored form of a quadratic expression. -I can identify a, b, and c in a quadratic expression. -I can multiply $a * c$ -I can identify two factors that multiply to give me $(a * c)$ and also add to give me b. <p>Lesson/Activity: Factoring trinomials using X (limit to $a > 1$)</p> <p>Resources:</p>
<p>Day 10</p>	<p>Standards: A.PAR.6.2 Fluently choose and produce an equivalent form of a quadratic expression to reveal and explain properties of the quantity represented by the expression.</p> <p>LT: I can factor a quadratic expression and rewrite it in factored/intercept form.</p> <p>SC:</p> <ul style="list-style-type: none"> -I can use the x-method to solve for the factored form of a quadratic expression. -I can identify a, b, and c in a quadratic expression. -I can multiply $a * c$ -I can identify two factors that multiply to give me $(a * c)$ and also add to give me b. <p>Lesson/Activity: Factoring trinomials using X (limit to $a > 1$)</p> <p>Resources:</p>
<p>Day 11</p>	<p>Standards: A.PAR.6.2 Fluently choose and produce an equivalent form of a quadratic expression to reveal and explain properties of the quantity represented by the expression.</p> <p>LT: I can factor a polynomial using difference of two squares.</p> <p>SC:</p> <ul style="list-style-type: none"> -I can identify a polynomial that is a difference of two squares. -I can explain the difference between squares and square roots. -I can identify perfect squares. <p>Lesson/Activity: DOTS factoring/perfect square trinomials</p> <p>Resources:</p>

<p>Day 12</p>	<p>Standards: A.PAR.6.2 Fluently choose and produce an equivalent form of a quadratic expression to reveal and explain properties of the quantity represented by the expression.</p> <p>LT: I can choose the correct/most appropriate method to factor a polynomial given the form and number of terms.</p> <p>SC:</p> <ul style="list-style-type: none"> -I can use the form of the polynomial to identify when to use GCF, the big X when a is greater than or equal to 1, and/or Difference of Squares to factor a polynomial. <p>Lesson/Activity: Students will factor polynomials by applying the most appropriate method given form/number of terms of the polynomials.</p> <p>Resources:</p>
<p>Day 13</p>	<p>QUIZ: Factoring</p>
<p>Day 14</p>	<p>Standards: A.PAR.6.3 Create and solve quadratic equations in one variable and explain the solution in the framework of applicable phenomena.</p> <p>LT: I can solve a quadratic equation by factoring ($a=1$, $a>1$)</p> <p>SC:</p> <ul style="list-style-type: none"> -I can use the x-method to solve for factored form of a quadratic expression. -I can identify the solutions to the quadratic equation. -I understand the solutions to the quadratic equation are the x-intercepts when the quadratic equation is graphed. <p>Lesson/Activity: Solve a quadratic expression by factoring when $a = 1$ and $a>1$.</p> <p>Resources:</p>
<p>Day 15</p>	<p>Standards: A.PAR.6.3 Create and solve quadratic equations in one variable and explain the solution in the framework of applicable phenomena.</p> <p>LT: I can solve a quadratic equation by factoring ($a=1$, $a>1$)</p> <p>SC:</p> <ul style="list-style-type: none"> -I can use the x-method to solve for factored form of a quadratic expression. -I can identify the solutions to the quadratic equation. -I understand the solutions to the quadratic equation are the x-intercepts when the quadratic equation is graphed.

	<p>Lesson/Activity: Solve a quadratic expression by factoring when $a = 1$ and $a > 1$.</p> <p>Resources: https://lor2.gadoe.org/gadoe/file/ca70fc2d-a3c0-4e0d-84a6-712419afa013/1/Tracking-a-Dive.pdf</p>
Day 16	<p>Standards: A.PAR.6.3 Create and solve quadratic equations in one variable and explain the solution in the framework of applicable phenomena.</p> <p>LT: I can solve a quadratic equation by taking square roots.</p> <p>SC:</p> <ul style="list-style-type: none"> -I understand when to solve an equation by taking square roots. -I can identify perfect squares and their square roots. -I understand to use the +/- sign to the constant on the right after taking the root of both sides. -I can solve two equations to realize the solution of the quadratic equation. <p>Lesson/Activity: Students will solve quadratic equations by taking square roots.</p> <p>Resources:</p> <p>https://lor2.gadoe.org/gadoe/file/b2da5d6a-8ab7-4dd8-b1ec-5303d5d3d6f9/1/A-Sales-Competition.pdf</p>
Day 17	<p>Standards: Standards: A.PAR.6.3 Create and solve quadratic equations in one variable and explain the solution in the framework of applicable phenomena.</p> <p>LT: I can solve a quadratic equation by completing the square.</p> <p>SC:</p> <ul style="list-style-type: none"> -I understand how to create a perfect square trinomial by taking $b/2$ and squaring it. -I understand how to rewrite a perfect square trinomial as $(x - p)^2 = q$ -I can solve a quadratic equation and find the solution by taking square roots. <p>Lesson/Activity: Students will solve quadratic equations by completing the square.</p> <p>Resources:</p> <p>https://lor2.gadoe.org/gadoe/file/dbac9b81-3b9d-47bb-bef3-64906e6972f9/1/Transforming-Quadratic-Equations.pdf</p>
Day 18	<p>Standards: Standards: A.PAR.6.3 Create and solve quadratic equations in one variable and explain the solution in the framework of applicable phenomena.</p> <p>LT: I can solve a quadratic equation by completing the square.</p> <p>SC:</p>

	<p>–I understand how to create a perfect square trinomial by taking $b/2$ and squaring it. –I understand how to rewrite a perfect square trinomial as $(x - p)^2 = q$ –I can solve a quadratic equation and find the solution by taking square roots. Lesson/Activity: Students will solve quadratic equations by completing the square. Resources: https://lor2.gadoe.org/gadoe/file/dbac9b81-3b9d-47bb-bef3-64906e6972f9/1/Transforming-Quadratic-Equations.pdf</p>
<p>Day 19</p>	<p>Standards: A.PAR.6.3 Create and solve quadratic equations in one variable and explain the solution in the framework of applicable phenomena. LT: I can solve a quadratic equation using the quadratic formula. SC: –I can identify a, b, and c, and substitute values into the quadratic formula. –I can substitute values for a, b, and c to find the discriminant. –I can simplify/use the discriminant to identify the number of solutions for a quadratic equation. –I recognize the solutions to the quadratic formula are the zeros/x-intercepts when graphing the quadratic equation. Lesson/Activity: Students will solve quadratic equations using the quadratic formula. Resources: https://lor2.gadoe.org/gadoe/file/02ee1e34-ec78-47e5-914f-88714ffd88cb/1/Beyond-Factoring.pdf</p>

<p>Day 20</p>	<p>Standards: A.PAR.6.3 Create and solve quadratic equations in one variable and explain the solution in the framework of applicable phenomena.</p> <p>LT: I can solve a quadratic equation using the quadratic formula.</p> <p>SC:</p> <ul style="list-style-type: none"> -I can identify a, b, and c, and substitute values into the quadratic formula. -I recognize the solutions to the quadratic formula are the zeros/x-intercepts when graphing the quadratic equation. -I can substitute values for a, b, and c to find the discriminant. -I can simplify/use the discriminant to identify the number of solutions for a quadratic equation. <p>Lesson/Activity: Students will solve quadratic equations using the quadratic formula.</p> <p>Resources:</p>
<p>Day 21</p>	<p>Standards: A.PAR.6.3 Create and solve quadratic equations in one variable and explain the solution in the framework of applicable phenomena.</p> <p>LT: I can identify the best method to apply when solving a quadratic equation given its form.</p> <p>SC:</p> <ul style="list-style-type: none"> -I can solve a quadratic equation using factoring when $a=1$ and $a>1$. -I can solve a quadratic equation by taking square roots. -I can solve a quadratic equation by completing the square. -I can solve a quadratic equation using the quadratic formula. <p>Lesson/Activity: Students will choose the most appropriate method to solve a quadratic equation given its form.</p> <p>Resources:</p>
<p>Day 22</p>	<p>Standards: A.PAR.6.3 Create and solve quadratic equations in one variable and explain the solution in the framework of applicable phenomena.</p> <p>LT: I can identify the best method to apply when solving a quadratic equation given its form.</p> <p>SC:</p> <ul style="list-style-type: none"> -I can solve a quadratic equation using factoring when $a=1$ and $a>1$. -I can solve a quadratic equation by taking square roots.

	<p>–I can solve a quadratic equation by completing the square. –I can solve a quadratic equation using the quadratic formula. Lesson/Activity: Students will choose the most appropriate method to solve a quadratic equation given its form.</p>
Day 23	TEST
Day 24	<p>Standards: A.FGR.7.1 Use function notation to build and evaluate quadratic functions for inputs in their domains and interpret statements that use function notation in terms of a given framework. A.FGR.7.2 Identify the effect on the graph generated by a quadratic function when replacing $f(x)$ with $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x+k)$ for specific values of k (both positive and negative), find the value of k given the graphs. LT: –I can create/use a t-table to graph a quadratic function. –I can identify/match transformations with their correct function notation. SC: –I can substitute inputs for x to produce a y value. –I can use a t-table and input/output values to graph a quadratic function –I can identify transformations of a quadratic function given function notation. –I can use correct vocabulary to describe transformations of quadratic function in vertex form Lesson/Activity: Graphing Quadratic Functions Transformations (Horton) Resources: https://drive.google.com/drive/folders/1CkEQ14zd5zYe_Yc_NShINPNmqXiAE7CR</p>
Day 25	<p>Standards: A.FGR.7.3 Graph and analyze the key characteristics of quadratic functions. Standards: A. FGR.7.4 Relate the domain and range of a quadratic function to its graph and, where applicable, to the quantitative relationship it describes. LT: I can identify and interpret the key features of quadratic functions represented in tables and graphs. SC: –I can identify the vertex of a quadratic function. –I can identify the x-intercepts/zeroes of a function. –I can identify the y-intercept of a quadratic function. –I can identify the intervals of increase and decrease of a function. –I can identify the domain and range of a quadratic function</p>

	<p>–I can identify the end behavior of the quadratic function –I can identify symmetries of the quadratic function –I can determine the maximum or minimum value of the quadratic function. Lesson/Activity: Characteristics of Quadratic Functions Resources: https://lor2.gadoe.org/gadoe/file/8224930b-e37e-479f-ac84-e43f1d26ef5a/1/Characteristics-of-Quadratic-Functions-Student-Reproducible.pdf Foldable for Domain/Range: http://mrssecor.weebly.com/pre-calculus/domain-and-range-graphically-day-2 Handout from Horton: https://drive.google.com/drive/folders/1CkEQ14zd5zYe_Yc_NShINPNmqXiAE7CR Resources from Horton: https://drive.google.com/drive/folders/10jM1MFJsIFlyJd2Bp9oCzZ1KbbK988sv</p>
<p>Day 26</p>	<p>Standards: A.FGR.7.3 Graph and analyze the key characteristics of quadratic functions. Standards: A. FGR.7.4 Relate the domain and range of a quadratic function to its graph and, where applicable, to the quantitative relationship it describes. LT: I can identify and interpret the key features of quadratic functions represented in tables and graphs. SC: –I can identify the vertex of a quadratic function. –I can identify the x-intercepts/zeroes of a function. –I can identify the y-intercept of a quadratic function. –I can identify the intervals of increase and decrease of a function. –I can identify the domain and range of a quadratic function –I can identify the end behavior of the quadratic function –I can identify symmetries of the quadratic function –I can determine the maximum or minimum value of the quadratic function. Lesson/Activity: Characteristics of Quadratic Functions Resources: https://lor2.gadoe.org/gadoe/file/8224930b-e37e-479f-ac84-e43f1d26ef5a/1/Characteristics-of-Quadratic-Functions-Student-Reproducible.pdf Foldable for Domain/Range: http://mrssecor.weebly.com/pre-calculus/domain-and-range-graphically-day-2 Handout from Horton: https://drive.google.com/drive/folders/1CkEQ14zd5zYe_Yc_NShINPNmqXiAE7CR Standard form with Characteristics: https://drive.google.com/drive/folders/10jM1MFJsIFlyJd2Bp9oCzZ1KbbK988sv</p>

<p>Day 27</p>	<p>Standards: A.FGR.7.8 Write a function defined by a quadratic expression in different but equivalent forms to reveal and explain different properties of the function.</p> <p>LT:</p> <ul style="list-style-type: none"> -I can identify various forms of quadratic functions including standard, vertex and intercept form. -I can translate from standard to vertex form. -I can translate from vertex to standard form. -I can translate from standard to intercept form. <p>SC:</p> <ul style="list-style-type: none"> -I can identify the x coordinate of the vertex by substituting values into $-b/2a$. -I can substitute the x coordinate of the vertex into the quadratic equation to find the value of the y coordinate. -I can substitute a, h, k into vertex form to write the equation of the quadratic function from standard form. -I can write an equation in standard form given vertex form. <p>Lesson/Activity: Students should be able to move fluently (flexibly, accurately, efficiently) between the factored form, vertex form, and standard form of a quadratic function.</p> <p>Resources:</p> <p>https://lor2.gadoe.org/gadoe/file/dbac9b81-3b9d-47bb-bef3-64906e6972f9/1/Transforming-Quadratic-Equations.pdf</p>
<p>Day 28</p>	<p>Standards: A.FGR.7.8 Write a function defined by a quadratic expression in different but equivalent forms to reveal and explain different properties of the function.</p> <p>LT:</p> <ul style="list-style-type: none"> -I can identify various forms of quadratic functions including standard, vertex and intercept form. -I can translate from standard to vertex form. -I can translate from vertex to standard form. -I can translate from standard to intercept form. <p>SC:</p> <ul style="list-style-type: none"> -I can identify the x coordinate of the vertex by substituting values into $-b/2a$. -I can substitute the x coordinate of the vertex into the quadratic equation to find the value of the y coordinate. -I can substitute a, h, k into vertex form to write the equation of the quadratic function from standard form. -I can write an equation in standard form given vertex form.

	<p>–I understand that standard form of a quadratic equation is $y = ax^2 + bx + c$.</p> <p>–I understand that vertex form of a quadratic function is $y = a(x-h)^2 + k$</p> <p>–I understand that intercept form of a quadratic function is $f(x) = a(x-r)(x-s)$</p> <p>Lesson/Activity: Students should be able to move fluently (flexibly, accurately, efficiently) between the factored form, vertex form, and standard form of a quadratic function.</p> <p>Resources: https://lor2.gadoe.org/gadoe/file/dbac9b81-3b9d-47bb-bef3-64906e6972f9/1/Transforming-Quadratic-Equations.pdf</p>
Day 29	QUIZ
Day 30	<p>Standards: A.FGR.7.9 Compare characteristics of two functions each represented in a different way.</p> <p>LT: I can compare quadratic functions written in different formats (e.g, table, vertex form, standard form) and identify/compare their characteristics.</p> <p>–I can compare a quadratic and linear function and identify key characteristics/differences.</p> <p>SC:</p> <p>–I can identify key characteristics of a quadratic function given various forms.</p> <p>–I can identify key characteristics of a quadratic function given a table of values.</p> <p>–I can identify key characteristics of a quadratic function given the equation in standard form.</p> <p>–I can identify key characteristics of a quadratic function given the equation in vertex form.</p> <p>Lesson/Activity: Students should be able to:</p> <ul style="list-style-type: none"> ● compare a quadratic function to a linear function, or another quadratic function. ● compare key characteristics of quadratic functions with the key characteristics of linear functions. ● observe using graphs and tables that a quantity increasing quadratically will eventually exceed a portion of a quantity increasing linearly. <p>Resources: https://lor2.gadoe.org/gadoe/file/dbac9b81-3b9d-47bb-bef3-64906e6972f9/1/Transforming-Quadratic-Equations.pdf</p>
Day 31	Standards: A. FGR.7.4 Relate the domain and range of a quadratic function to its graph and, where applicable, to

	<p>the quantitative relationship it describes.</p> <p>A.FGR.7.5 Rewrite a quadratic function representing a mathematically applicable situation to reveal the maximum or minimum value of the function it defines. Explain what the value describes in context.</p> <p>A.FGR.7.6 Create quadratic functions in two variables to represent relationships between quantities; graph quadratic functions on the coordinate axes with labels and scales.</p> <p>LT: I can write a quadratic function/equation given a contextual situation.</p> <p>SC:</p> <ul style="list-style-type: none"> -I can identify and interpret the maximum or minimum value as it relates to the context. -I can identify and interpret the value of a as it relates to the context. -I can identify and interpret the value of the x intercepts as it relates to the context. -I can identify and interpret the value of the y intercept as it relates to the context. <p>Lesson/Activity: Students will model/write a quadratic equation given a mathematically applicable situation. Students will interpret the characteristics of the graph in terms of the context given.</p> <p>Resources: https://lor2.gadoe.org/gadoe/file/0e61deef-ba27-4719-a3f7-334cdf481799/1/Protein-Bar-Toss.pdf https://lor2.gadoe.org/gadoe/file/7bff7aa8-a227-48cf-9307-732615ab6658/1/Georgias-Peaches.pdf</p>
Day 32	<p>Standards: A.FGR.7.5 Rewrite a quadratic function representing a mathematically applicable situation to reveal the maximum or minimum value of the function it defines. Explain what the value describes in context.</p> <p>A.FGR.7.6 Create quadratic functions in two variables to represent relationships between quantities; graph quadratic functions on the coordinate axes with labels and scales.</p> <p>LT: I can write a quadratic function/equation given a contextual situation.</p> <p>SC:</p> <ul style="list-style-type: none"> -I can identify and interpret the maximum or minimum value as it relates to the context. -I can identify and interpret the value of a as it relates to the context. -I can identify and interpret the value of the x intercepts as it relates to the context. -I can identify and interpret the value of the y intercept as it relates to the context. <p>Lesson/Activity: Students will model/write a quadratic equation given a mathematically applicable situation. Students will interpret the characteristics of the graph in terms of the context given.</p> <p>Resources: https://lor2.gadoe.org/gadoe/file/0e61deef-ba27-4719-a3f7-334cdf481799/1/Protein-Bar-Toss.pdf https://lor2.gadoe.org/gadoe/file/7bff7aa8-a227-48cf-9307-732615ab6658/1/Georgias-Peaches.pdf</p>

<p>Day 33</p>	<p>Standards: A.FGR.7.7 Estimate, calculate, and interpret the average rate of change of a quadratic function and make comparisons to the average rate of change of linear functions.</p> <p>LT: I can find the average rate of change for a function.</p> <p>SC:</p> <ul style="list-style-type: none"> -I know that slope is the measure of rate of change for a linear function -I know that average rate of change can be calculated for a quadratic or exponential function by using a linear approximation -I can find average rate of change algebraically using rate of change formula -I can find average rate of change graphically using rise over run <p>Lesson/Activity: Students will use visual patterns to make inferences about quadratic functions and start to see the differences between linear and quadratic functions. Students will compute the average rate of change for linear and quadratic functions, compare them and draw inferences.</p> <p>Resources:</p> <p>https://lor2.gadoe.org/gadoe/file/fe34421e-7dd5-47c4-86f8-c1927660dc34/1/A-New-Kind-of-Pattern.pdf</p>
<p>Day 34</p>	<p>REVIEW</p>
<p>Day 35</p>	<p>TEST</p>