

## High School Weekly Lesson Plan Template–Unit #4B

Unit 4B	Course Name:	Considerations or scaffolds for Support	Considerations, additional learning for Honors
Day 1-3	<p><b>Standards: A.FGR.7.3 Graph and analyze the key characteristics of quadratic functions.</b></p> <p><b>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.</b></p> <p><b>LT:</b></p> <ul style="list-style-type: none"> <li>● I can identify and interpret the key features of quadratic functions represented in tables and graphs.</li> </ul> <p><b>SC:</b></p> <ul style="list-style-type: none"> <li>● I can identify the vertex of a quadratic function.</li> <li>● I can identify the x-intercepts/zeroes of a function.</li> <li>● I can identify the y-intercept of a quadratic function.</li> <li>● I can identify the intervals of increase and decrease of a function.</li> <li>● I can identify the domain and range of a quadratic function</li> <li>● I can identify the end behavior of the quadratic function</li> <li>● I can identify symmetries of the quadratic function</li> <li>● I can determine the maximum or minimum value of the quadratic function.</li> </ul> <p><b>Lesson/Activity:</b> Characteristics of Quadratic Functions</p>	Resources: Desmos, GADOE Inspire Activities, Open Middle Resources, 3 Act Tasks.	Resources: Desmos, GADOE Inspire Activities, Open Middle Resources, 3 Act Tasks.
Day 4-5	<b>Standards: A.FGR.7.1 Use function notation to build and</b>		

	<p>evaluate quadratic functions for inputs in their domains and interpret statements that use function notation in terms of a given framework.</p> <p><b>A.FGR.7.2</b> Identify the effect on the graph generated by a quadratic function when replacing <math>f(x)</math> with <math>f(x) + k</math>, <math>kf(x)</math>, <math>f(kx)</math>, and <math>f(x+k)</math> for specific values of <math>k</math> (both positive and negative), find the value of <math>k</math> given the graphs.</p> <p><b>LT:</b></p> <ul style="list-style-type: none"> <li>• I can identify/match transformations with their correct function notation.</li> </ul> <p><b>SC:</b></p> <ul style="list-style-type: none"> <li>• I can use correct vocabulary to describe transformations of quadratic function in vertex form.</li> <li>• I can identify <math>a</math>, <math>h</math>, and <math>k</math>.</li> <li>• I can identify the vertex of a quadratic function in vertex form.</li> </ul> <p><b>Lesson/Activity:</b> Graphing Quadratic Functions Transformations.</p> <p><b>Resources:</b></p>		
Day 6-7	<p><b>Standards: A.FGR.7.8</b> Write a function defined by a quadratic expression in different but equivalent forms to reveal and explain different properties of the function.</p> <p><b>LT:</b></p> <ul style="list-style-type: none"> <li>• I can identify various forms of quadratic functions including standard, vertex and intercept form.</li> <li>• I can rewrite from standard to vertex form.</li> <li>• I can rewrite from vertex to standard form.</li> <li>• I can translate from standard to intercept form.</li> </ul> <p><b>SC:</b></p>		

	<ul style="list-style-type: none"> <li>• I can identify the x coordinate of the vertex by substituting values into <math>-b/2a</math>.</li> <li>• I can substitute the x coordinate of the vertex into the quadratic equation to find the value of the y coordinate.</li> <li>• I can substitute a, h, k into vertex form to write the equation of the quadratic function from standard form.</li> <li>• I can write an equation in standard form given vertex form.</li> </ul> <p><b>Lesson/Activity:</b> Students should be able to move fluently (flexibly, accurately, efficiently) between the factored form, vertex form, and standard form of a quadratic function.</p>		
Days 8-9	<p><b>Standards: A. FGR.7.4</b> Relate the domain and range of a quadratic function to its graph and, where applicable, to the quantitative relationship it describes.</p> <p><b>A.FGR.7.5</b> 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><b>A.FGR.7.6</b> Create quadratic functions in two variables to represent relationships between quantities; graph quadratic functions on the coordinate axes with labels and scales.</p> <p><b>LT:</b></p> <ul style="list-style-type: none"> <li>• I can write a quadratic function/equation given a contextual situation.</li> </ul> <p><b>SC:</b></p> <ul style="list-style-type: none"> <li>• I can identify and interpret the maximum or</li> </ul>		

	<p>minimum value as it relates to the context.</p> <ul style="list-style-type: none"> <li>• I can identify and interpret the value of <math>a</math> as it relates to the context.</li> <li>• I can identify and interpret the value of the <math>x</math> intercepts as it relates to the context.</li> <li>• I can identify and interpret the value of the <math>y</math> intercept as it relates to the context.</li> <li>•</li> </ul> <p><b>Lesson/Activity:</b> 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>		
Day 10	<p><b>Standards: A.FGR.7.7</b> 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><b>LT:</b></p> <ul style="list-style-type: none"> <li>• I can find the average rate of change for a function.</li> </ul> <p><b>SC:</b></p> <ul style="list-style-type: none"> <li>• I can find the average rate of change algebraically using rate of change formula.</li> <li>• I can find average rate of change graphically using rise over run.</li> </ul> <p><b>Lesson/Activity:</b> 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>		

Day 11	REVIEW		
Day 12	TEST		