

## Assessment Blueprint - Unit 7 Introduction to Quadratic Functions

### Unit 7 Overview and Readiness (prerequisite skill assessment)

Item	TEKS
1	A10(B) multiply polynomials of degree one and degree two ( <i>from Unit 6</i> )
2	A10(E) factor, if possible, trinomials with real factors in the form $ax^2+bx+c$ , including perfect square trinomials of degree two ( <i>from Unit 6</i> )
3	Identifying difference between linear and exponential data (given in tables) -discussion of constant growth factor and constant difference ( <i>from Unit 5</i> )  A3(C) graph linear functions on the coordinate plane and identify key features, including $x$ -intercept, $y$ -intercept, zeros, and slope, in mathematical and real-world problems  A9(D) graph exponential functions that model growth and decay and identify key features, including $y$ -intercept and asymptote, in mathematical and real-world problems

### Unit 7 Section A

Item	TEKS
1	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
2	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry

3	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
4	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
5	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry

## Unit 7 Section B

Item	TEKS
1	A10(B) multiply polynomials of degree one and degree two
2	A12(B) evaluate functions, expressed in function notation, given one or more elements in their domains
3	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
4	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
5	A6(A) determine the domain and range of quadratic functions and represent the domain and range using inequalities
6	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry

## Unit 7 Section C

Item	TEKS
1	A10(B) multiply polynomials of degree one and degree two
2	A10(D) rewrite polynomial expressions of degree one and degree two in equivalent forms using the distributive property
3	A6(B) write equations of quadratic functions given the vertex and another point on the graph, write the equation in vertex form $(f(x)=a(x-h)^2+k)$ , and rewrite the equation from vertex form to standard form $(f(x)=ax^2+bx+c)$
4	A10(E) factor, if possible, trinomials with real factors in the form $ax^2+bx+c$ , including perfect square trinomials of degree two
5	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
6	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry

## Unit 7 Section D

Item	TEKS
1	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
2	A6(C) write quadratic functions when given real solutions and graphs of their related equations
3	A7(B) describe the relationship between the linear factors of quadratic expressions and the zeros of their associated quadratic functions

4	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
5	A6(B) write equations of quadratic functions given the vertex and another point on the graph, write the equation in vertex form ( $f(x)=a(x-h)^2+k$ ), and rewrite the equation from vertex form to standard form ( $f(x)=ax^2+bx+c$ )
6	A7(C) determine the effects on the graph of the parent function $f(x)=x^2$ when $f(x)$ is replaced by $af(x)$ , $f(x)+d$ , $f(x-c)$ , $f(bx)$ for specific values of $a$ , $b$ , $c$ , and $d$

## Unit 7 Quiz

Item	TEKS
1	<p>A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including <math>x</math>-intercept, <math>y</math>-intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry</p> <p>A9(D) graph exponential functions that model growth and decay and identify key features, including <math>y</math>-intercept and asymptote, in mathematical and real-world problems</p>
2	A12(B) evaluate functions, expressed in function notation, given one or more elements in their domains
3	A6(C) write quadratic functions when given real solutions and graphs of their related equations
4	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
5	A10(E) factor, if possible, trinomials with real factors in the form $ax^2+bx+c$ , including perfect square trinomials of degree two
6	A7(B) describe the relationship between the linear factors of quadratic expressions and the zeros of their associated quadratic functions

7	A7(C) determine the effects on the graph of the parent function $f(x)=x^2$ when $f(x)$ is replaced by $af(x)$ , $f(x)+d$ , $f(x-c)$ , $f(bx)$ for specific values of $a$ , $b$ , $c$ , and $d$
8	A6(C) write quadratic functions when given real solutions and graphs of their related equations
9	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
10	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry

## Unit 7 STAAR Review

Item	TEKS
1	A7(B) describe the relationship between the linear factors of quadratic expressions and the zeros of their associated quadratic functions
2	A6(A) determine the domain and range of quadratic functions and represent the domain and range using inequalities
3	A7(A) graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
4	A7(C) determine the effects on the graph of the parent function $f(x)=x^2$ when $f(x)$ is replaced by $af(x)$ , $f(x)+d$ , $f(x-c)$ , $f(bx)$ for specific values of $a$ , $b$ , $c$ , and $d$
5	A6(C) write quadratic functions when given real solutions and graphs of their related equations
6	A11(B) simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents
7	A10(E) factor, if possible, trinomials with real factors in the form $ax^2+bx+c$ , including perfect square trinomials of degree two

8	A9(C) write exponential functions in the form $f(x)=ab^x$ (where $b$ is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay
9	A12(A) decide whether relations represented verbally, tabularly, graphically, and symbolically define a function
10	A5(C) solve systems of two linear equations with two variables for mathematical and real-world problems

## Unit 7 Project

TEKS	
A6(B)	write equations of quadratic functions given the vertex and another point on the graph, write the equation in vertex form ( $f(x)=a(x-h)^2+k$ ), and rewrite the equation from vertex form to standard form ( $f(x)=ax^2+bx+c$ )
A7(A)	graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including $x$ -intercept, $y$ -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry
A7(C)	determine the effects on the graph of the parent function $f(x)=x^2$ when $f(x)$ is replaced by $af(x)$ , $f(x)+d$ , $f(x-c)$ , $f(bx)$ for specific values of $a$ , $b$ , $c$ , and $d$