Plan for Algebra 1 Unit 6: Introduction to Quadratic Functions

Relevant Unit(s) to review: Grade 7, Unit 6: Expressions, Equations, and Inequalities

Essential prior concepts to engage with this unit	• Write equivalent expressions by combining like terms and applying the distributive property.
Brief narrative of approach	The majority of the concepts in this unit will be new for students and the prerequisite skills required have been built throughout the course. Places where students may struggle are applying quadratic functions in the context of maximizing area and rewriting expressions by combining like terms and applying the distributive property. Because these topics are introduced in grades 6 and 7, no supplemental lessons are suggested here. Use the Check Your Readiness assessment, particularly questions 1–3, to assess student readiness for these topics. While no lessons are recommended for addition or removal due to unfinished learning, some suggestions are made for modifying the unit in case there is limited time at the end of the school year to teach Units 6 and 7 to fidelity. If teaching all of Units 6 and 7 is not possible due to time constraints, it is recommended that some lessons in Unit 6 be removed, so that students can be introduced to solving quadratic equations in Unit 7.

Lessons to Add	Lessons to Remove or Modify
If students need additional support with combining like terms or applying the distributive property, Grade 7 Unit 6 Lessons 18–22 address these topics. The Algebra 1 Extra Supports materials, particularly Lessons 1 and 3, provide additional material for students who may	No lessons are recommended to remove or modify for additional lessons. If time is an issue, these modifications could be made to move students more quickly into working with quadratic equations in the next unit: 1. Combine Lessons 1 and 2. Emphasize Activities 2.2 and 2.3.

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need resources to support their understanding of area and perimeter.	2. Combine Lessons 3 and 4. Emphasize Activity 4.2 and the idea that exponential functions always eventually grow more quickly than quadratic functions. 3. Remove Lesson 7. This focuses on quadratic functions in the context of price versus revenue). 4. Remove Lesson 13. This focuses on the effect of the linear term in quadratic functions and is beyond the scope of Algebra 1 standards. 5. Remove Lessons 15–17. These lessons introduce vertex form. While vertex form is important, the lessons in the first sections of Unit 7 are higher priority for Algebra 1 students.
Lessons added: 0	Lessons removed: 0

Modified Plan for Algebra 1 Unit 6

Day	IM lesson	Notes
	assessment	A1.6 Check Your Readiness assessment Note that the Check Your Readiness assessment includes item-by-item guidance to inform just-in-time adjustments to instruction within the lessons in Unit 6
1	A1.6.1	This lesson and the next can be moved through quickly, or assigned partially as out-of-class work if you are pressed for time.
2	A1.6.2	
3	A1.6.3	This lesson and Lesson 4 could be condensed if you are pressed for time, or if students have had experience with visual patterns. Comparing the rates of growth in exponential and quadratic functions should be emphasized.

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4	A1.6.4	
5	A1.6.5	
6	A1.6.6	
7	A1.6.7	This lesson could be removed if you are pressed for time and your standards do not emphasize price vs. revenue as a context for quadratic functions.
8	A1.6.8	
9	A1.6.9	
10	A1.6.10	
11	Mid-unit assessment	If Lesson 7 is removed, consider omitting item 7.
12	A1.6.11	
13	A1.6.12	
14	A1.6.13	This lesson is beyond the scope of Algebra 1 and could be removed.
15	A1.6.14	
16	A1.6.15	This is the first of three lessons focused on vertex form.
17	A1.6.16	
18	A1.6.17	
19	End of unit assessment	If Lesson 13 is removed, Item 3 should be modified or omitted. If Lessons 15–17 are omitted, consider modifying or omitting Item 2 and Item 6.

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Priority and Category List for Lessons

High priority (+), Medium priority (0), Low priority (-)

E: Explore, Play, and Discuss, D: Deep Dive, A: Synthesize and Apply

Lesson	Priority (+, 0, -)	Category (E, D, A)	Notes
A1.6.1	0	E	
A1.6.2	+	D	Introduces quadratic expressions
A1.6.3	0	E	Explores quadratic expressions through visual patterns
A1.6.4	0	D	Compares exponential and quadratic functions (prioritize if this is emphasized in your standards)
A1.6.5	0	E	Quadratic functions in context
A1.6.6	+	D	Gives the meaning of the a, b, and c term in quadratic functions in a context.
A1.6.7	-	A	Provides the context of price vs. revenue in quadratic functions
A1.6.8	+	E	Introduces the factored form of a quadratic function
A1.6.9	+	D	Formally introduces standard form and factored form
A1.6.10	+	A	Connects back to quadratic functions in context and explores graphs of functions and how they connect to standard and factored form
A1.6.11	0	E	Further explores graphing quadratic functions in factored form

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A1.6.12	0	D	Explores the effect of the coefficient of the squared term and the constant term on the graphs of quadratic functions. Activity 2 is essential to this concept
A1.6.13	-	D	This lesson is optional, because it goes beyond the scope of understanding required for Algebra 1 by examining the effect of the b term on the graph of a quadratic function.
A1.6.14	+	A	Supports students in transferring what they have learned about equations and graphs of quadratic functions to make sense of quadratic functions that model concrete contexts
A1.6.15	+	E	Introduces vertex form
A1.6.16	-	D	Graphing from vertex form
A1.6.17	-	A	Explores transformations of graphs in vertex form

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