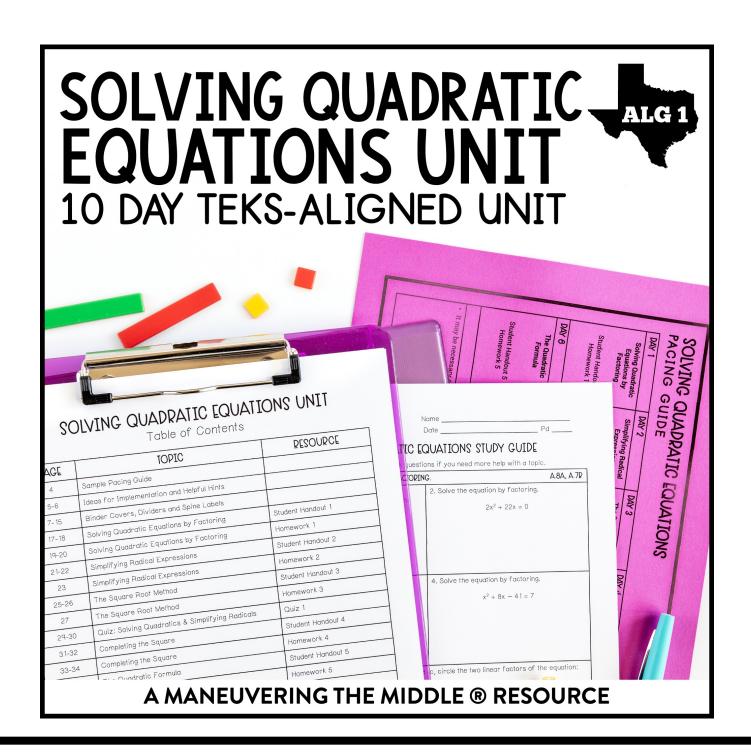
learning focus:

- simplify numerical radical expressions
- solve quadratic equations using various methods
- √ write quadratic equations from solutions





a 10 day TEKS-aligned unit TEKS: A.6C, A.7B, A.8A, A.11A

ready-to-go, scaffolded student materials

SOLVING QUADRATIC EQUATIONS UNIT

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student friendly + real-world application

Unit: Solving Quadro Student Handout 2		Name Date			scaff conc		
If the window has an	area of 144 in ² , write on Then simplify the expression	We can use the product prope to simplify radical expressions SIMPLIFYING P.	rty of squar with the ste	(PRESSIONS	Ex: Simplify √24	-	
	principal, or pressions, we can us PTY OF SQUARE "are positive real nullowing is true:	1. Find the largest 2. Rewrite the radicand as a factor and the 3. Take the square roo Use the steps above to simplify 4. √48	a product us e ot of any	ing the perfect square	$\sqrt{} \cdot 6$ $\sqrt{} \cdot \sqrt{6}$ Name		.Pd
•	expression is simpli implest form becaus a simplest form beca perfect squares but is the factors of and determine if	7. Joe and Audrey believe that name of the student who is cor		SIMP Simplify each radical expression in simplest form. Then unscran		he students who	se expression is already
1. √27 a. Factors: b. Simplified?	2. √38 a. Facto b. Simpl	8. Tamika is baking cupcakes. To potholder she is using has an a square inches. Write an expres represent one side length of the simplify.	rea of 4 ssion to	ENRIQUE $\sqrt{147}$	CED <u>ER</u> IC 2√43	}	<u>S</u> ASHA 7√63
		Summarize today's lesson:		$\frac{\text{GREGORY}}{\sqrt{150}}$	<u>AS</u> IA 5√151		<u>ER</u> IC 3√80
nteractive oractice		7	Q: WHERE IS A	MATHEMATICIAN'S FAV A: TIMES		E TO TRAVEL? ©Maneuvering the Middle LLC, 2020	

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streamline your planning process with unit overviews

SOLVING QUADRATIC EQUATIONS **OVERVIEW**

DAY 6

The Quadratic Formula

Student Handout 5

Homework 5



STANDARD

READINESS	SUPPORTING
A.8A solve quadratic equations having real solutions by factoring, taking square roots, completing the square, and applying the quadratic	A.6C write quadratic functions when given real solutions and graphs of their related equations
formula	A.7B describe the relationship between the linear factors of quadratic expressions and the zeros of their associated quadratic functions
	A.11A simplify numerical radical expressions involving square roots

key vocabulary

vertical alignment

PIG IDEAS

- Similar to linear equations, the equation true
- There are several methods
- shown on the graph.

ESSENTIAL QUESTIONS

- How can a numerical radio
- · Why is it helpful to have m
- How can solutions to quad · If given the graph of a qua

PACING GUIDE DAY 1 DAY 3

DAY 7

It may be necessary and/or helpful to add in extra

Solutions

Student Handout 6 Homework 6

SOLVING QUADRATIC EQUATIONS



DAY 4 DAY 5 The Square Root Method Solving Quadratic Simplifying Radical Quiz: Solving Completing the Square Equations by Factoring Ouadratics and Expressions Simplifying Radicals Student Handout 1 Student Handout 2 Homework 1 Homework 2

sample pacing calendar

SOLVING QUADRATIC EQUATIONS Writing Quadratic **OVERVIEW** Equations from



TOPIC		TEACHING TIPS			
Simplifying Ra Expression		If students are struggling to simplify radicals by identifying the largest perfect square factor, consider having them use the prime factorization method.			
		Up to this point, students have typically focused on solving linear equations. Build on this prior knowledge and help make solving quadratics less abstract by letting students know they're still finding values for "x" that make the equation true.			
Solving Quad Equation:		When teaching the different methods to solve quadratic equations, try to build in conversations where students pause to observe the structure of the equations they are solving and why particular methods either work well or don't work well to solve the given equation. While students often naturally prefer a certain method, it's necessary for them to see that not all methods will always work.			
		Allow students opportunities to check their solution by either plugging the solution back into the original equation or graphing the equation on their calculator and tracing the zeros.			
		Search "Quadratic Formula Pop Goes the Weasel" on YouTube for a "catchy" song to help students memorize the formula!			
		Be sure that students have plenty of practice writing linear factors from the solutions of a graph before			

moving on to the next step to calculate the value of "a" in y = a(x - r)(x - s).

Allow students to discover the necessity of solving for "a" by asking several students to draw different

Consider connecting this lesson to using vertex form to write equations from graphs. Discuss when this method is beneficial versus when vertex form is beneficial.

teaching ideas

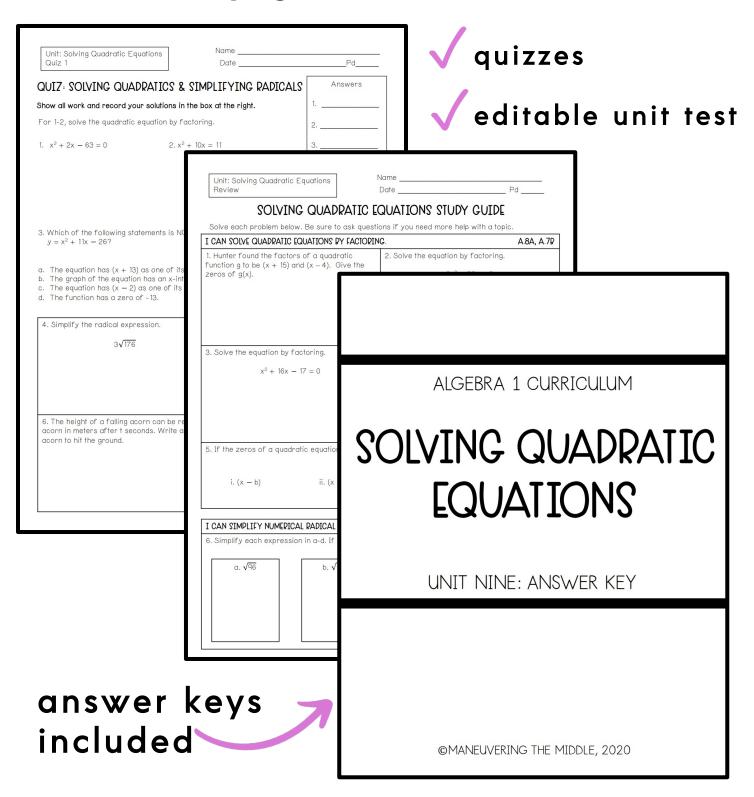
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Writing Quadratic



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unit study guide + assessments



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