Teacher: Ms. E Lopez **Date:** 4-8-26 **Length of lesson**:60minutes

Subject/Class: Sheltered Algebra 1 **English proficiency levels**: EL levels 1 & 2

Topic: Finding Zeros of Quadratics by Factoring

Math Standards/Mathematical Practice: Common Core Content Standard:
CCSS.MATH.CONTENT.HSA.REI.B.4 Solve quadratic equations by factoring.

- **MP1:** Make sense of problems and persevere in solving them
- **MP3:** Construct viable arguments and critique the reasoning of others
- **MP6:** Attend to precision (especially in mathematical language and explanations)

Language Standards: **California ELD Standards (Aligned):**

- **Part I: Interacting in Meaningful Ways**
  - **ELD.PI.9.1:** Exchange information and ideas through oral communication
  - **ELD.PI.9.12:** Use appropriate vocabulary and language structures to explain ideas
- **Part II: Learning About How English Works**
  - **ELD.PII.9.6:** Connect ideas using sequence words (first, next, then, finally)

Content objectives:	I can find the zeros of a quadratic equation by factoring
Language objectives	I can explain how I found the zeros using complete sentences and math vocabulary like factors, zeros, and equations.
Content concepts	• A quadratic equation can be written in standard form • Factoring helps rewrite the equation into factored form • The zero product property allows us to find solutions • The zeros represent the x-intercepts of a parabola • Solving is not enough; explaining the process is just as important

Key vocabulary	factored form standard form	Parabola Factors Zeros	quadratic equation quadratic function
Adaptations for different proficiency levels(scaffolds)	This entire lesson is an adaptation to serve every multilingual learner in my sheltered Algebra 1 class. Supports include • Structured sentence frames to guide mathematical explanations • Visual models and worked examples during direct instruction • Turn and talk / pair share to build oral language before writing • Repetition of key vocabulary throughout the lesson • Guided notes to reduce cognitive load and support organization • Use of Gemini (AI) to revise and improve written explanations • Option to translate explanations into students' home language to strengthen understanding		

Activities

Links to Learning Experience:	**Slides:** finding zeros algebra ELD slides.pptx **Student notes (graphic organizer):** Student notes for Finding Zeros Slides.docx **AI activity:** AI as a Math Validator Assignment **Assessment:** Factoring Trinomials and Finding Zeros **Video support:** https://youtu.be/Q7LtA4UPVFw
Instructions	**Lesson Flow** 1. Warm-Up (slide#1, 5min): Students find factor pairs and discuss patterns. 2. We Do(10min): Solve x^2 + 7x + 10 = 0 together. You Do(5min): Students solve independently and prepare an explanation. Pair Share: Students explain using sentence frames. Notes & Direct Instruction: Teacher models factoring and the zero product property.

	3. AI self-check activity using guided steps 4. AI Integration: Students use Gemini to revise explanations. 5. Exit Ticket: Solve x^2 + 6x + 8 = 0 and explain reasoning. Differentiation: Sentence frames, partner talk, AI support, translation options. Technology Integration: Gemini supports lesson planning and student revision. 6. Quiz Video Support: Teacher-created video for absent students.