

1. Benchmark:  
CCSS A.SSE.3a Factor a quadratic expression to reveal the zeros of the function it defines.
2. Behavior Objective:
  - a. Given two binomials, the students will be able to convert a quadratic function from factored form to standard form with 80% accuracy.
3. Anticipatory Set:
  - a. The students will complete a warm-up sheet on finding the vertex from graphs and tables. Also, the students will be given **one minute essay** to provide a written answer on the following question: “How do you find a vertex of a quadratic from a graph/table? What does the vertex of a quadratic tell us?”
4. Objective/Purpose:
  - a. “Today, we will convert our quadratic equation from the factored form to the standard form. We will multiply two binomials by using either the double distributing property or the box method and simplifying like terms to create our standard form of the quadratic. This is important so one can identify the values of  $a$ ,  $b$  and  $c$  of the quadratic and how the values affect the quadratic function. Let’s have fun with Math!”
5. Input
  - a. Task Analysis
    - i. Introduce the next section of the unit with notes on how to convert from factored form to standard form. Throughout the notes, the teacher will ask the students to display their **hand signals** to observe the class understanding of factoring.
      1. We will review the following two methods for factoring:
        - a. Double Distributive Property (FOIL)
        - b. Box Method
    - ii. We will hand out the “Multiplying Binomials” worksheet.
    - iii. The students will work on the worksheet for the rest of the class period within their groups and teach on another on how to multiply binomials. The students will say out loud to their partners the process to multiply binomials.
    - iv. Lastly, the students will each write **two questions** about multiplying binomials with the correct answers that could be used on their upcoming quiz.
  - b. Thinking Levels
    - i. Knowledge: Describe how to convert a quadratic function from factored form to standard form.
    - ii. Comprehension: Understand the process of factoring and constructing the quadratic equation in standard form
    - iii. Application: Use factoring to find the standard form of a quadratic.
    - iv. Synthesis: Create two questions on factoring that could be on their upcoming quiz and solve them.

- c. Learning Styles
    - i. Auditory- The students listen to the step process of how to factor from the teacher's demonstration. The students will also hear themselves stating the process to their table partner.
    - ii. Visual- The students will watch the teacher demonstrate how factor two linear functions (two binomials) in order to create a quadratic equation in factored form. Also, the students can use the box method to show how they multiplied the two binomials.
  - d. Methods and Materials
    - i. Ways of Presenting- Notes, Class demonstration on smart board or Elmo, and YouTube Videos
    - ii. Materials needed: "Multiplying Binomials" Worksheet, Calculators, Elmo, and white board
6. Modeling:
    - a. The teachers will demonstrate how to factor two binomials during their notes.
  7. Check for Understanding:
    - a. Checking for **hand signals** during lecture on the individual understanding of multiplying binomials.
    - b. What is the process for factoring?
    - c. Explain the difference between factored and standard form.
    - d. How confident are you with your answer?
    - e. Have the students demonstrate how to factor with another student in their group.
  8. Guided Practice:
    - a. The students will work on the "Multiplying Binomials" worksheet.
    - b. Teacher will circulate to help with difficulties.
  9. Independent Practice:
    - a. The students will continue to work on the "Multiplying Binomials" worksheet throughout the class. The students will go over the answers from the worksheet tomorrow.
  10. Closure
    - a. Have the students two create **two test questions**. The students need to turn in the questions with the answers before they leave.
    - b. Announce to the class they will have their quiz on Friday.