DAY 9: Practice, Factor Puzzle & Exam

Materials

Copies: 9.1 Factoring & Solving Unit Practice
                   9.2 Factor Puzzle
                   Final Unit Assessment

Supplies: Scissors (1 pair per group)
                   Glue Stick (1 per group)
                   Blank Paper (1 sheet per group)

Objective
Students will increase proficiency in factoring and solving quadratic expressions and equations by completing practice problems. Students will match up equivalent expressions on a factor puzzle by factoring and expanding expressions to fit pieces in the correct order.

Student Talk Strategy
Report to a Partner for 9.2

Academic Language Use
Area- The number of squares it takes to cover a rectangle. The teacher will introduce
      and model this by giving the students squares, representing area.
Dimensions- In this unit, the two numbers being multiplied, the factors, will be used to
      represent the dimensions, or the base and height of a rectangle. This term will be
      introduced and modeled by the teacher throughout.
Factors- In this unit, the two numbers being multiplied, the base and height of the
      rectangle, will be called factors. This will be modeled by the teacher throughout.
Product- In this unit, the answer to the multiplication problem, also the same as the area
      of the rectangle, will be referred to as the product. This will be modeled by the
      teacher throughout.
Greatest Common Factor- The largest monomial (integer and/or variable) that evenly
divides each term.
Roots- The x-intercepts (point where the graph crosses or touches the x-axis) of the
graph of a quadratic equation.
Zero Product Property- States that if the product of two factors is zero, at least one of
the factors must be zero.

Activity Notes
20 minutes: Factoring & Solving Unit Practice
Pass out activity sheet 9.1. Remind the students that today's practice will have some problems that only need to be factored and some that need to be solved. Put up the thinking map from Day 7 on the Elmo to help students remember the steps when factoring. Set the timer for 10 minutes for students to work independently while you circulate to ask guiding questions and assess progress. As students finish, have them

show you're their answers. If they have done the problems correctly, have them move onto the next activity, the factor puzzle. For students getting a few correct, but going slowly, allow them to continue to work alone or with a partner. For students who are really struggling, have them sit up front and have students come up to the Elmo to work out the problem for their peers, as you ask guiding questions and clarify. If there is a group still struggling after 20 minutes, have them continue with you instead of doing the factor puzzle.

Answer Key for 9.1:
1) C   2) B   3) A   4) D   5) A   6) C   7) C   8) A

20 minutes: Factor Puzzle (for those who have done well with the practice)
Pass out scissors, a glue stick (AFTER you have checked the completed puzzle) and a sheet of blank paper to each pair. Pass out activity sheet 9.2. Students may work in partners or alone (or even in a group of 3 if all students are sharing the work of expanding/factoring). Students will cut out the sixteen puzzle squares and reassemble them into a new square. Each side of a square that is in factored form will match with (be glued next to) its expanded form on another square. Encourage students to use generic rectangles to factor each problem to find its match. After a group member has factored or expanded one side of a square, have him/her use report to a partner to share their work.

After the students have reassembled the puzzle, they will glue the pieces to a new sheet of paper. Make sure that the puzzle is correct BEFORE they begin to glue.

The numbers on the puzzle are your reference only. The puzzle will not re-assemble in numerical order, but will remain a square.

Answer Key

1	7	10	9
15	4	5	8
12	11	16	14
6	13	2	3

20 minutes: End of Unit Assessment
Pass out the end of unit assessment.   Give students 20 minutes to complete the assessment.

Answer key to End of Unit Assessment:
1) A   2) C   3) B   4) D