

DAY 5: Generic Rectangles II

Materials

Copies: 5.1 Generic Rectangles II
5.2 Roll & Factor- GCF
Ticket out the Door Day 5

Supplies: 10-sided dice (1 per pair)

Objective

Students will use X problems and generic rectangles to factor trinomials where a is greater than 1. Students will practice looking for a greatest common factor.

Student Talk Strategy

Think-Pair-Share for opening of 5.1
Numbered Heads for 5.1

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.

Activity Notes

35 minutes: Generic Rectangles II

Pass out activity sheet 5.1. Direct the students' attention to the top of the page. Give them one minute to think about and record their ideas to the opening question: "What does it mean to find factors?" Have them use the sentence frame provided to record their answer or allow them to draw a picture to demonstrate their understanding. Go through the example problem as a class, using think-pair-share for each step by asking the question, giving 30 seconds to one minute to have students think, followed by 30 seconds to discuss and then call on students at random to answer. Note: 5.1 has all the same steps as 4.2 did, but the coefficient of a is now greater than one (for most problems), so you will want to make sure the students are correctly recording what ac is in the X problem and that they are factoring out the GCF to get their factored form. If a good portion of the class is struggling to produce correct answers for the example, go through #1 together as a class, following the same process. Once a good portion of the

class is following, set the timer for 10 minutes and have students work ALONE, trying to solve the problems. Circulate to assess and question students. When the timer goes off, put the students into groups of 4 and explain that they will have 10 minutes to work through the problems together and then you will use numbered heads to have students come share their work. At the end of this 10 minutes, have the groups number off from 1-4 and then randomly select a number from 1-4 and the person with that number from the group you pick come share their work. Continue for as many problems as the class was able to solve.

15 minutes: Roll & Factor- GCF

Put the students into groups of 2 and have each group get one 10-sided die and copies of activity sheet 5.2. Go over the rules as a class, allowing the students to read silently first. Then go through the example problem together. Once you finish the example, ask a few questions to make sure the students understand how to play. Potential questions are, "How do I know how many times to roll?" "What do I do if there is no common factor?" Allow the students to play for the remaining time, while you circulate to assess understanding and ask guiding questions. Note: not all problems will have a common factor and two problems will have a common factor containing an x .

5 minutes: Ticket out the Door

Pass out the Ticket out the Door and collect it as soon as each student finishes (so that you can discuss mistakes with students as they turn it in).