

Using the Area Model with Expressions (7G)

Topic: Distributive property

Learning goals

Apply properties of operations as strategies to factor and expand linear expressions with rational coefficients.

Sims

[Area Model Algebra](#)

Explore

1. Play with Area Model Algebra. What do you notice?

Explore Screen

Generating Cases

2. Build a rectangle that represents a multiplication problem that you don't know the answer to. Explore the relationship between the total area and the partial products.
3. Use the partition lines (arrows) to break up the rectangle to make the calculation easier.
4. What do you notice about the partial products and the answer to the multiplication problem you started out with?

Variable Screen

5. Play with Area Model Algebra – Variables screen. What do you notice?

Conjecture

6. Decide if the following conjecture is true or false. _____

Conjecture: $2(x + 3) = 2x + 3$

Justify

7. Justify your answer, using what you know about the properties of arithmetic or diagrams.

You can use the sim to make a diagram that helps you justify the conjecture.

8. Write 3 more expressions with a variable and parentheses, and then rewrite them without parentheses.