

Understanding Multiplication Using Dynamic Sketches of an Area Model Solution Guide

1. Create a rectangle with a fixed width of 3 and a height of your choice. What do you notice?

Depending on the rectangle that students build, they might notice the various colors used that represent ones, tenths, and hundredths. This will support student understanding of partial products as a way to calculate the area.

2. Represent the height of your rectangle using the variable y . Determine an expression that can be used to find the area of any rectangle with a width of 3.

$$3y$$

3. Change the value of y so that $y > 1$ and $y < 1$. How do these area models compare?

Students should notice that the whole is partitioned into tenths in either scenario, but when the number is greater than one there is more than one color used to represent the area.

4. How can you determine the area of a rectangle when the width and the height are both decimal numbers?

Students might use partial products to determine the area or they might count using the various colors on their model.