

Area Models: Fraction Products 3

Name: _____

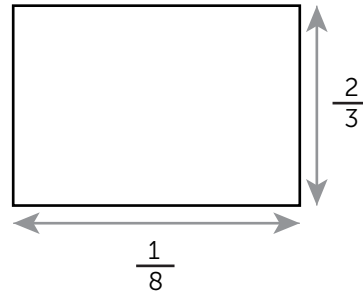
Date: _____

When multiplying a fraction by a fraction, it can be helpful to show the result using an area model. This can be done in four easy steps!

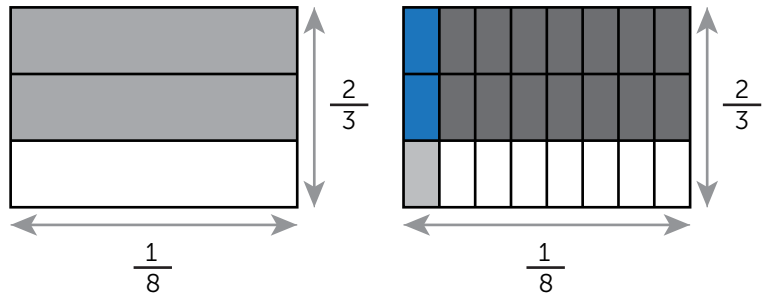
Consider $\frac{2}{3} \times \frac{1}{8}$

Step 1: Assign each factor to a rectangle

side: $\frac{2}{3}$ (vertical) \times $\frac{1}{8}$ (horizontal)

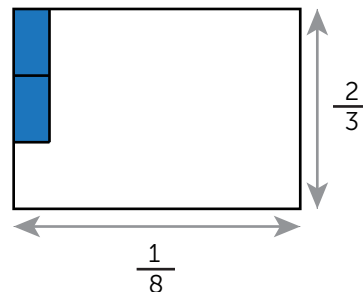


Step 2: Divide and shade the area model by each fraction value of length and width. Vertically the rectangle has two-thirds shaded and horizontally one eighth shaded.



Step 3: Isolate the overlapping fraction of the fraction:

(...in this case, it's $\frac{2}{3}$ of $\frac{1}{8}$)



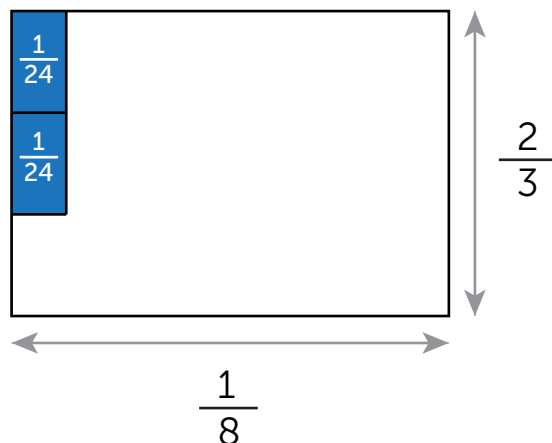
Step 4: Label the unit fractions: $\frac{2}{3} \times \frac{1}{8} = \frac{2}{24}$.

The product denominator reveals the total area is divided into 24 pieces,

Therefore, unit piece of the total area is $\frac{1}{24}$ or one twenty-fourths each.

(Which you can see in the area model,

$$\frac{1}{24} + \frac{1}{24} = \frac{2}{24}$$



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Step One Exercises

Directions: Sketch each expression by drawing a rectangle. Assign each factor to a side, (vertical x horizontal).

1. $\frac{2}{8} \times \frac{2}{5} =$

2. $\frac{3}{4} \times \frac{2}{3} =$

Step Two Exercises

Directions: Divide and shade the area model by each fraction value of length and width.

3. $\frac{2}{8} \times \frac{2}{5} =$

4. $\frac{3}{4} \times \frac{2}{3} =$

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Step Three Exercises

Directions: Isolate the overlapping fraction of the fractions for each expression's area model

$$\frac{2}{8} \times \frac{2}{5} =$$

$$\frac{3}{4} \times \frac{2}{3} =$$

Step Four Exercises

Directions: Label unit fractions for the product in the area model for each expression.

Hint: The product denominator reveals the total area is divided into _____ pieces.

7. $\frac{2}{8} \times \frac{2}{5} =$

8. $\frac{3}{4} \times \frac{2}{3} =$