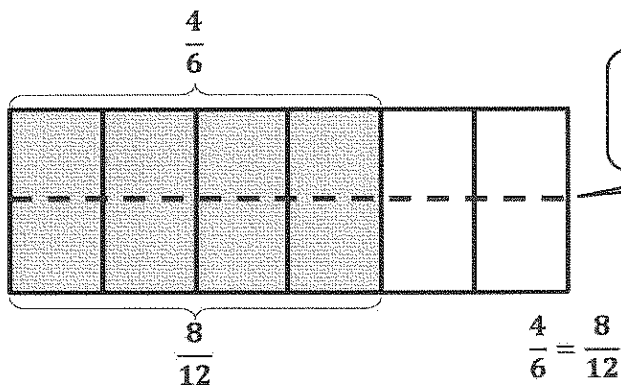


G4-M5-Lesson 6

1. The rectangle represents 1. Draw horizontal line(s) to decompose the rectangle into *twelfths*. Use the model to name the shaded area as a sum and as a product of unit fractions. Use parentheses to show the relationship between the number sentences.



4 sixths are shaded. I draw one line to partition sixths into twelfths. 8 twelfths are shaded.

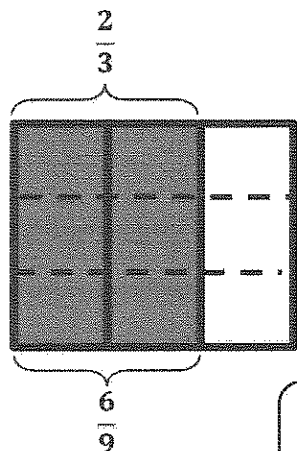
I write addition and multiplication sentences using unit fractions.

$$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \left(\frac{1}{12} + \frac{1}{12}\right) + \left(\frac{1}{12} + \frac{1}{12}\right) + \left(\frac{1}{12} + \frac{1}{12}\right) + \left(\frac{1}{12} + \frac{1}{12}\right) = \frac{8}{12}$$

$$\left(\frac{1}{12} + \frac{1}{12}\right) + \left(\frac{1}{12} + \frac{1}{12}\right) + \left(\frac{1}{12} + \frac{1}{12}\right) + \left(\frac{1}{12} + \frac{1}{12}\right) = \left(2 \times \frac{1}{12}\right) + \left(2 \times \frac{1}{12}\right) + \left(2 \times \frac{1}{12}\right) + \left(2 \times \frac{1}{12}\right) = \frac{8}{12}$$

$$\frac{4}{6} = 8 \times \frac{1}{12} = \frac{8}{12}$$

2. Draw an area model to show the decompositions represented by $\frac{2}{3} = \frac{6}{9}$. Express $\frac{2}{3} = \frac{6}{9}$ as a sum and product of unit fractions. Use parentheses to show the relationship between the number sentences.



I draw thirds vertically and partition the thirds into ninths with two horizontal lines.

$$\frac{2}{3} = \frac{6}{9}$$

$$\frac{1}{3} + \frac{1}{3} = \left(\frac{1}{9} + \frac{1}{9} + \frac{1}{9}\right) + \left(\frac{1}{9} + \frac{1}{9} + \frac{1}{9}\right) = \frac{6}{9}$$

$$\left(\frac{1}{9} + \frac{1}{9} + \frac{1}{9}\right) + \left(\frac{1}{9} + \frac{1}{9} + \frac{1}{9}\right) = \left(3 \times \frac{1}{9}\right) + \left(3 \times \frac{1}{9}\right) = \frac{6}{9}$$

I write parentheses that show the decomposition of $\frac{1}{3}$. Just as the area model shows 1 third partitioned into 3 ninths, so do the parentheses.