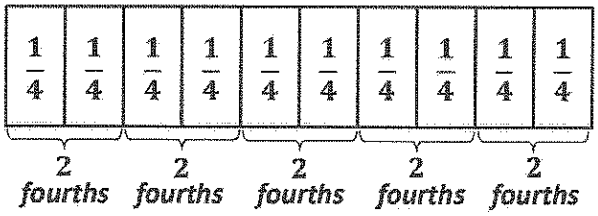
G4-M5-Lesson 35

1. Draw and label a tape diagram to show the following is true:

   10 fourths = 5 × (2 fourths) = (5 × 2) fourths

I can move the parentheses in the equation, associating the factors, 5 and 2. When I do so, fourths becomes the unit.



I can do this with any unit:
10 bananas = 5 × (2 bananas) = (5 × 2) bananas.

Using brackets to group every 2 units of $\frac{1}{4}$, I model 5 copies of 2 fourths.

The product of 5 and 2 is 10. My model shows that (5 × 2) fourths is the same as 5 × (2 fourths), or 10 fourths.

2. Write the equation in unit form to solve.

   $8 \times \frac{2}{3} = \frac{16}{3}$

   8×2 *thirds* $= 16$ *thirds*

Unit form simplifies my multiplication. Instead of puzzling over how to multiply a fraction by a whole number, I unveil an easy fact I can solve fast! I know 8 × 2 is 16, so 8 × 2 thirds is 16 thirds.

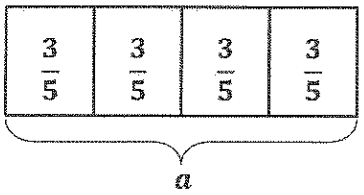
3. Solve.

   $6 \times \frac{3}{4}$

   $6 \times \frac{3}{4} = \frac{6 \times 3}{4} = \frac{18}{4}$

The unit is fourths! I think in unit form, 6 × 3 fourths is 18 fourths.

4. Ms. Swanson bought some apple juice. Each member of her family drank $\frac{3}{5}$ cup for breakfast. Including Ms. Swanson, there are four people in her family. How many cups of apple juice did they drink?



$$a = 4 \times \frac{3}{5}$$

$$= \frac{4 \times 3}{5}$$

$$= \frac{12}{5}$$

$$a = 2\frac{2}{5}$$

Ms. Swanson and her family drank $2\frac{2}{5}$ cups of apple juice.