G5-M4-Lesson 14

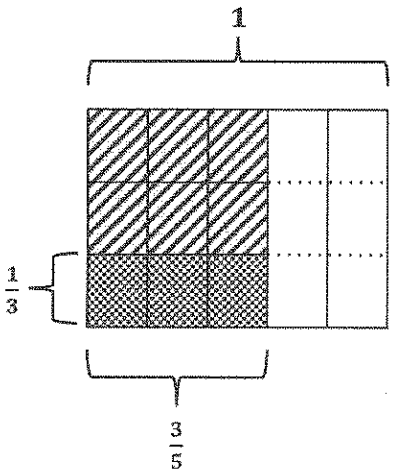
1. Solve. Draw a rectangular fraction model to explain your thinking.

   a. $\frac{1}{3}$ of $\frac{3}{5} = \frac{1}{3}$ of __3__ fifths = __1__ fifth

$\frac{1}{3}$ of 3 is 1.

$\frac{1}{3}$ of 3 bananas is 1 banana.

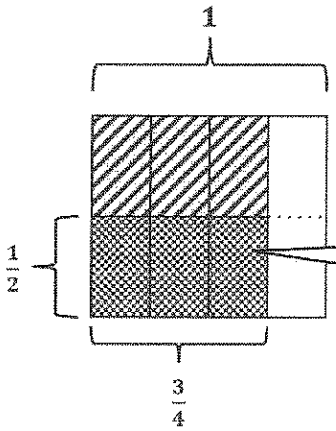
$\frac{1}{3}$ of 3 fifths is 1 fifth.



$\frac{1}{3} \times \frac{3}{5} = \frac{3}{15} = \frac{1}{5}$

I can model $\frac{3}{5}$ by partitioning vertically first. Then to show $\frac{1}{3}$ of $\frac{3}{5}$, I can partition with horizontal lines.

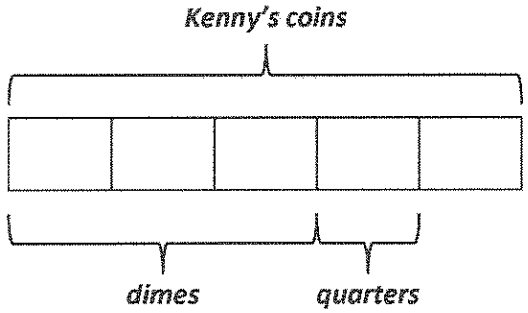
   b. $\frac{1}{2} \times \frac{3}{4}$



$\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$

My model shows me that $\frac{1}{2}$ of $\frac{3}{4}$ is $\frac{3}{8}$. The part here that is double-shaded shows the product, 3 eighths.

2. Kenny collects coins. $\frac{3}{5}$ of his collection is dimes. $\frac{1}{2}$ of the remaining coins are quarters. What fraction of Kenny's whole collection is quarters? Support your answer with a model.



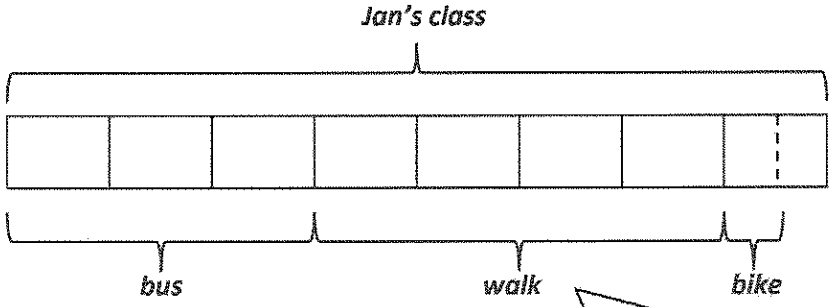
Since $\frac{3}{5}$ of Kenny's collection is dimes, then $\frac{2}{5}$ of the collection is not dimes. 1 half of that $\frac{2}{5}$ is quarters. $\frac{1}{2}$ of $\frac{2}{5}$ is $\frac{1}{5}$.

$$\frac{1}{2} \times \frac{2}{5} = \frac{2}{10} = \frac{1}{5}$$

One fifth of Kenny's coin collection is quarters.

3. In Jan's class, $\frac{3}{8}$ of the students take the bus to school. $\frac{4}{5}$ of the non-bus riders walk to school. One half of the remaining students ride their bikes to school.

a. What fraction of all the students walk to school?



$\frac{4}{5}$ *of* 5 *eighths* = 4 *eighths*

$$\frac{4}{5} \times \frac{5}{8} = \frac{20}{40} = \frac{1}{2}$$

$\frac{1}{2}$ *of all the students walk to school.*

I can divide the whole class into 8 equal units to show that $\frac{3}{8}$ of the students take the bus to school.

Since $\frac{3}{8}$ ride the bus to school, then $\frac{5}{8}$ do not ride the bus. $\frac{4}{5}$ of $\frac{5}{8}$ is $\frac{4}{8}$.

b. What fraction of all the students ride their bikes to school?

$$\frac{1}{2} \text{ of } \frac{1}{8} = \frac{1}{16}$$

$\frac{1}{16}$ *of all the students bike to school.*

After labeling the units that represent the students that walk or bus to school, there was only 1 unit, or $\frac{1}{8}$ of the class, remaining. Half of those students bike to school.