Show You Know

Determine each product using paper folding.

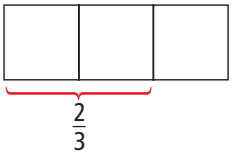
a) $\frac{1}{4} \times \frac{1}{2}$ **b)** $\frac{2}{3} \times \frac{2}{3}$

Example 2: Multiply Using Diagrams

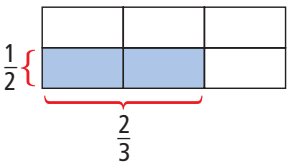
Determine $\frac{2}{3} \times \frac{1}{2}$.

Solution

Draw a rectangle. Draw line segments to cut its length into thirds.



Draw a line segment to cut the width of the rectangle into halves.



The diagram is like the result of paper folding.

$\frac{2}{3} \times \frac{1}{2} = \frac{2}{6}$

Write $\frac{2}{6}$ in lowest terms.

$\frac{2}{6} = \frac{1}{3}$

So, $\frac{2}{3} \times \frac{1}{2} = \frac{1}{3}$.

Literacy Link

Understanding Common Denominators

For $\frac{1}{2}$ and $\frac{2}{3}$, a common denominator is 6, which is a common multiple of 2 and 3.

ME

The product of two proper fractions is less than either of the fractions. You can check this relationship using common denominators.

$\frac{2}{3} = \frac{4}{6}$ $\frac{1}{2} = \frac{3}{6}$

$\frac{2}{6} < \frac{4}{6}$ $\frac{2}{6} < \frac{3}{6}$

Show You Know

Determine each product using diagrams.

a) $\frac{1}{2} \times \frac{1}{2}$ **b)** $\frac{1}{3} \times \frac{3}{4}$