Each rectangle represents 1.

1. The shaded fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.

   a. \( \frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6} \)

   b. \( \frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12} \)

   c. \( \frac{4}{5} = \frac{4 \times 2}{5 \times 2} = \frac{8}{10} \)

   d. \( \frac{5}{6} = \frac{5 \times 2}{6 \times 2} = \frac{10}{12} \)

2. Decompose the shaded fractions into smaller units, as given below. Express the equivalent fractions in a number sentence using multiplication.

   a. Decompose into tenths.

   \( \frac{3}{5} = \frac{3 \times 2}{5 \times 2} = \frac{6}{10} \)

   b. Decompose into fifteenths.

   \( \frac{3}{5} = \frac{3 \times 3}{5 \times 3} = \frac{9}{15} \)
3. Draw area models to prove that the following number sentences are true.

a. \( \frac{2}{5} = \frac{4}{10} \)

b. \( \frac{2}{3} = \frac{8}{12} \)

c. \( \frac{3}{6} = \frac{5}{12} \)

d. \( \frac{4}{6} = \frac{8}{12} \)

4. Use multiplication to find an equivalent fraction for each fraction below. Answers may vary.

a. \( \frac{3}{4} = \frac{3 \times 2}{4 \times 2} = \frac{6}{8} \)

b. \( \frac{4}{5} = \frac{4 \times 3}{5 \times 3} = \frac{12}{15} \)

c. \( \frac{7}{6} = \frac{7 \times 2}{6 \times 2} = \frac{14}{12} \)

d. \( \frac{12}{7} = \frac{12 \times 2}{7 \times 2} = \frac{24}{14} \)

5. Determine which of the following are true number sentences. Correct those that are false by changing the right-hand side of the number sentence.

a. \( \frac{4}{3} = \frac{4 \times 2}{3 \times 2} = \frac{8}{6} \)

\[ \text{False} \]

b. \( \frac{5}{4} = \frac{5 \times 2}{4 \times 2} = \frac{10}{8} \)

\[ \text{True} \]

c. \( \frac{4}{5} = \frac{4 \times 3}{5 \times 3} = \frac{12}{15} \)

\[ \text{False} \]

d. \( \frac{4}{6} = \frac{4 \times 3}{6 \times 3} = \frac{12}{18} \)

\[ \text{True} \]

Lesson 8: Use the area model and multiplication to show the equivalence of two fractions.