Mrs. Faour/4th Grade Module 5-Lesson 5

Objective: Decompose unit fractions using area models to show equivalence.

Lesson 5 Requirements:

Problem –Set page/Watch Video

Fluency Practice /Watch Video

Application Problem/Watch Video

Review Class Note/use your math notebook

Homework page/Submit

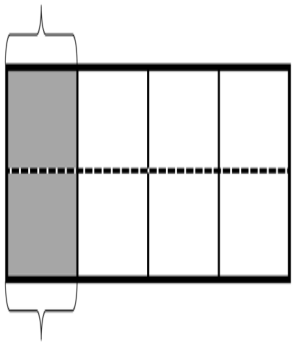
Exit Ticket page/Submit

***Use paper /pencil or problem-set pages to follow with the presenter.**

Name _____ Date _____

1. Draw horizontal lines to decompose each rectangle into the number of rows as indicated. Use the model to give the shaded area as both a sum of unit fractions and as a multiplication sentence.

   a. 2 rows

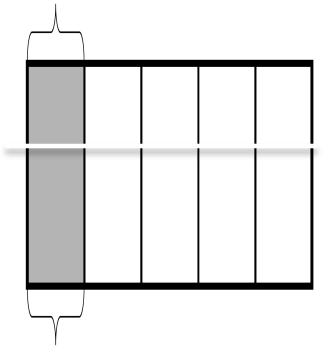


$$\frac{1}{4} = \frac{2}{\square}$$

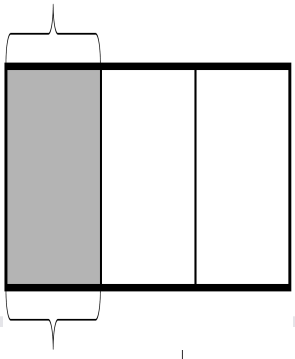
$$\frac{1}{4} = \frac{1}{8} + \frac{\square}{\square} = \frac{\square}{\square}$$

$$\frac{1}{4} = 2 \times \frac{\square}{\square} = \frac{\square}{\square}$$

   b. 2 rows



   c. 4 rows



2. Draw area models to show the decompositions represented by the number sentences below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

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

b. $\frac{1}{2} = \frac{4}{8}$

c. $\frac{1}{2} = \frac{5}{10}$

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

e. $\frac{1}{3} = \frac{4}{12}$

f. $\frac{1}{4} = \frac{3}{12}$

3. Explain why $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ is the same as $\frac{1}{4}$.

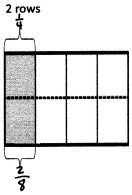
Problem-Set/Answer key

NYS COMMON CORE MATHEMATICS CURRICULUM **Lesson 5 Problem Set** 4•5

Name Jack Date _____

1. Draw horizontal lines to decompose each rectangle into the number of rows as indicated. Use the model to give the shaded area as both a sum of unit fractions and as a multiplication sentence.

a. 2 rows

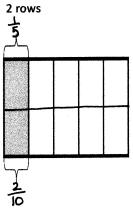


$\frac{1}{4} = \frac{2}{8}$

$\frac{1}{4} = \frac{1}{8} + \frac{1}{8} = \frac{2}{8}$

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

b. 2 rows

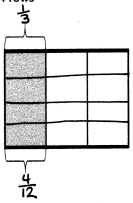


$\frac{1}{5} = \frac{2}{10}$

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

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

c. 4 rows



$\frac{1}{3} = \frac{4}{12}$

$\frac{1}{3} = \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \frac{4}{12}$

$\frac{1}{3} = 4 \times \frac{1}{12} = \frac{4}{12}$

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 5 Problem Set 4•5

2. Draw area models to show the decompositions represented by the number sentences below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

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

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

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

b. $\frac{1}{2} = \frac{4}{8}$

$\frac{1}{2} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{4}{8}$

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

c. $\frac{1}{2} = \frac{5}{10}$

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

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

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

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

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

e. $\frac{1}{3} = \frac{4}{12}$

$\frac{1}{3} = \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \frac{4}{12}$

$\frac{1}{3} = 4 \times \frac{1}{12} = \frac{4}{12}$

f. $\frac{1}{4} = \frac{3}{12}$

$\frac{1}{4} = \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \frac{3}{12}$

$\frac{1}{4} = 3 \times \frac{1}{12} = \frac{3}{12}$

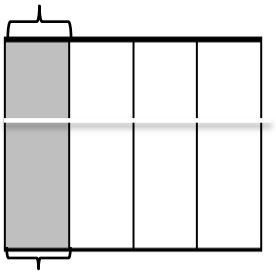
3. Explain why $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ is the same as $\frac{1}{4}$.

In the area model, the area of three-twelfths ($\frac{1}{12}+\frac{1}{12}+\frac{1}{12}$) equals the area of $\frac{1}{4}$ of the model so the fractions are equal.

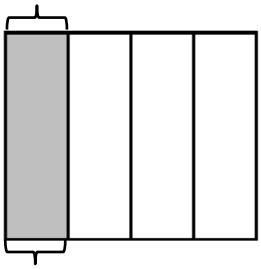
Name _____ Date _____

1. Draw horizontal lines to decompose each rectangle into the number of rows as indicated. Use the model to give the shaded area as both a sum of unit fractions and as a multiplication sentence.

   a. 2 rows



   b. 3 rows



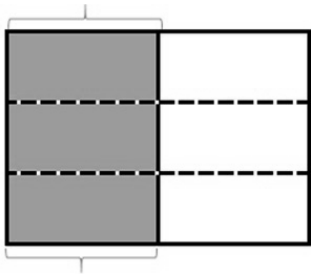
2. Draw an area model to show the decomposition represented by the number sentence below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

$$\frac{3}{5} = \frac{6}{10}$$

Name _____ Date _____

1. Draw horizontal lines to decompose each rectangle into the number of rows as indicated. Use the model to give the shaded area as both a sum of unit fractions and as a multiplication sentence.

   a. 3 rows

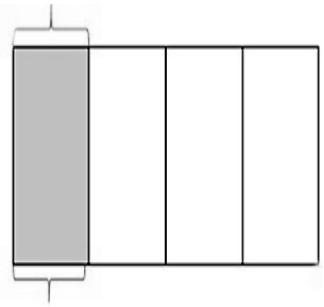


$$\frac{1}{2} = \frac{3}{\square}$$

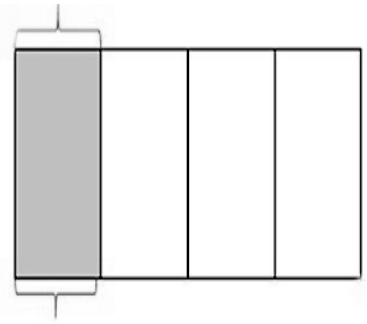
$$\frac{1}{2} = \frac{1}{6} + \frac{\square}{\square} + \frac{\square}{\square} = \frac{3}{6}$$

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

   b. 2 rows



   c. 4 rows



2. Draw area models to show the decompositions represented by the number sentences below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

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

   b. $\frac{1}{3} = \frac{3}{9}$

   c. $\frac{1}{3} = \frac{4}{12}$

   d. $\frac{1}{3} = \frac{5}{15}$

   e. $\frac{1}{5} = \frac{2}{10}$

   f. $\frac{1}{5} = \frac{3}{15}$

3. Explain why $\frac{1}{12}+\frac{1}{12}+\frac{1}{12}+\frac{1}{12}$ is the same as $\frac{1}{3}$.