

# Eureka Math

## 4th Grade Module 5 Lesson 7

At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this project!

Directions for customizing presentations are available on the next slide.



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# Customize this Slideshow

## Reflecting your Teaching Style and Learning Needs of Your Students

- When the Google Slides presentation is opened, it will look like Screen A.
- Click on the “pop-out” button in the upper right hand corner to change the view.
- The view now looks like Screen B.
- Within Google Slides (not Chrome), choose FILE.
- Choose MAKE A COPY and rename your presentation.
- Google Slides will open your renamed presentation.
- It is now editable & housed in MY DRIVE.

The image displays two screenshots of a Google Slides presentation. The left screenshot, labeled "Screen A", shows a slide with the text "ReadyGEN™ in Action" and "3<sup>rd</sup> Grade Unit 3, Module A Lesson 1". The right screenshot, labeled "Screen B", shows the same slide but with the Google Slides interface overlaid. A red box highlights the "pop-out" button in the top right corner of the browser window. A red arrow points to this button with the text "pop-out". Another red box highlights the "File" menu, and a third red box highlights the "Make a copy..." option. A "Copy document" dialog box is open, showing the "Enter a new document name:" field with the text "Rename Your Presentation".

**Screen A**

ReadyGEN™ in Action

3<sup>rd</sup> Grade  
Unit 3, Module A  
Lesson 1

**Screen B**

Gr3(2) U3MAL1 Sample Lesson.pptx

File Edit View Insert Slide Format Arrange Tools Table Help Last edit was yesterday at

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Comments will not be copied to the new document.

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ReadyGEN™ in Action

3<sup>rd</sup> Grade  
Unit 3, Module A  
Lesson 1

# Icons



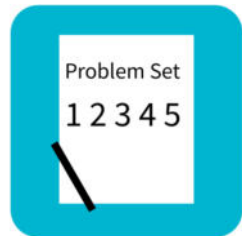
Read, Draw, Write



Learning Target



Personal White Board



Problem Set



Manipulatives Needed



Fluency



Think Pair Share



Whole Class



Individual



Partner



Small Group



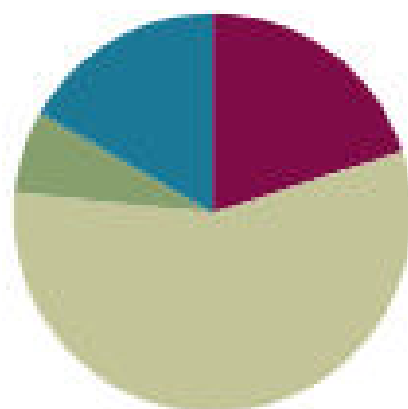
Small Group Time

## Lesson 7

**Objective:** Use the area model and multiplication to show the equivalence of two fractions.

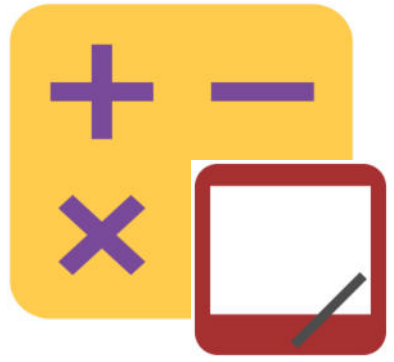
### Suggested Lesson Structure

■ Fluency Practice	(12 minutes)
■ Application Problem	(4 minutes)
■ Concept Development	(34 minutes)
■ Student Debrief	(10 minutes)
<b>Total Time</b>	<b>(60 minutes)</b>





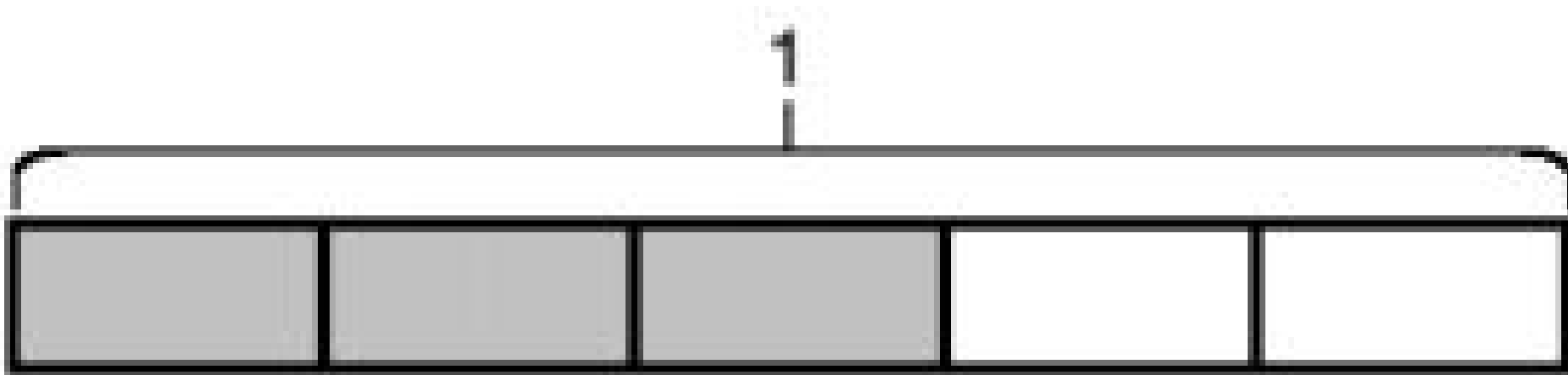
**I can use the  
area model and multiplication  
to show the equivalence  
of two fractions.**

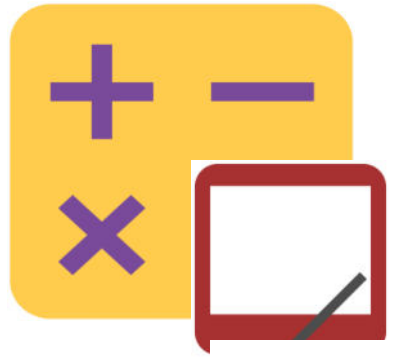


# Fluency Practice

Break Apart Fractions

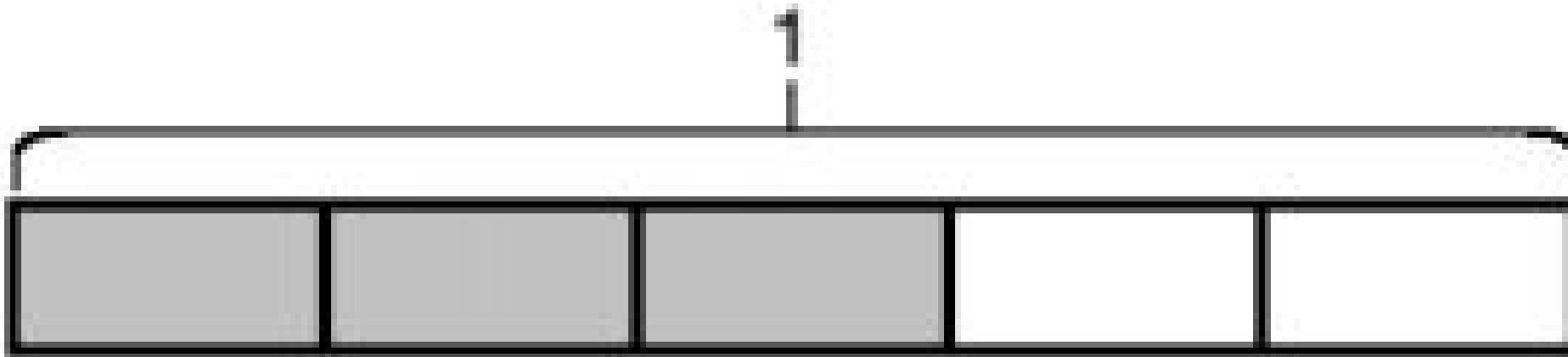
**Name the fraction**





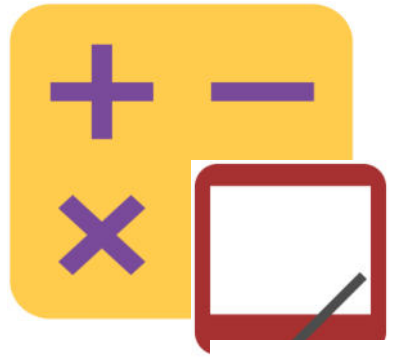
# Fluency Practice

Break Apart Fractions



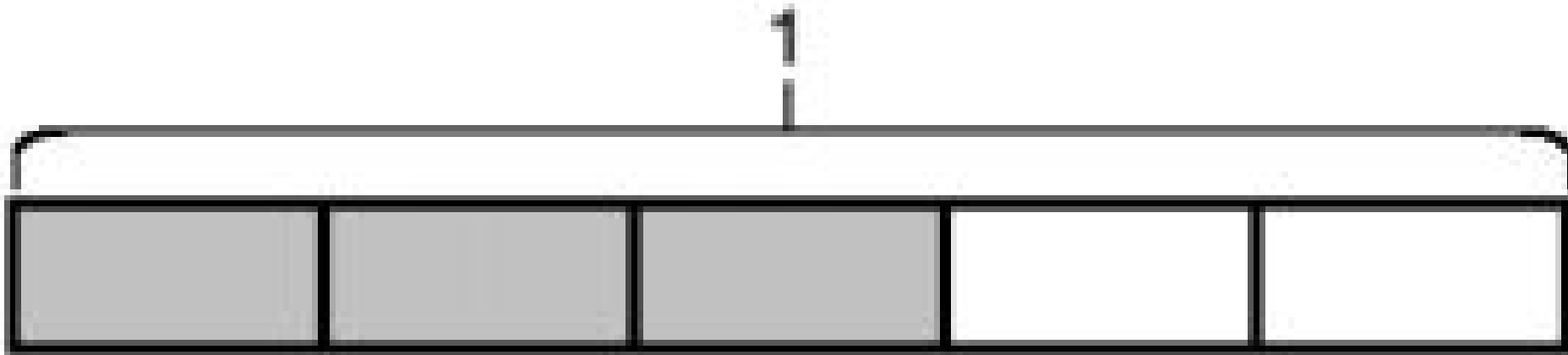
**Say the fraction**

**On your personal white board, write 3 fifths as a repeated addition sentence using unit fractions.**



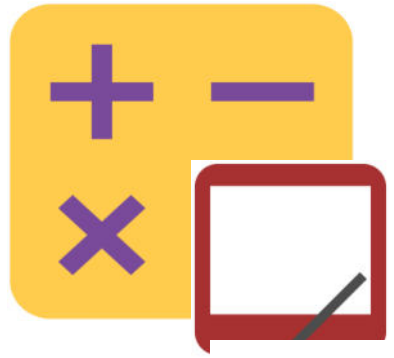
# Fluency Practice

Break Apart Fractions



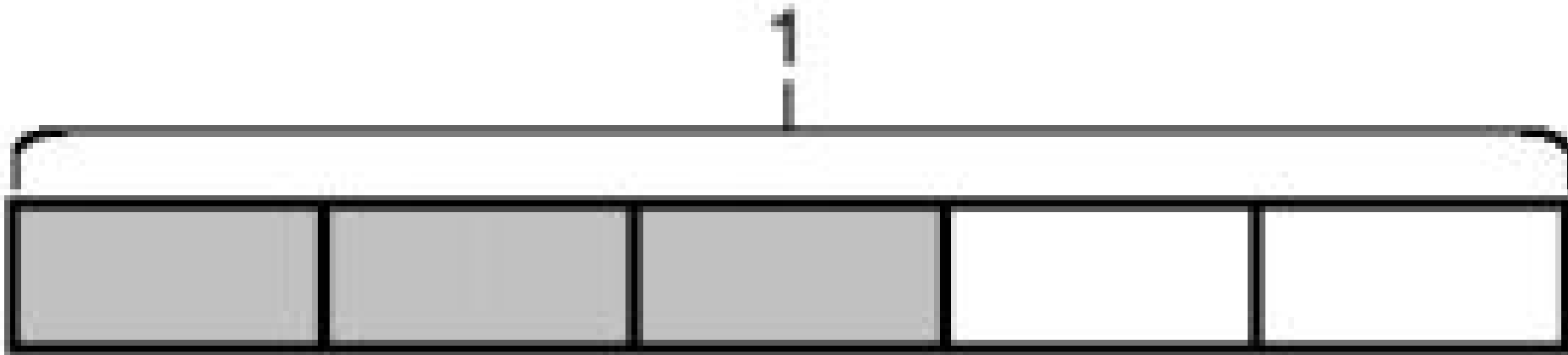
$$\frac{3}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{3}{5}$$



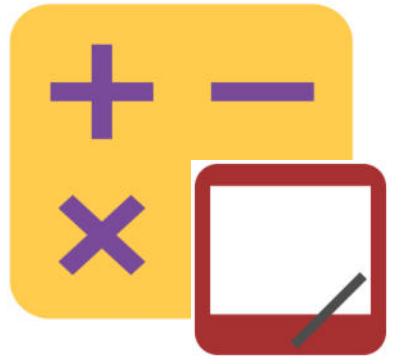


# Fluency Practice

Break Apart Fractions



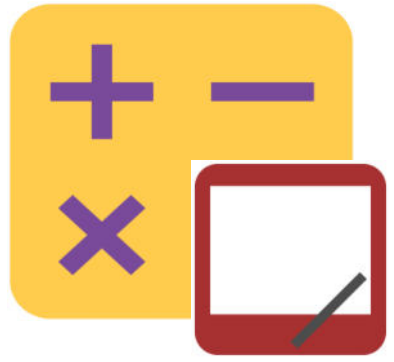
$$\frac{9}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{9}{5}$$



# Fluency Practice

## Break Apart Fractions

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

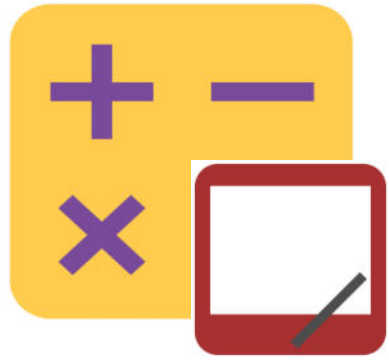


# Fluency Practice

## Break Apart Fractions

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

$$\frac{5}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} =$$



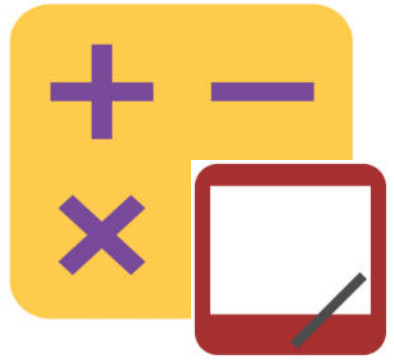
# Fluency Practice

## Break Apart Fractions

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

$$\frac{5}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} =$$

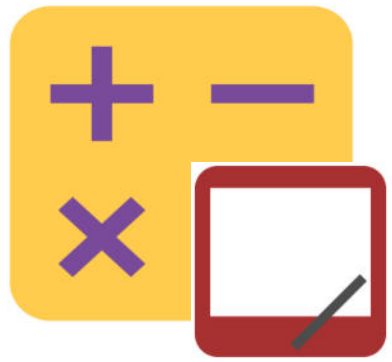
$$\frac{5}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = 5 \times \frac{1}{6}$$



# Fluency Practice

Count by Equivalent Fractions

**Count from 0 to 10 by ones.**



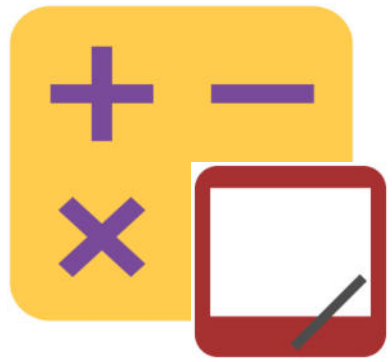
# Fluency Practice

Count by Equivalent Fractions

**Count by 1 fourths to 10 fourths. Start at 0 fourths.**

$\frac{0}{4}$	$\frac{1}{4}$	$\frac{2}{4}$	$\frac{3}{4}$	$\frac{4}{4}$	$\frac{5}{4}$	$\frac{6}{4}$	$\frac{7}{4}$	$\frac{8}{4}$	$\frac{9}{4}$	$\frac{10}{4}$
0	$\frac{1}{4}$	$\frac{2}{4}$	$\frac{3}{4}$	1	$\frac{5}{4}$	$\frac{6}{4}$	$\frac{7}{4}$	2	$\frac{9}{4}$	$\frac{10}{4}$

**4 fourths is the same as 1 of what unit**



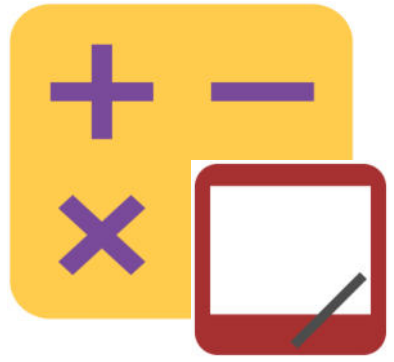
# Fluency Practice

Count by Equivalent Fractions

**Count by 1 fourths to 10 fourths. Start at 0 fourths.**

$\frac{0}{4}$	$\frac{1}{4}$	$\frac{2}{4}$	$\frac{3}{4}$	$\frac{4}{4}$	$\frac{5}{4}$	$\frac{6}{4}$	$\frac{7}{4}$	$\frac{8}{4}$	$\frac{9}{4}$	$\frac{10}{4}$
0	$\frac{1}{4}$	$\frac{2}{4}$	$\frac{3}{4}$	1	$\frac{5}{4}$	$\frac{6}{4}$	$\frac{7}{4}$	2	$\frac{9}{4}$	$\frac{10}{4}$

**Let's count to 10 fourths again, but this time, say the whole numbers when you come to a whole number.**

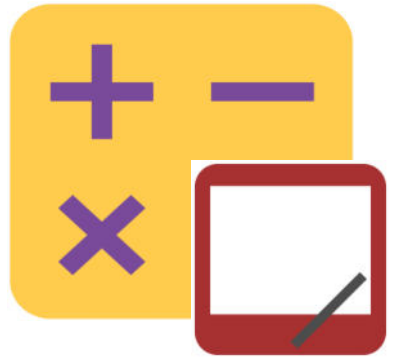


# Fluency Practice

Count by Equivalent Fractions

***Repeat this process with thirds***

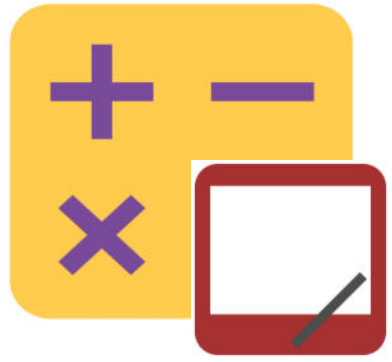




# Fluency Practice

Draw Equivalent Fractions

**Say the fraction  $\frac{2}{3}$**

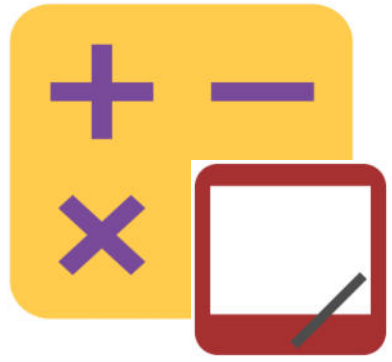


# Fluency Practice

Draw Equivalent Fractions

**Say the fraction  $\frac{2}{3}$**

**Two-thirds**



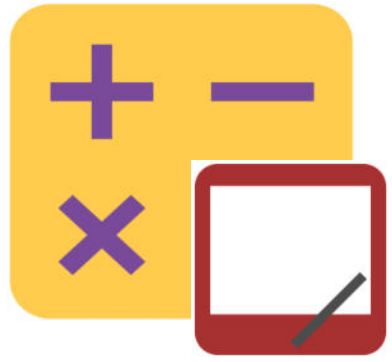
# Fluency Practice

Draw Equivalent Fractions

**Say the fraction  $\frac{2}{3}$**

**Two-thirds**

**Draw an area model to show  $\frac{2}{3}$**



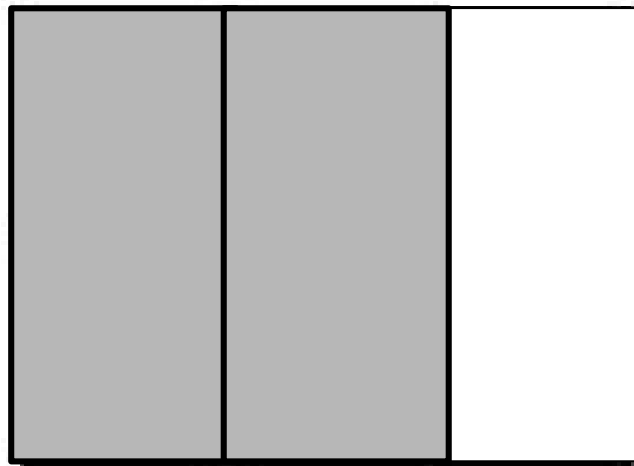
# Fluency Practice

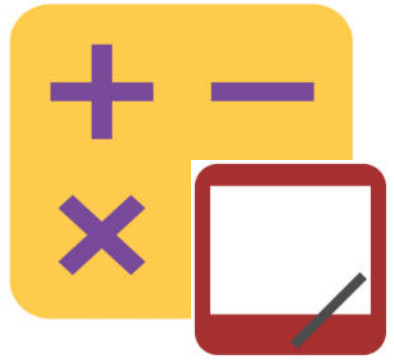
Draw Equivalent Fractions

**Say the fraction  $\frac{2}{3}$**

**Two-thirds**

**Draw an area model to show  $\frac{2}{3}$**

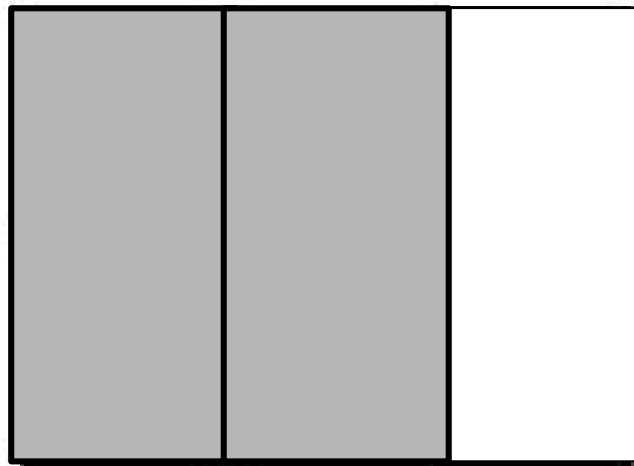


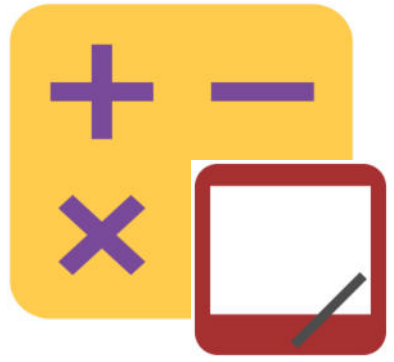


# Fluency Practice

Draw Equivalent Fractions

**Draw a dotted horizontal line to find the equivalent fraction.**

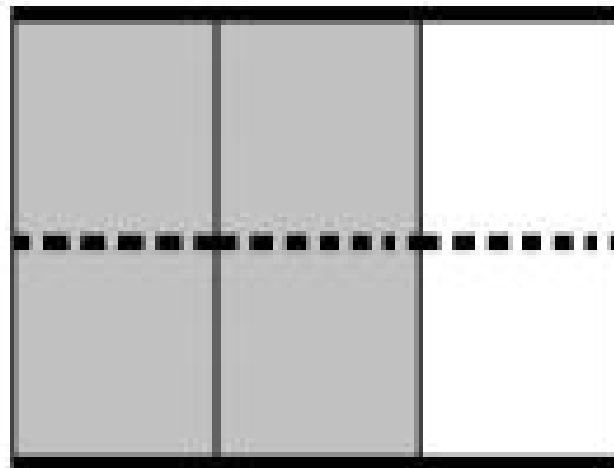


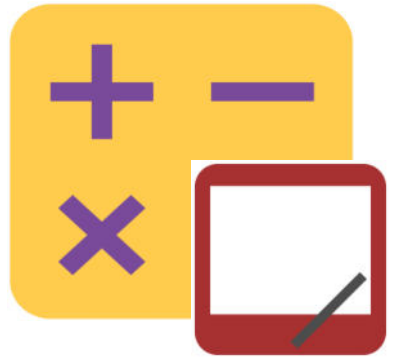


# Fluency Practice

Draw Equivalent Fractions

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





# Fluency Practice

Draw Equivalent Fractions

**Continue this process with the following fractions.**

$$\frac{2}{3} = \frac{6}{9} = \frac{4}{6} = \frac{2}{3} = \frac{4}{6} \text{, and } \frac{4}{5} = \frac{12}{15}$$

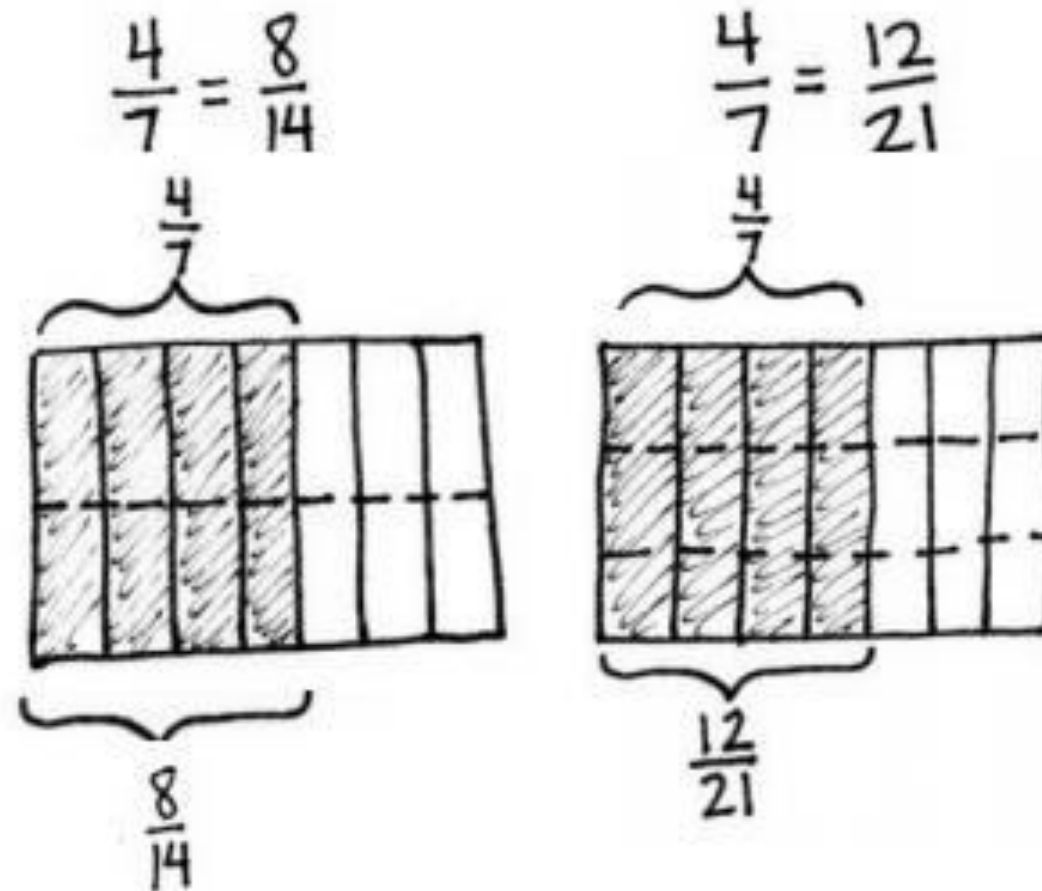
# Application Problem

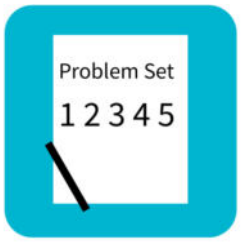
**Model an equivalent fraction for  $\frac{4}{7}$  using an area model.**



# Application Problem

**Model an equivalent fraction for 4 sevenths using an area model.**



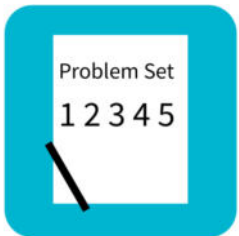


# Concept Development

## Materials



**(S) Personal White board**



# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

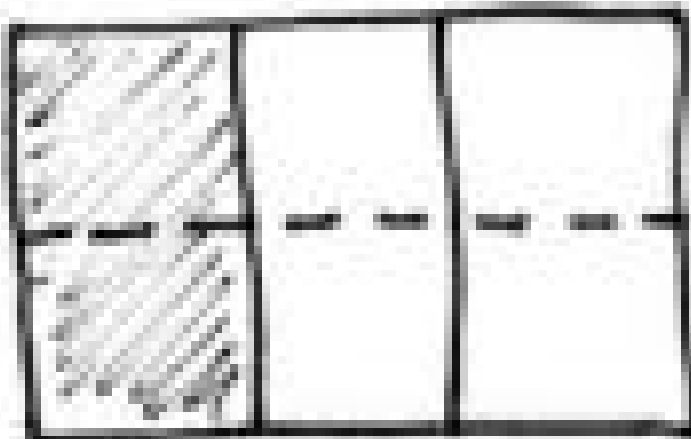
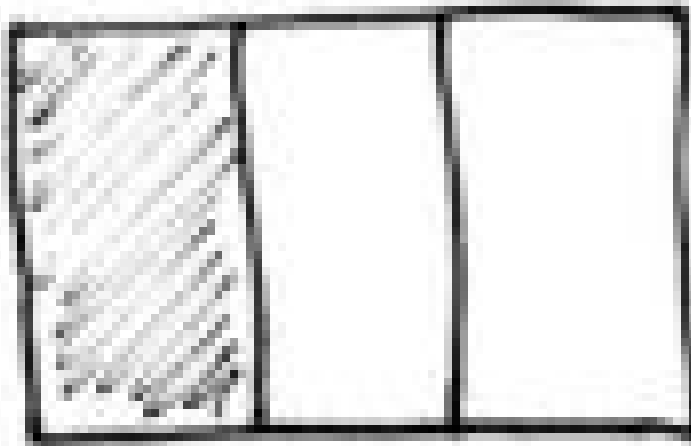
**Draw an area model representing 1 whole partitioned into thirds.**

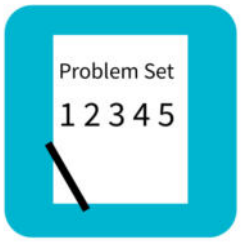
**Shade and record  $\frac{1}{3}$  below the area model.**

**Draw 1 horizontal line across the area model.**

# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.





# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

**What happened to the size of the fractional units?**

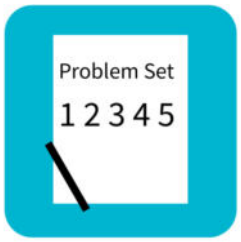
**What happened to the number of units in the whole?**

**What happened to the number of selected units when we drew the dotted line?**

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

**They are *equivalent fractions*.**

**Why didn't doubling the number of selected units make the fraction larger?**

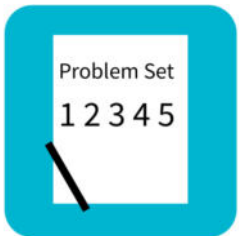


# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

**Draw an area model representing 1 whole partitioned with a vertical line into 2 halves.**

**Shade and record  $\frac{1}{2}$  below the area model.**



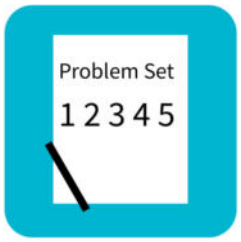
# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

**Draw an area model representing 1 whole partitioned with a vertical line into 2 halves.**

**Shade and record  $\frac{1}{2}$  below the area model.**

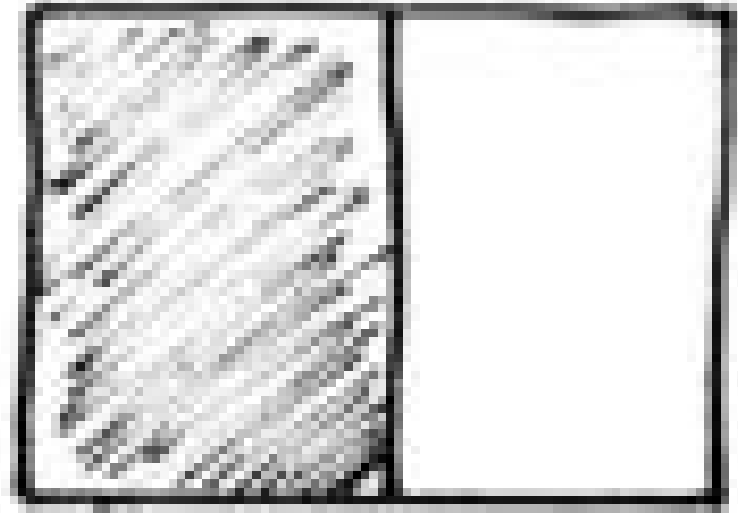
**If we want to rewrite  $\frac{1}{2}$  using 4 times as many units, what should we do?**



# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

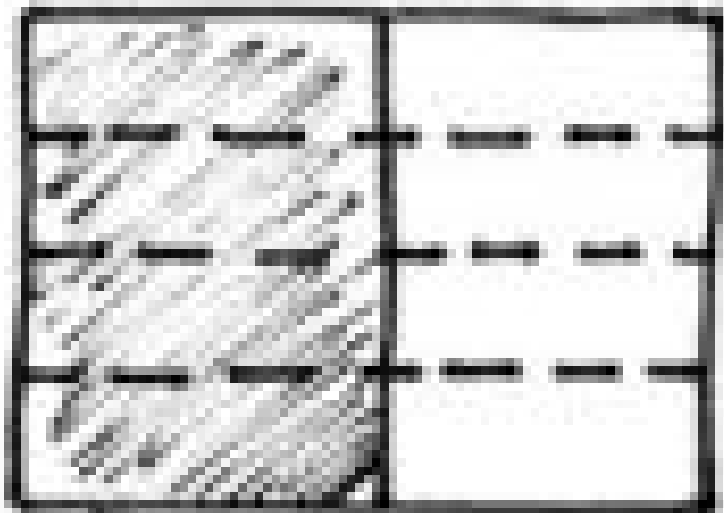
$\frac{1}{2}$



**What happened to the number of units in the whole?**



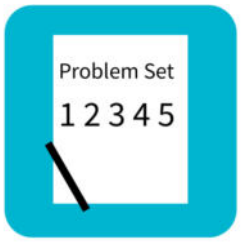
$\frac{4}{8}$



**What happened to the number of units selected?**

**Has the size changed??**

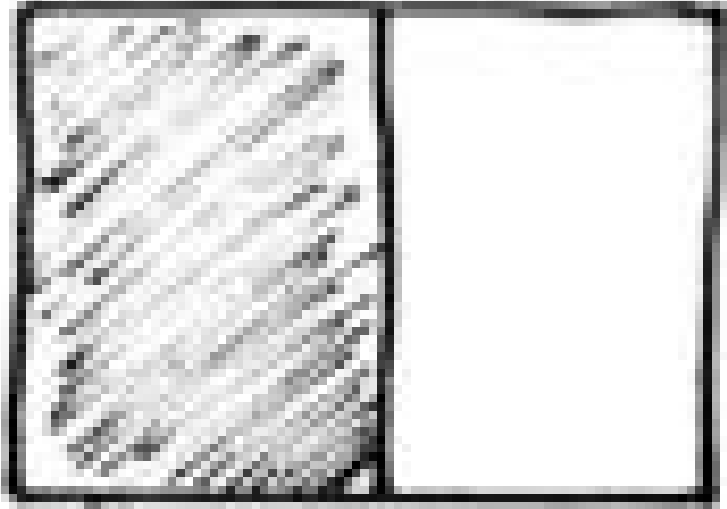




# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

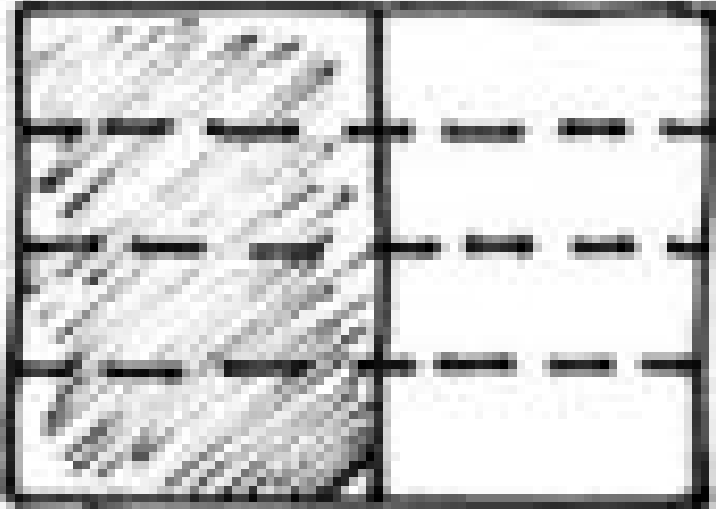
$\frac{1}{2}$

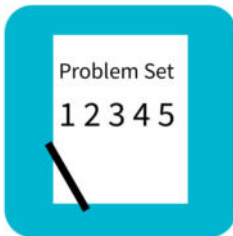


**What can you conclude about  $\frac{1}{2}$  and  $\frac{4}{8}$ ?**



$\frac{4}{8}$

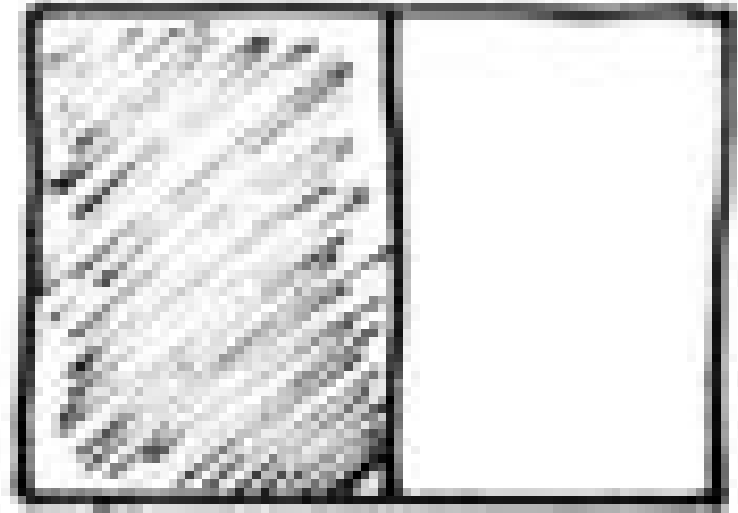




# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

$\frac{1}{2}$

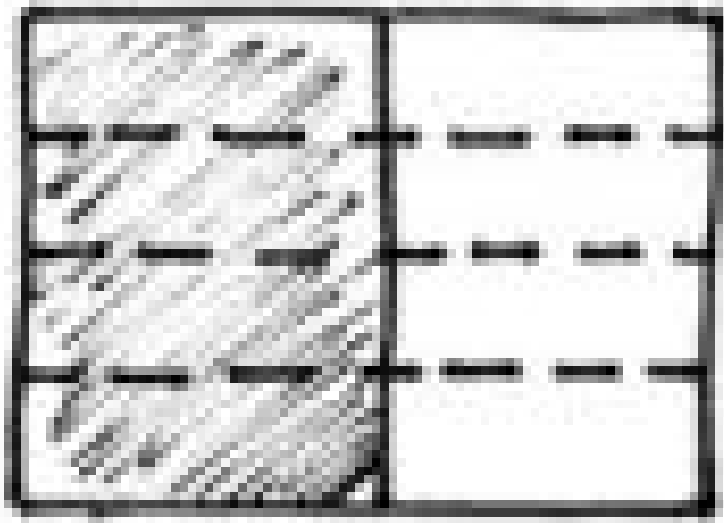


What can you conclude about  $\frac{1}{2}$  and  $\frac{4}{8}$ ?

They are **EQUIVALENT!**



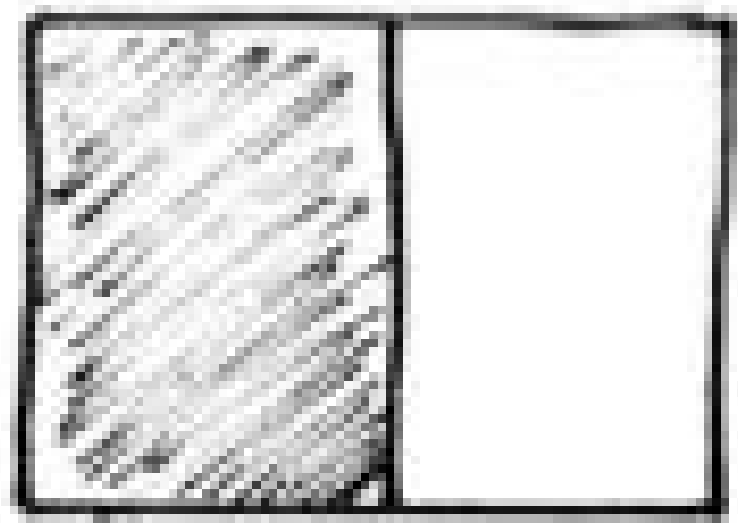
$\frac{4}{8}$



# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

$\frac{1}{2}$

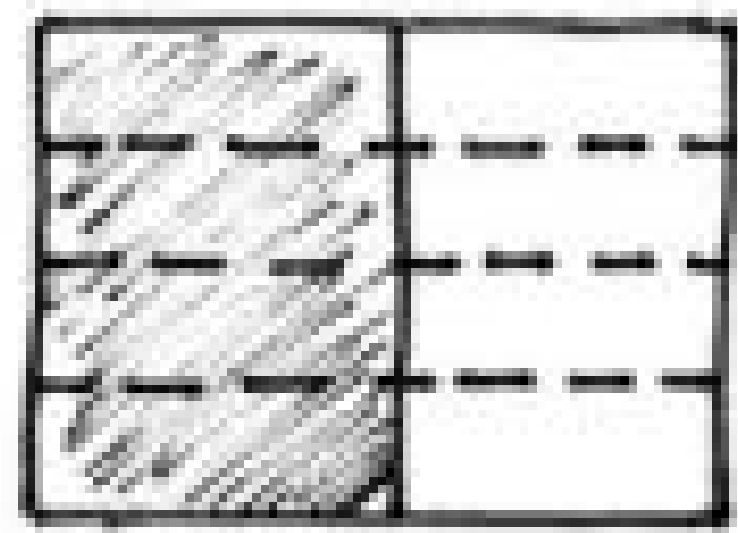


What can you conclude about  $\frac{1}{2}$  and  $\frac{4}{8}$ ?

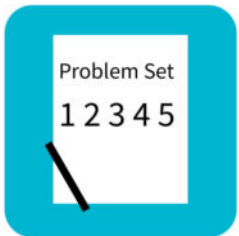
They are **EQUIVALENT!**



$\frac{4}{8}$



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



# Concept Development

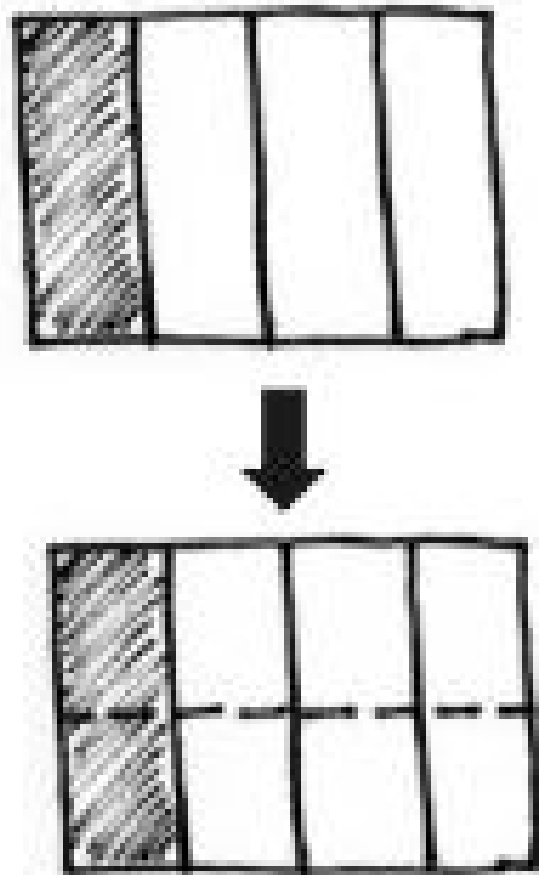
Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

**Work with your partner to determine an equivalent fraction to  $\frac{1}{4}$**

# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

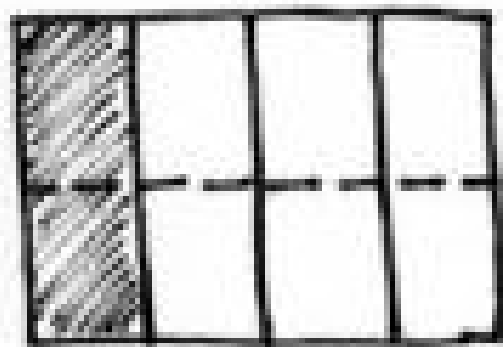
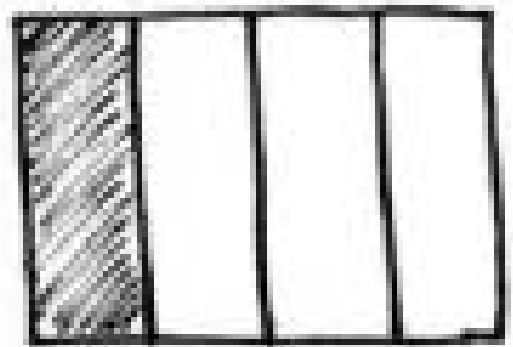
**Work with your partner to determine an equivalent fraction to  $\frac{1}{4}$**



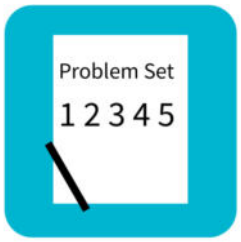
# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

**Work with your partner to determine an equivalent fraction to  $\frac{1}{4}$**



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



# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

**Work with your partner to determine an equivalent fraction to  $\frac{1}{3}$  WITHOUT drawing an area model first.**

# Concept Development

Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

**Work with your partner to determine an equivalent fraction to  $\frac{1}{3}$  WITHOUT drawing an area model first.**

$$\frac{1}{3} = \frac{1 \times 3}{3 \times 3} = \frac{3}{9}$$



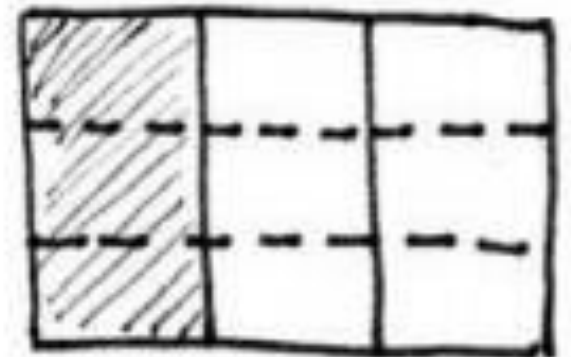
# Concept Development

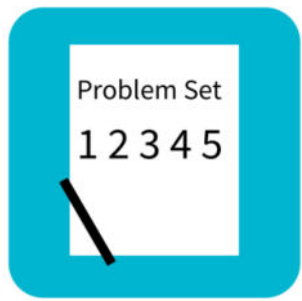
Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

**Work with your partner to determine an equivalent fraction to  $\frac{1}{3}$  WITHOUT drawing an area model first.**

$$\frac{1}{3} = \frac{1 \times 3}{3 \times 3} = \frac{3}{9}$$

My area model proves the equation.  $\frac{1}{3} = \frac{3}{9}$ .





# Problem Set

A STORY OF UNITS

Lesson 7 Problem Set

4•5

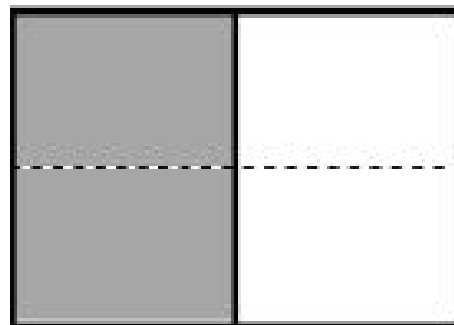
Name \_\_\_\_\_

Date \_\_\_\_\_

Each rectangle represents 1.

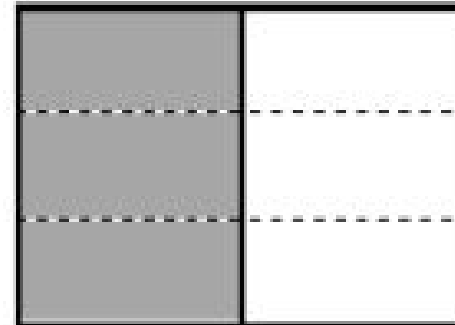
1. The shaded unit fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.

a.



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

b.



# Debrief

**What pattern did you notice for Problem 1(a–d)?**

**Discuss and compare with your partner your answers to Problems 2(e) and 2(f).**

**In Problem 2, the unit fractions have different denominators. Discuss with your partner how the size of a unit fraction is related to the denominator.**

**The numerator identifies the number of units selected. Can the numerator be larger than the denominator?**

# Exit Ticket

Name \_\_\_\_\_

Date \_\_\_\_\_

Draw two different area models to represent  $\frac{1}{4}$  by shading.  
Decompose the shaded fraction into (a) eighths and (b) twelfths.  
Use multiplication to show how each fraction is equivalent to  $\frac{1}{4}$ .

a.