

# Eureka Math

## 4th Grade Module 5 Lesson 8

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 shows a transition from a presentation viewer (Screen A) to the Google Slides editor (Screen B). Screen A displays a blue slide with the text "ReadyGEN™ in Action" and "3rd Grade Unit 3, Module A Lesson 1". A red box highlights the "pop-out" button in the top right corner of the viewer. A red arrow points from this button to Screen B. Screen B shows the Google Slides editor interface for a file named "Gr3(2) U3MAL1 Sample Lesson.pptx". The "File" menu is open, and the "Make a copy..." option is highlighted with a red box. A "Copy document" dialog box is open, showing the "Enter a new document name:" field with the text "Rename Your Presentation". The "OK" button is highlighted with a red box. The background of Screen B is a blue slide with the same text as Screen A.

**Screen A**

ReadyGEN™ in Action

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

**“pop-out”**

**Screen B**

Gr3(2) U3MAL1 Sample Lesson.pptx

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

Share...

New

Open...

Rename...

Make a copy...

Organize...

Move to trash

Import slides...

See revision history

Language

Download as

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Page setup...

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Print

Copy document

Enter a new document name:

Rename Your Presentation

Comments will not be copied to the new document.

Share it with the same people

OK Cancel

ReadyGEN™ in Action

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

# Icons



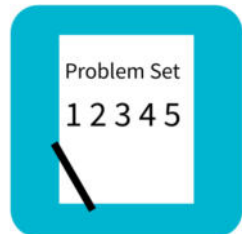
Read, Draw, Write



Learning Target



Personal White Board



Problem Set



Manipulatives Needed



Fluency



Think Pair Share



Whole Class



Individual



Partner



Small Group



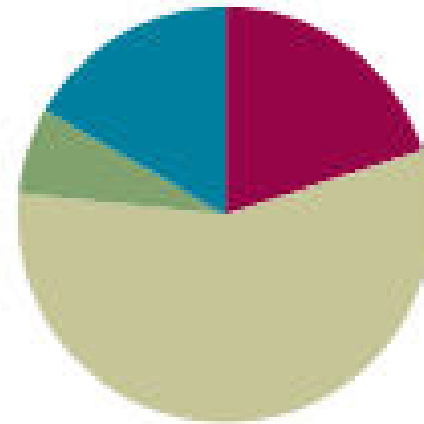
Small Group Time

## Lesson 8

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

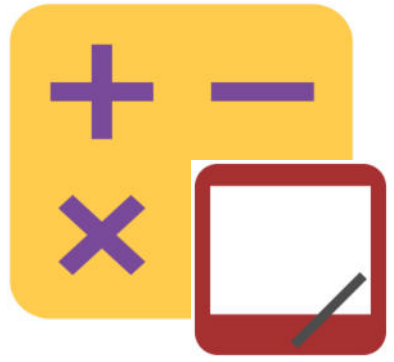
### Suggested Lesson Structure

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





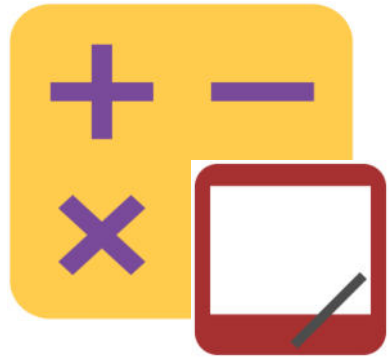
**I can use the  
area model and multiplication  
to show the equivalence  
of two fractions.**



# Fluency Practice

Multiply Mentally

$$32 \times 3 = \underline{\quad}$$

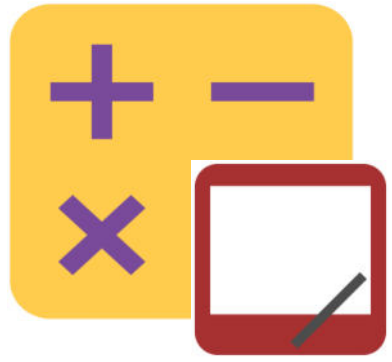


# Fluency Practice

Multiply Mentally

$$32 \times 3 = 96$$

$$32 \times 20 = \underline{\quad}$$



# Fluency Practice

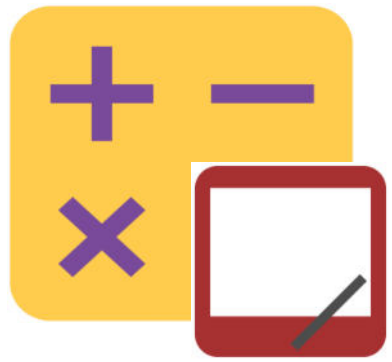
Multiply Mentally

$$32 \times 3 = 96$$

$$32 \times 20 = 640$$

$$32 \times 23 = \underline{\hspace{2cm}}$$





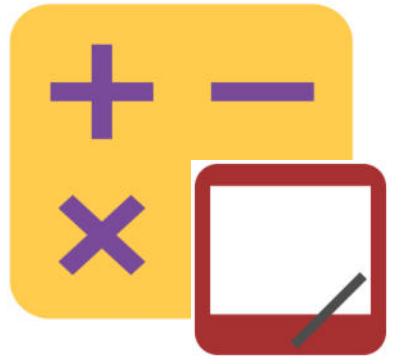
# Fluency Practice

Multiply Mentally

$$32 \times 3 = 96$$

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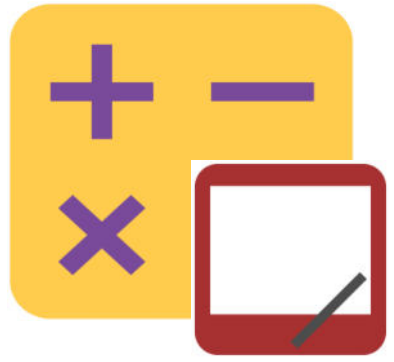
$$32 \times 23 = 736$$



# Fluency Practice

Count by Equivalent Fractions

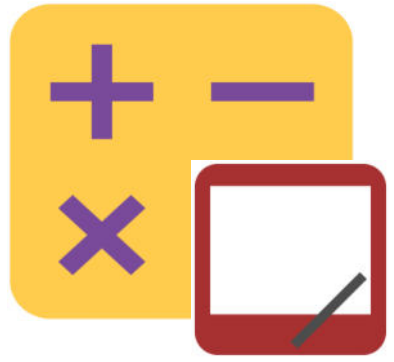
**Count from 0 to 12 by twos.**



# Fluency Practice

Count by Equivalent Fractions

**Count by 2 thirds to 12 thirds**



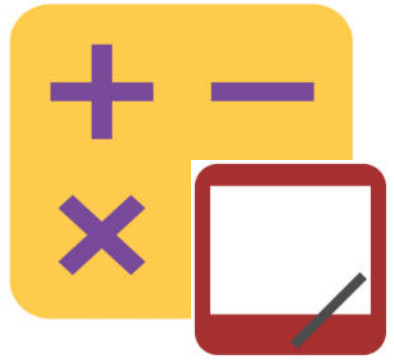
# Fluency Practice

Count by Equivalent Fractions

**Count by 2 thirds to 12 thirds**

$\frac{0}{3}$	$\frac{2}{3}$	$\frac{4}{3}$	$\frac{6}{3}$	$\frac{8}{3}$	$\frac{10}{3}$	$\frac{12}{3}$
0	$\frac{2}{3}$	$\frac{4}{3}$	2	$\frac{8}{3}$	$\frac{10}{3}$	4

**1 is the same as how many thirds?**



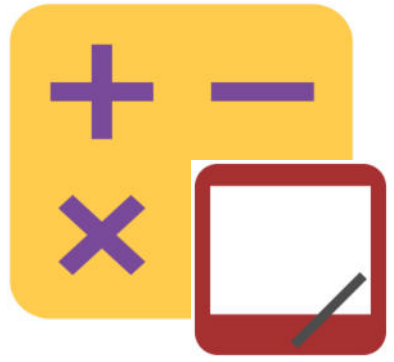
# Fluency Practice

Count by Equivalent Fractions

**Count by 2 thirds to 12 thirds**

$\frac{0}{3}$	$\frac{2}{3}$	$\frac{4}{3}$	$\frac{6}{3}$	$\frac{8}{3}$	$\frac{10}{3}$	$\frac{12}{3}$
0	$\frac{2}{3}$	$\frac{4}{3}$	2	$\frac{8}{3}$	$\frac{10}{3}$	4

**2 is the same as how many thirds?**

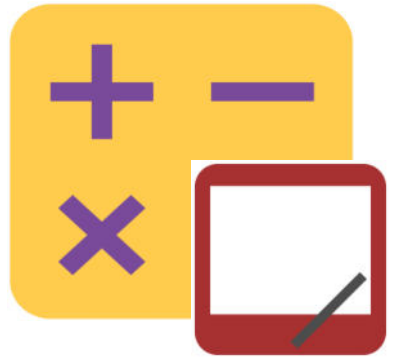


# Fluency Practice

Drawing by Equivalent Fractions

**Say this fraction**

$$\frac{1}{2}$$



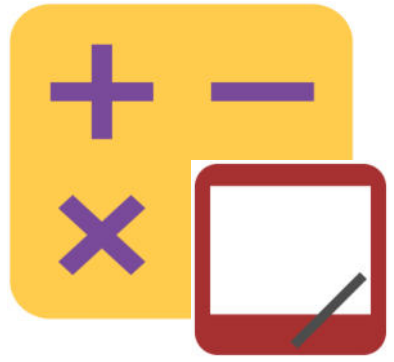
# Fluency Practice

Drawing by Equivalent Fractions

**Say this fraction**

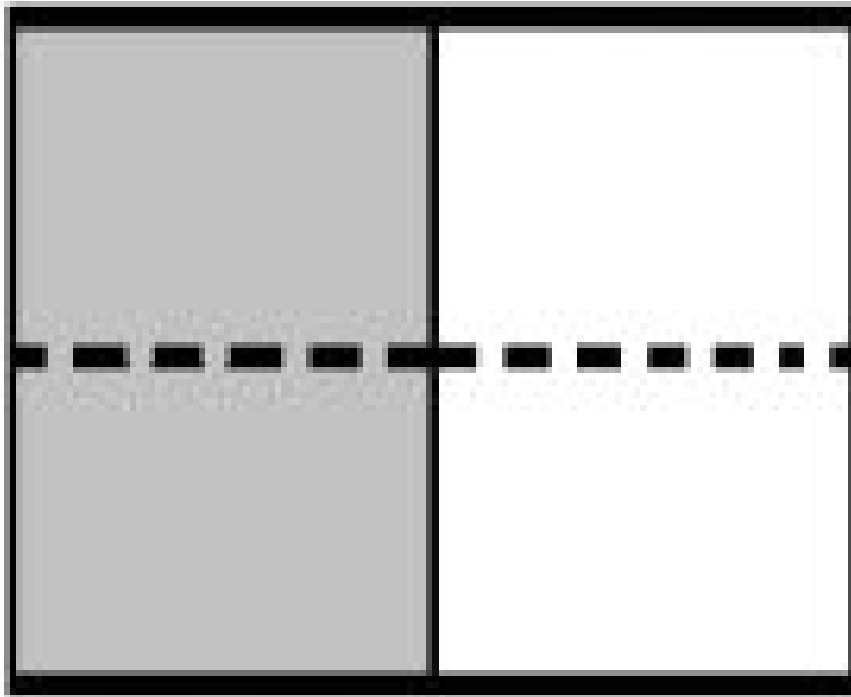
$$\frac{1}{2}$$

**Draw a model partitioned into 2 equal units.**

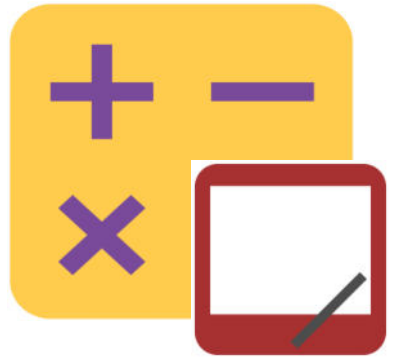


# Fluency Practice

Draw Equivalent Fractions

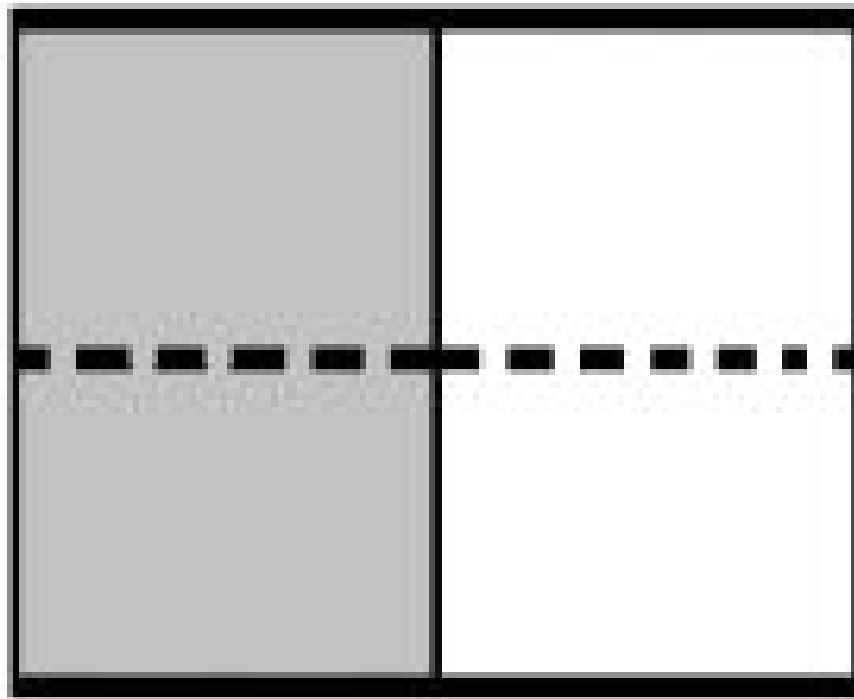




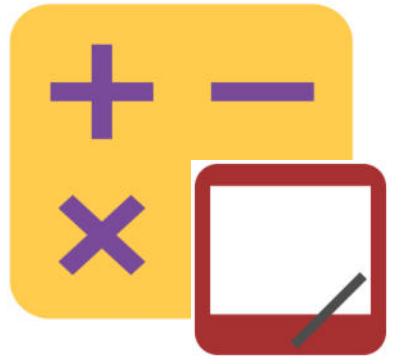


# Fluency Practice

Draw Equivalent Fractions



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



# Fluency Practice

Draw Equivalent Fractions

**Repeat as needed with any of the following:**

$$\frac{1}{2} = \frac{\quad}{8}, \quad \frac{1}{3} = \frac{\quad}{9}, \quad \frac{1}{4} = \frac{\quad}{8}, \quad \frac{1}{5} = \frac{\quad}{15}, \quad \text{and} \quad \frac{1}{7} = \frac{\quad}{14}$$

# Application Problem

**Saisha gives some of her chocolate bar to her younger brother Lucas.**

**He says, “Thanks for  $\frac{3}{12}$  of the bar.”**

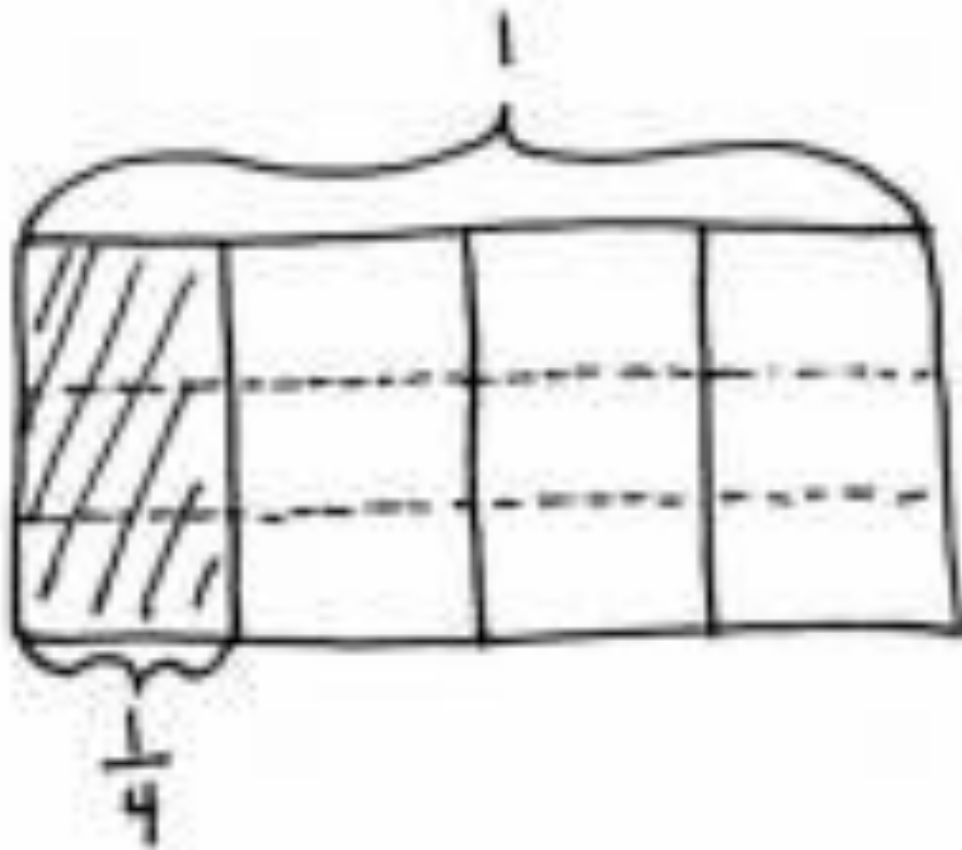
**Saisha responds, “No. I gave you  $\frac{1}{4}$  of the bar.”**

**Explain why both Lucas and Saisha are correct.**

# Application Problem

C	H	O	O	L	A	T	E

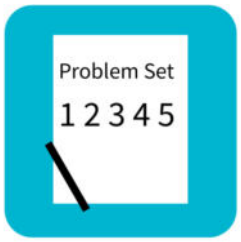
# Application Problem



The smaller unit is twelfths. 3 twelfths is the same as 1 fourth.

Both Lucas and Saisha are correct because  $\frac{3}{12} = \frac{1}{4}$ .

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

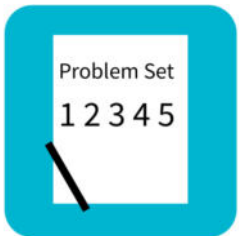


# Concept Development

## Materials



**(S) Personal White board**

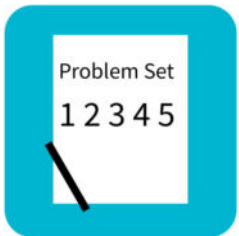


# Concept Development

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

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

**Draw three horizontal lines across the area model.**



# Concept Development

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

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

**Draw three horizontal lines across the area model.**

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

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



# Concept Development

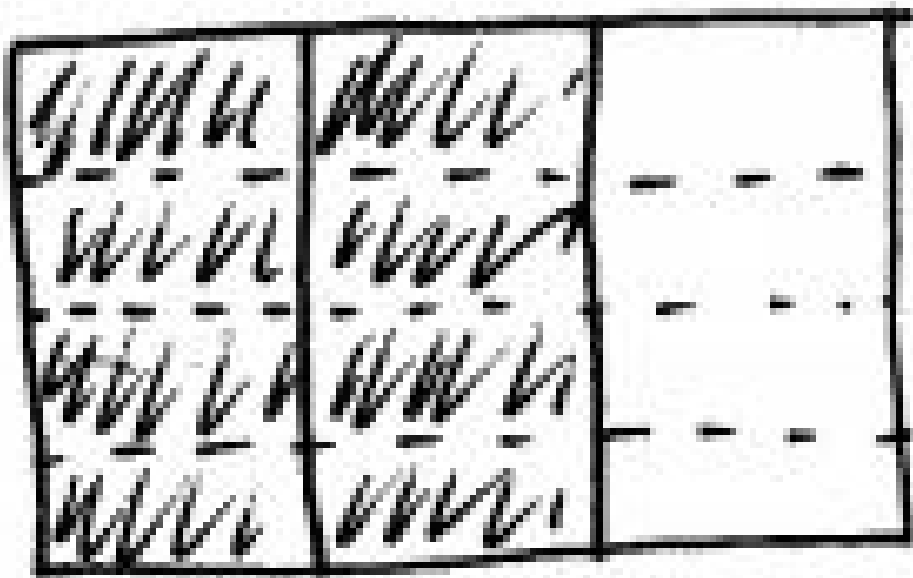
Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

$\frac{2}{3}$	$\frac{2 \times 4}{3 \times 4}$	---
$\frac{2}{3}$	$\frac{2 \times 4}{3 \times 4}$	---
$\frac{2}{3}$	$\frac{2 \times 4}{3 \times 4}$	---
$\frac{2}{3}$	$\frac{2 \times 4}{3 \times 4}$	---

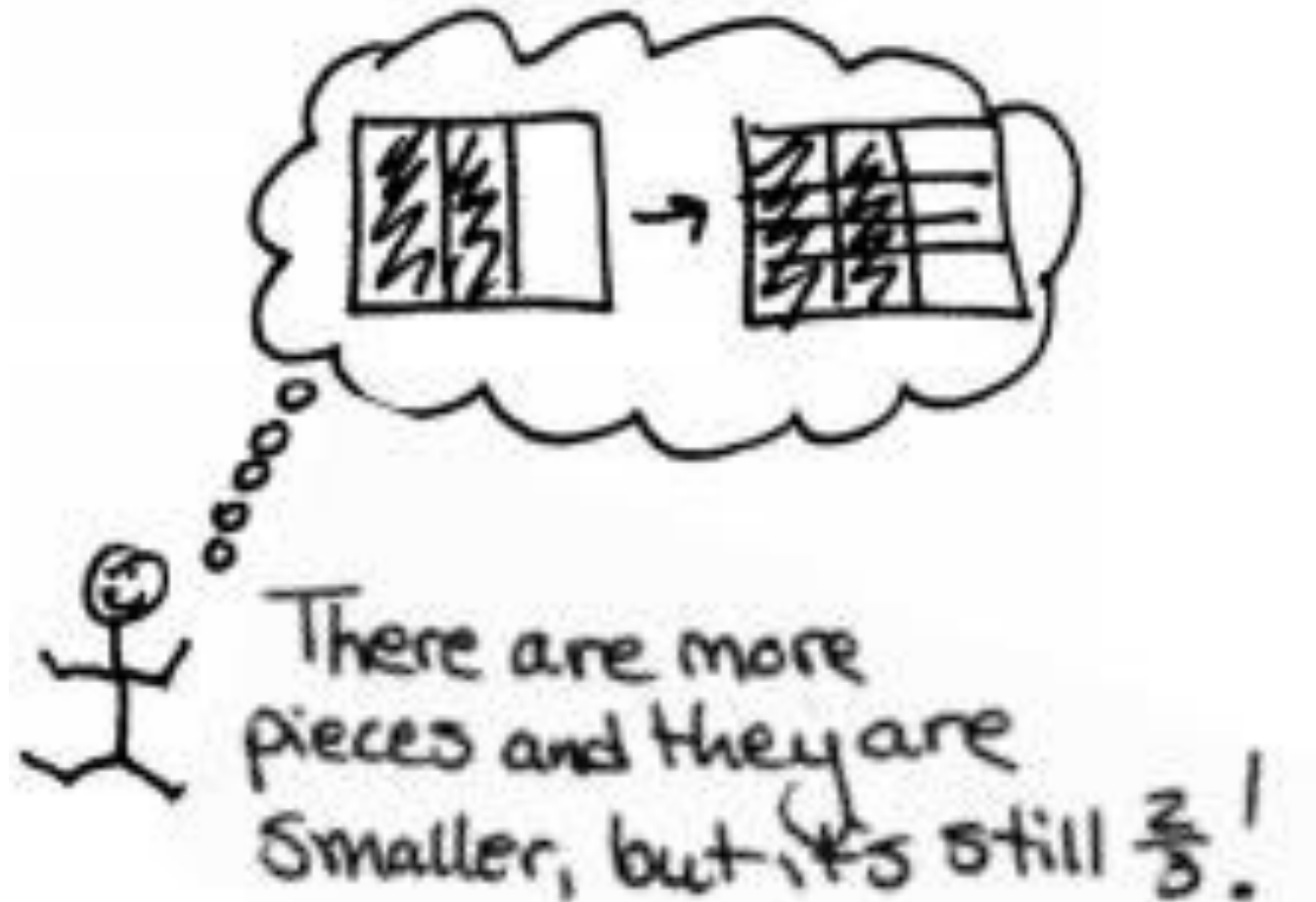
$$\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$

# Concept Development

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

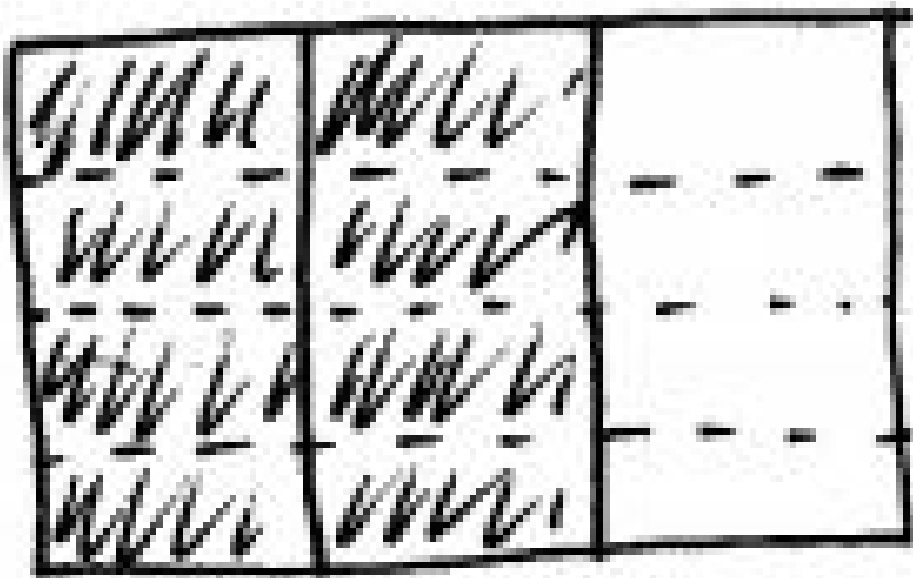


$$\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$

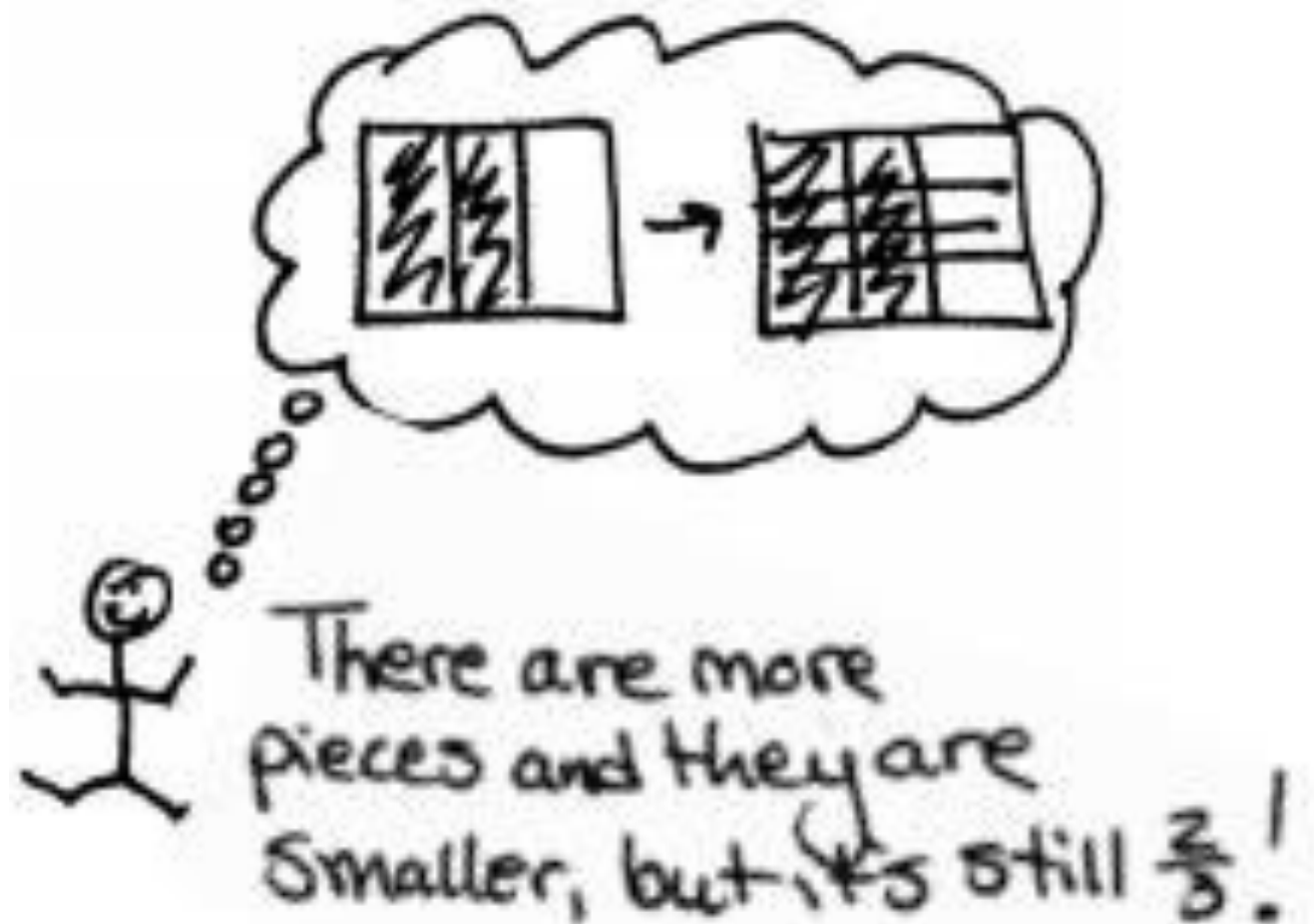


# Concept Development

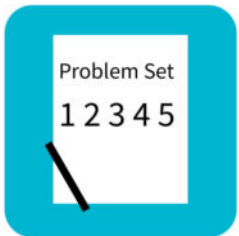
Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.



$$\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$



**How do you know the fraction is still representing the same amount?**



# Concept Development

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

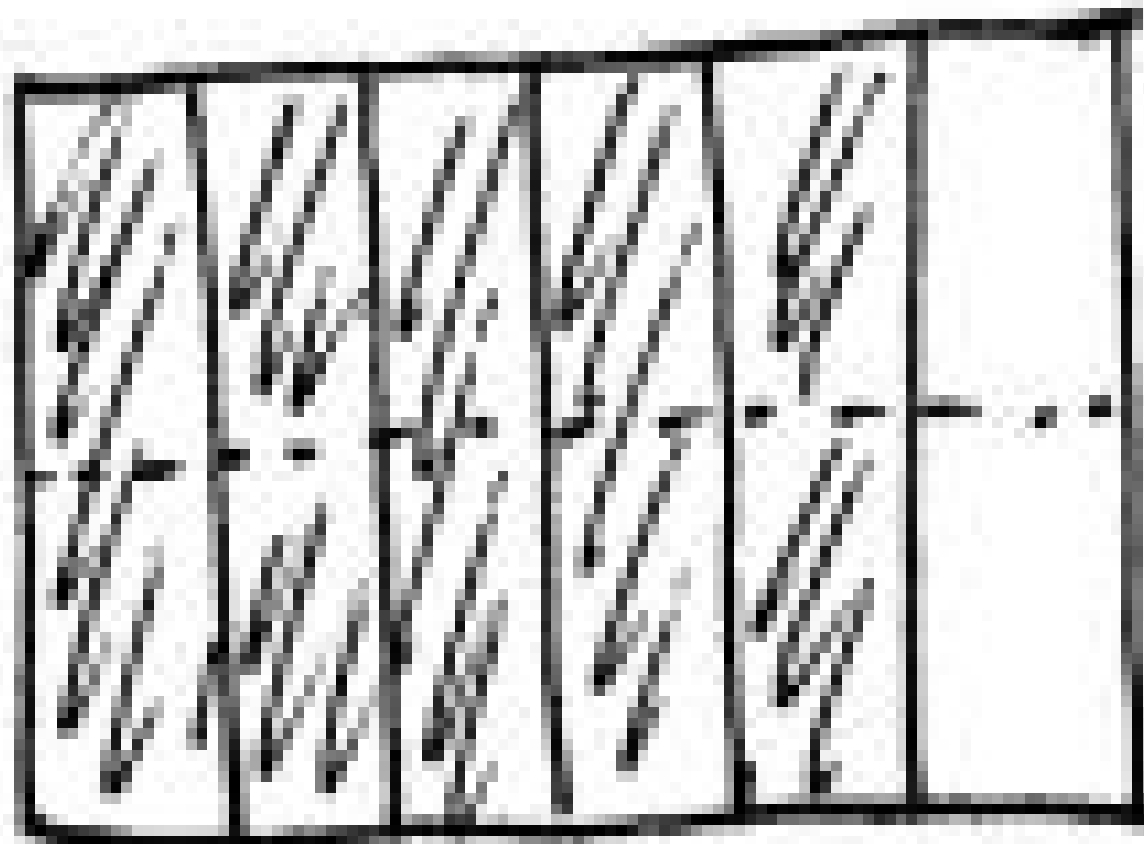
**Draw an area model to represent  $\frac{5}{6}$**

**Find an equivalent fraction with the denominator of 12.**

**Explain to a partner how this is done.**

# Concept Development

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



$$\frac{5}{6} = \frac{5 \times 2}{6 \times 2} = \frac{10}{12}$$

# Concept Development

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

$$\frac{2}{4} = \frac{6}{8}$$

**If the whole is the same, is this statement true or false?**

# Concept Development

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

$$\frac{2}{4} = \frac{6}{8}$$

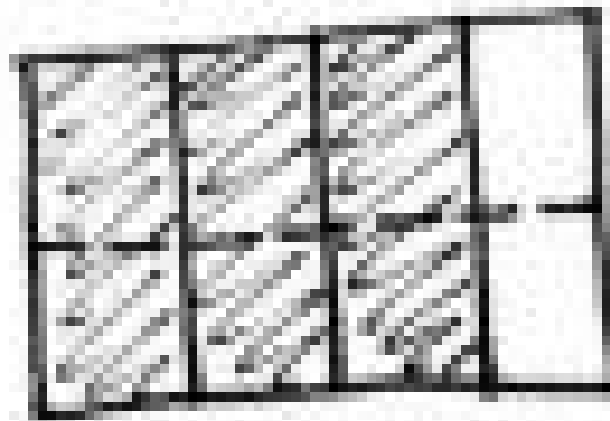
**Represent the equivalence in a number sentence using multiplication, and draw an area model to show the equivalence.**

# Concept Development

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

$$\frac{3}{4} = \frac{6}{8}$$

$$\frac{3}{4} = \frac{3 \times 2}{4 \times 2} = \frac{6}{8}$$





# Concept Development

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

$$\frac{3}{4} = \frac{6}{12}$$

**If the whole is the same, is this statement true or false?**

# Concept Development

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

$$\frac{3}{4} = \frac{6}{12}$$

**Represent the equivalence in a number sentence using multiplication, and draw an area model to show the equivalence.**

# Concept Development

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

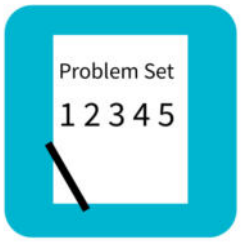
$\frac{3}{4} = \frac{6}{12}$

This is false!  
The numerator was multiplied by 2. The denominator was multiplied by 3!

See! These are not equal!

$\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$

~~$\frac{3}{4} = \frac{6}{12}$~~



# Concept Development

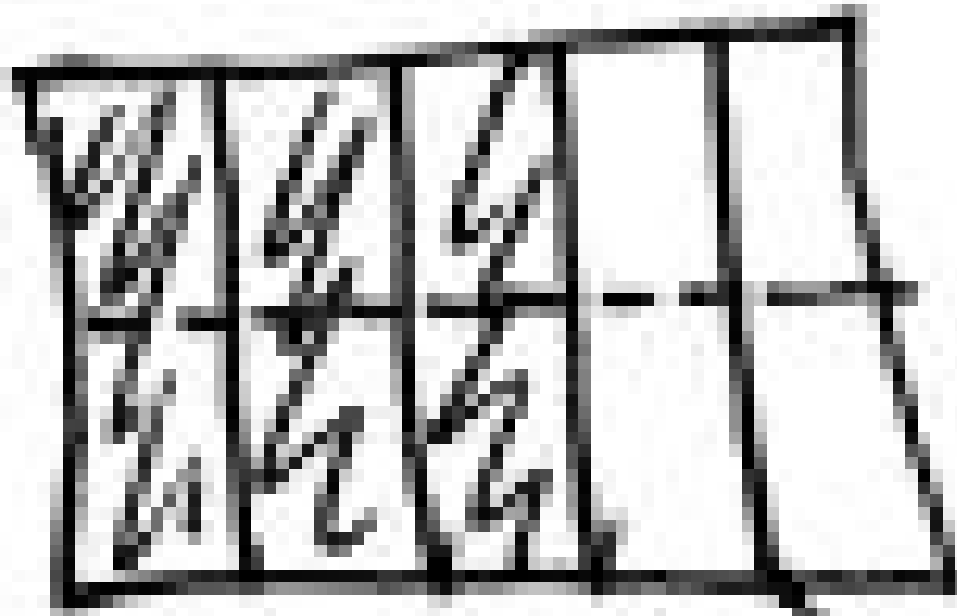
Determine that multiplying the numerator and denominator by  $n$  results in an equivalent fraction.

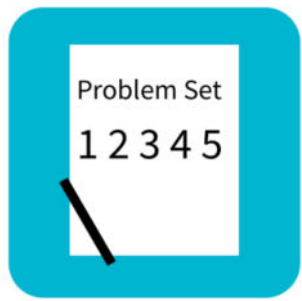
**Find an equivalent fraction for  $\frac{3}{5}$  without drawing an area model first.**

# Concept Development

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

$$\frac{3}{5} = \frac{3 \times 2}{5 \times 2} = \frac{6}{10}$$





# Problem Set

A STORY OF UNITS

Lesson 8 Problem Set

4•5

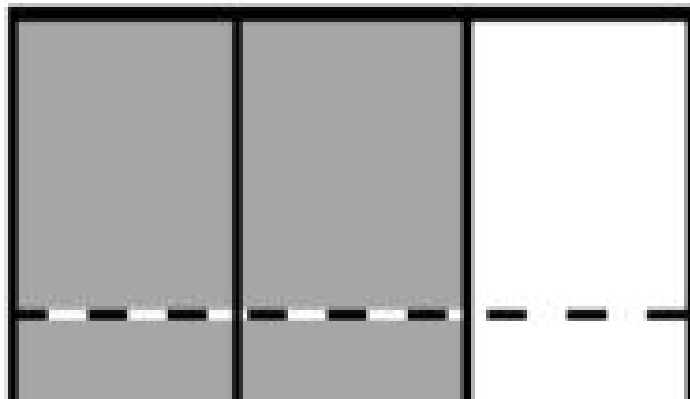
Name \_\_\_\_\_

Date \_\_\_\_\_

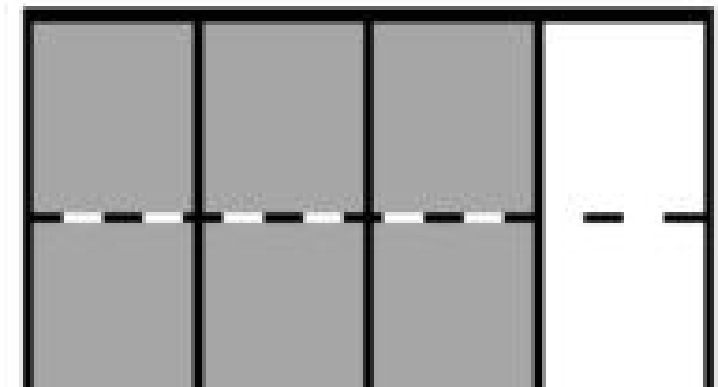
Each rectangle represents 1.

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.



b.



# Debrief

**For Problem 3(a–d), how did you determine the number of horizontal lines to draw in each area model?**

**For Problem 5(c), did you and your partner have the same answer? Explain why you might have different answers.**

**Explain when someone might need to use equivalent fractions in daily life.**

**How are we able to show equivalence without having to draw an area model?**

**Think back to the Application Problem. What fraction of the bar did Saisha receive?**

# Exit Ticket

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Use multiplication to create an equivalent fraction for the fraction below.

$$\frac{2}{5}$$