Lesson 8:

Add and subtract fractions with unrelated units by finding equivalent fractions pictorially.

CCSS Standard – 5.NF.A / 5.NF.A.1

FLUENCY (10-min)

Whiteboard Exchange:
Multiply Multi-digit Whole Numbers

Write and complete the equation using the STANDARD ALGORITHUM

$$3{,}212 \times 3 = \_\_\_\_\_$$

FLUENCY (10-min)

Whiteboard Exchange:
Multiply Multi-digit Whole Numbers

Write and complete the equation using the STANDARD ALGORITHUM

$$1{,}623 \times 4 = \underline{\qquad\qquad}$$

FLUENCY (10-min)

Whiteboard Exchange:
Multiply Multi-digit Whole Numbers

Write and complete the equation using the STANDARD ALGORITHUM

$$4{,}120 \times 7 = \_\_\_\_$$

FLUENCY (10-min) **Whiteboard Exchange: Equivalent Fractions**

Write and complete the equation to find a fraction equivalent to 1/2.

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

FLUENCY (10-min) **Whiteboard Exchange: Equivalent Fractions**

Write and complete the equation to find a fraction equivalent to 1/2.

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

FLUENCY (10-min) **Whiteboard Exchange: Equivalent Fractions**

Write and complete the equation to find a fraction equivalent to 1/3.

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

FLUENCY (10-min)

Whiteboard Exchange: Equivalent Fractions

Write and complete the equation to find a fraction equivalent to 1/3.

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

FLUENCY (10-min)

Whiteboard Exchange: Equivalent Fractions

Write and complete the equation to find a fraction equivalent to 1/4.

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

LAUNCH (5-min)

Compare fractions with RELATED units to those with UNRELATED units and determine when more than one fraction in an expression must be renamed.

*Previously, we used models and numeric expressions to make **equivalent fractions**.*

*Today, let's fold paper to represent the expression with **related units** to see whether we can use the same method to help us with the expression with **unrelated units**.*

What do you notice about these expressions?
Which fraction has RELATED units? Which has UNRELATED units?

So, 3/4 is equal to 6/8

$$\frac{6}{8}\ \cancel{\frac{3}{4}} + \frac{3}{8} = \frac{9}{8}$$

$$\frac{3}{4} + \frac{1}{6}$$

First fold and shade your paper to show fourths. Shade 3 fourths.

Next, fold your paper horizontally to show eights. 3/4 = 6/8

Can we use the same method with this expression?

Can we fold our 3/4 paper into sixths?

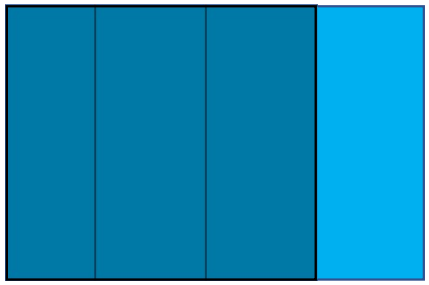
NO!
We cannot. Because fourths and sixths are UNRELATED. 6 is not a multiple of 4 and 4 is not a factor of 6.

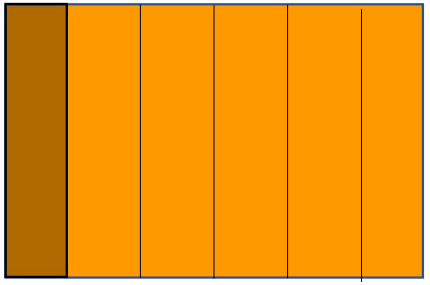
LEARN (35-min) **Add and Subtract Fractions with Unrelated Units**

You have two different color pieces of paper both the same size.

$$\frac{3}{4} + \frac{1}{6}$$

Represent 3/4 with one sheet and 1/6 with the other sheet.





Now that we represented each fraction on different papers, work with a partner to make LIKE UNITS to find 3/4 + 1/6.

LEARN (35-min) **Add and Subtract Fractions with Unrelated Units**

Let's share-out……

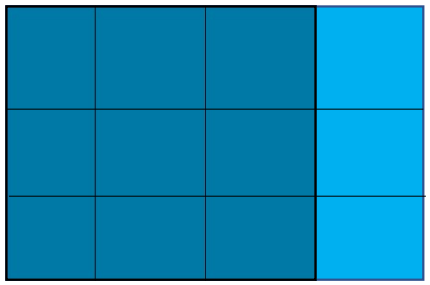
Did anyone fold their paper into twelfths?

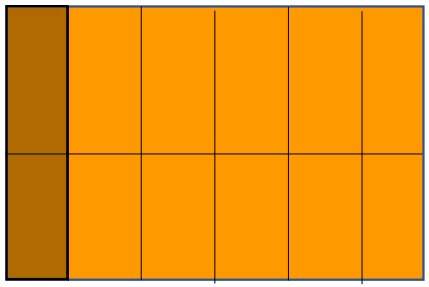
$$\frac{3}{4} + \frac{1}{6}$$

$$\frac{3}{4} = \frac{x\,3}{x\,3} = \frac{9}{12}$$

$$\frac{1}{6} = \frac{x\,2}{x\,2} = \frac{2}{12}$$

$$\frac{9}{12} + \frac{2}{12} = \frac{11}{12}$$



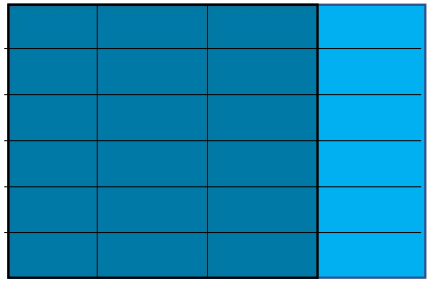


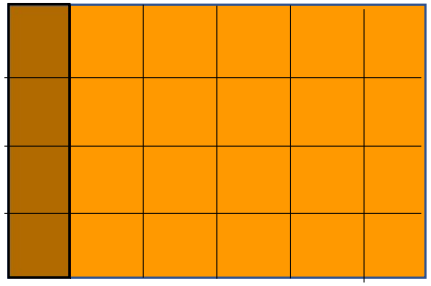
Did anyone fold their paper into twenty-fourths?

$$\frac{3}{4} = \frac{x\,6}{x\,6} = \frac{18}{24}$$

$$\frac{1}{6} = \frac{x\,4}{x\,4} = \frac{4}{24}$$

$$\frac{18}{24} + \frac{4}{24} = \frac{22}{24}$$





LEARN (35-min)

Add and Subtract Fractions with Unrelated Units

LEARN BOOK PAGE 69

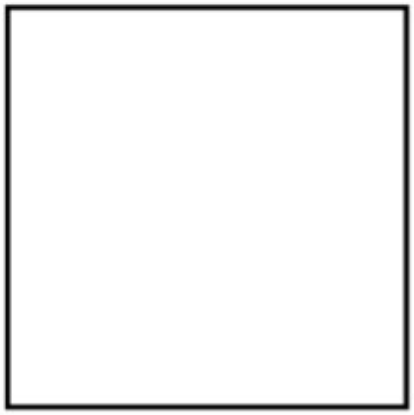
Must remember this sequence of questions:

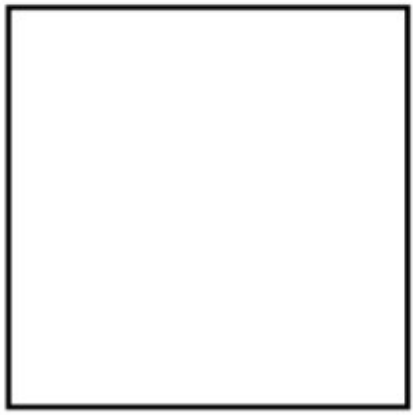
Are the denominators the same?

1. If yes, just add the numerators.
2. If not, ask "Are they related?" (Is there a multiplication or division relationship?)
3. If they are related, rename only one of the fractions.
4. If they are not related, rename both of the fraction.

Add or subtract.

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





LEARN (35-min)

Add and Subtract Fractions with Unrelated Units

LEARN BOOK PAGE 69

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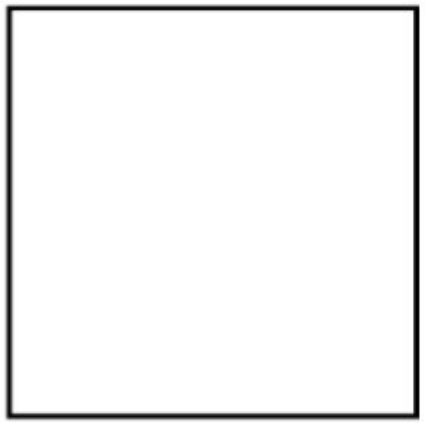
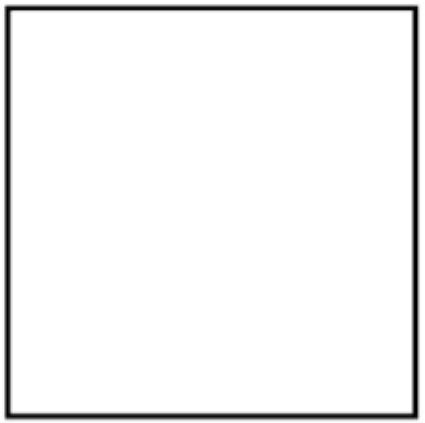
2. $\frac{2}{4} - \frac{2}{6} =$ _____ $-$ _____ $=$ _____





LEARN (35-min)

Add and Subtract Fractions with Unrelated Units

LEARN BOOK PAGE 70

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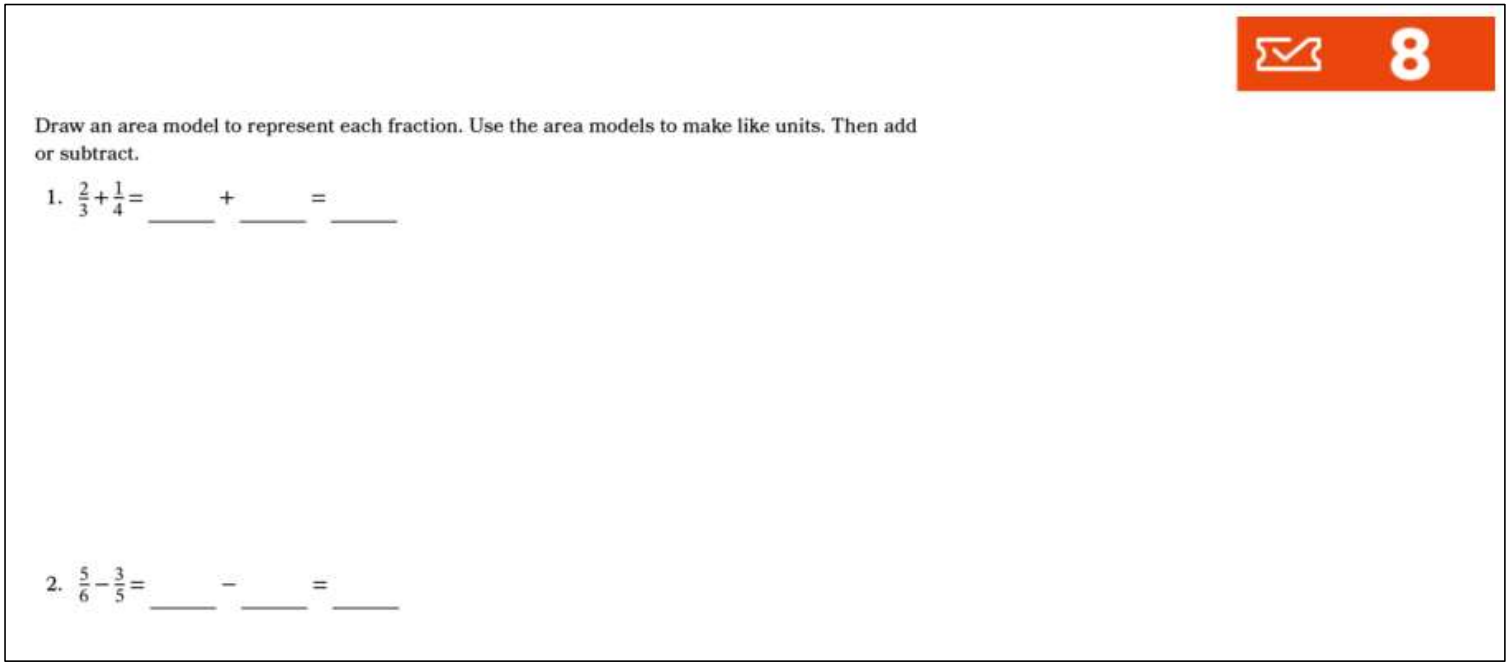
3. $\frac{5}{4} + \frac{3}{5} =$ _____ + _____ = _____

LAND (10-min)

Exit Ticket

Exit Ticket – PAGE 75



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Draw an area model to represent each fraction. Use the area models to make like units. Then add or subtract.

1. $\frac{2}{3}+\frac{1}{4}=$ ____ + ____ = ____

2. $\frac{5}{6}-\frac{3}{5}=$ ____ − ____ = ____

Small Group Time:
Problem Set Page 71 -72

Homework:
Page 53 APPLY BOOK