Eureka Math

4th Grade
Module 5
Lesson 25

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!

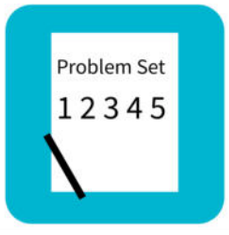
Directions for customizing presentations are available on the next slide.

Icons

Read, Draw, Write

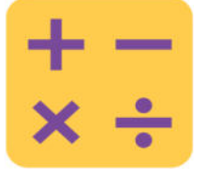
Learning Target

Personal White Board



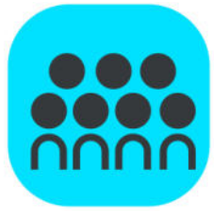
Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

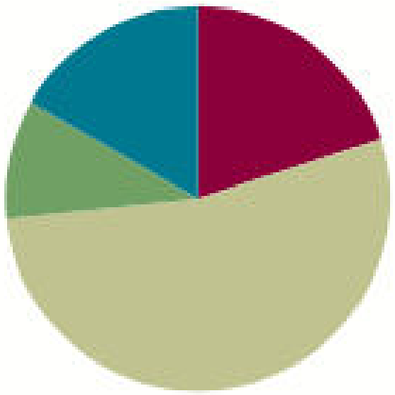
Small Group Time

Lesson 25

Objective: Decompose and compose fractions greater than 1 to express them in various forms.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(6 minutes)
Concept Development	(32 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Decompose and compose fractions greater than 1 to express them in various forms.

How Many Ones?

For each fraction, say the number of ones it is equal to.

2 halves　　4 halves　　6 halves

For each fraction, write the answer on your white board..

$\frac{10}{2}$　　$\frac{10}{10}$　　$\frac{6}{3}$

Add and Subtract Fractions

3 is the same as 2 plus how many fourths? How many fourths are in 1?

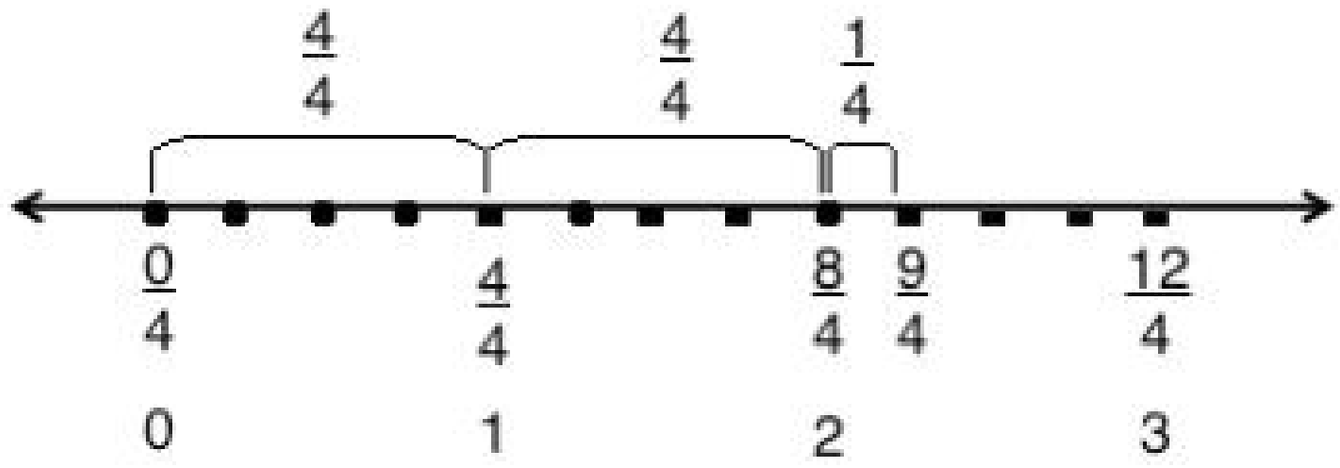
$$3-\frac{1}{4}=2+\frac{\quad}{4}$$

Finish the number sentence.
Write the completed equation.

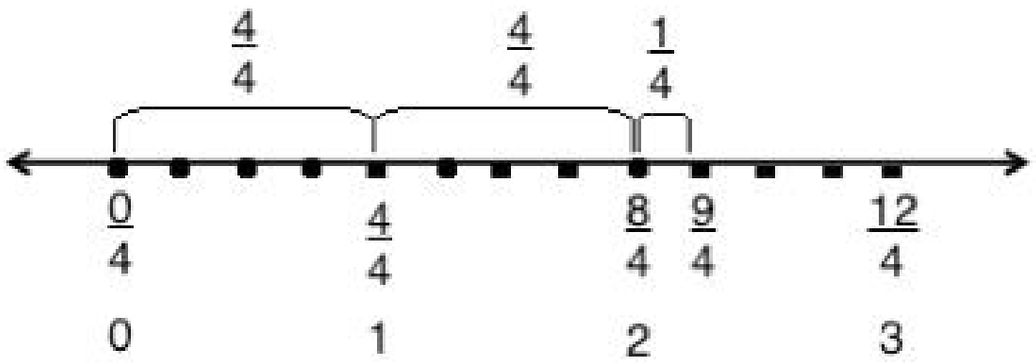
$$3-\frac{1}{4}=2+\frac{3}{4}=2\frac{3}{4}$$

Change Fractions to Mixed Numbers

- Draw a number line with endpoints 0 and 3.
- Say the fraction: $\frac{9}{4}$
- Decompose each whole number into fourths by marking each fourth with a dot. Label 9/4
- Label each whole number both as a fraction and a whole number



Change Fractions to Mixed Numbers



How many groups of 4 fourths are in 9 fourths?

$$\frac{9}{4} = 2x\frac{4}{4} + \frac{1}{4} = 2 + \frac{\square}{4}$$

Fill in the unknown numerator and write 9/4 as a mixed number.

$$\frac{9}{4} = \frac{8}{4} + \frac{1}{4} = 2 + \frac{1}{4} = 2\frac{1}{4}$$

$$\frac{9}{4} = \frac{\square \times 4}{4} + \frac{1}{4} = 2 + \frac{1}{4} = 2\frac{1}{4}$$

Fill in the numerator's unknown factor to make the number sentence true.

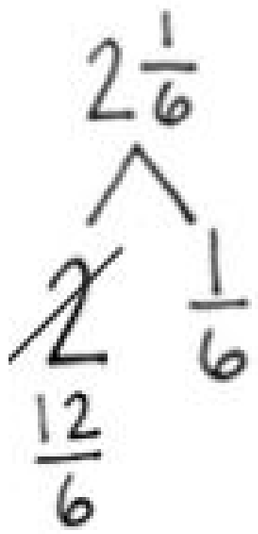
$$\frac{9}{4} = \frac{2 \times 4}{4} + \frac{1}{4} = 2 + \frac{1}{4} = 2\frac{1}{4}$$

RDW

Application Problem

Mrs. Fowler knew that the perimeter of the soccer field was ⅙ mile. He goal was to walk two miles while watching her daughter's game. If she walked around the field 13 times, did she meet her goal? Explain your thinking.

Model with a number line to convert a mixed number into a fraction greater than 1.



Use a number bond to decompose 2 ⅙ into ones and sixths.

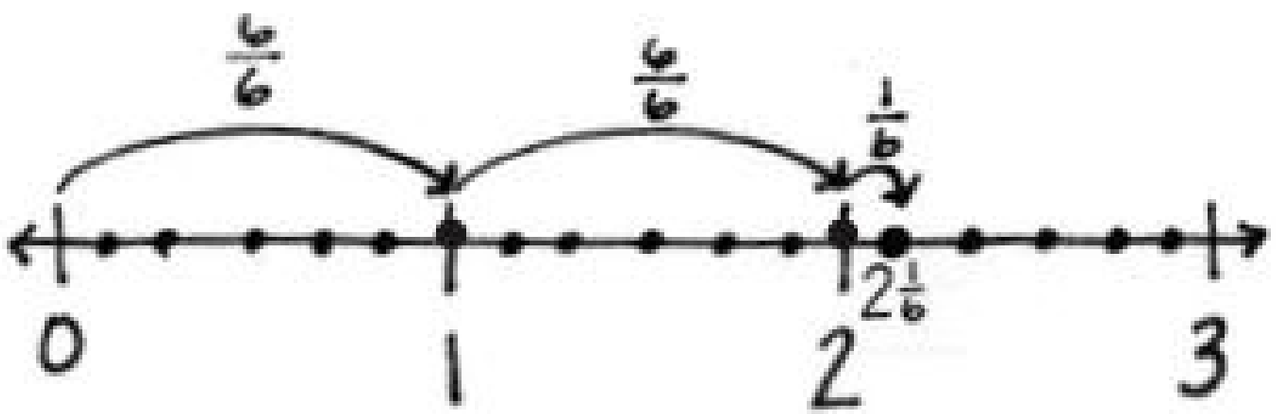
How many sixths are in 2 ones?

$$\frac{12}{6}+\frac{1}{6}=\frac{13}{6}$$

To check our work, let's draw a number line with 0 and 3 as endpoints. Use dots to decompose each whole number into sixths. Locate 2 ⅙

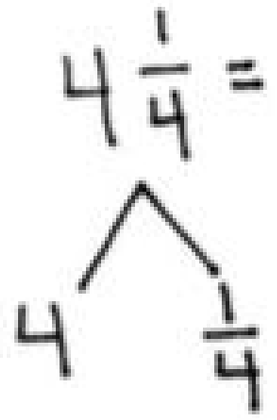
How many sixths from 0-1?
How many sixths from 1-2?

$$2\frac{1}{6}=\frac{13}{6}$$



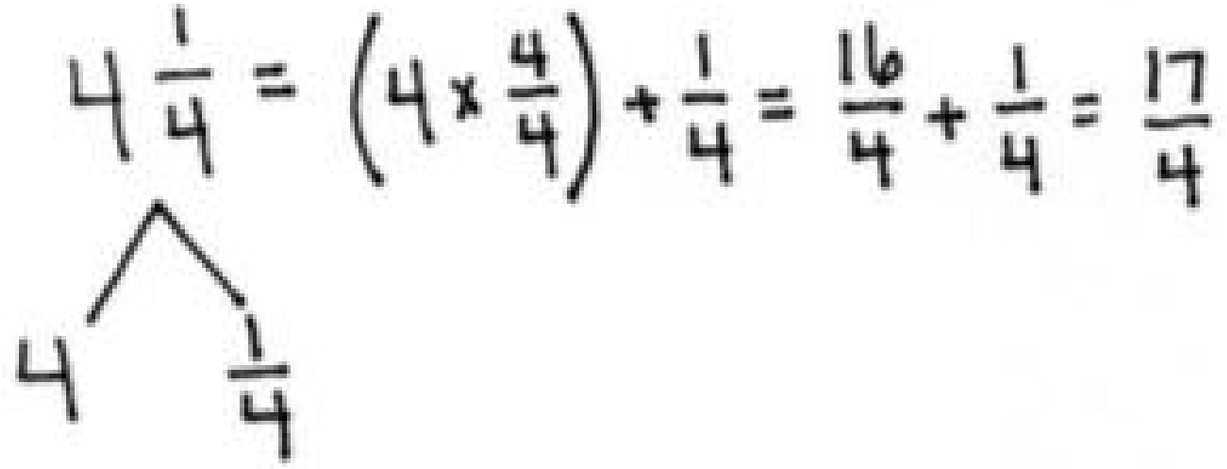
Use multiplication to convert a mixed number to a fraction.

Draw a number bond for 4 ¼ , separating the ones and the fourths as two parts.



1 one equals 4 fourths, so 2 ones equals 2 × (4 fourths). What is 4 ones equal to? Write your answer in unit form.

Write that number sentence numerically, and add the remaining 1 fourth. What is the total number of fourths?



Use multiplication to convert a mixed number to a fraction.

Convert 2 ⅔ into a fraction greater than 1 using multiplication.

Compare the following number sentences:

$$2\frac{2}{3} = \left(\frac{2 \times 3}{3}\right) + \frac{2}{3} = \frac{6}{3} + \frac{2}{3} = \frac{8}{3}.$$

$$2\frac{2}{3} = \left(2 \times \frac{3}{3}\right) + \frac{2}{3} = \frac{6}{3} + \frac{2}{3} = \frac{8}{3}.$$

Use mental math to convert a mixed number into a fraction greater than 1.

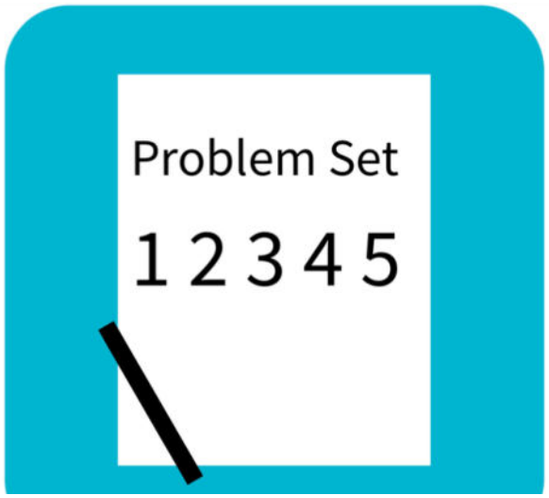
$3\frac{4}{5}$

Create a picture of this mixed number in your head.
How many ones? How many fifths?

How many fifths are there in 3 ones?.

Finish the equivalency. 3 ⅘ = _____

$$\frac{15}{5}+\frac{4}{5}=\frac{19}{5}$$

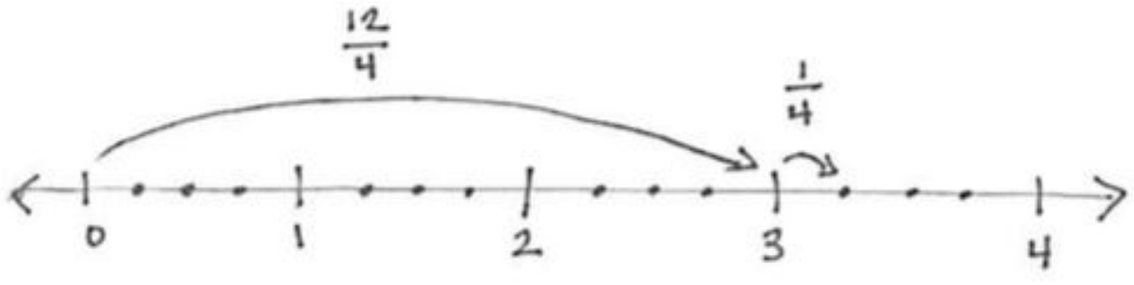


Problem Set

Name _____ Date _____

1. Convert each mixed number to a fraction greater than 1. Draw a number line to model your work.

a. $3\frac{1}{4}$



$3\frac{1}{4} = 3 + \frac{1}{4} = \frac{12}{4} + \frac{1}{4} = \frac{13}{4}$

b. $2\frac{4}{5}$

Debrief

- Explain to your partner how you solved Problems 1(b), 2(b), and 3(b). Did you use the same strategies to solve or different strategies?
- How was the work from previous lessons helpful in converting from a mixed number to a fraction greater than 1?
- How does the number line help to show the conversion from a mixed number to a fraction greater than 1?
- How did the Application Problem connect to today's lesson?

Exit Ticket

Name _____ Date _____

Convert each mixed number to a fraction greater than 1.

1. $3\frac{1}{5}$

2. $2\frac{3}{5}$