Eureka Math

4th Grade
Module 5
Lesson 32

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

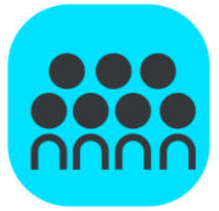
Personal White Board

Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

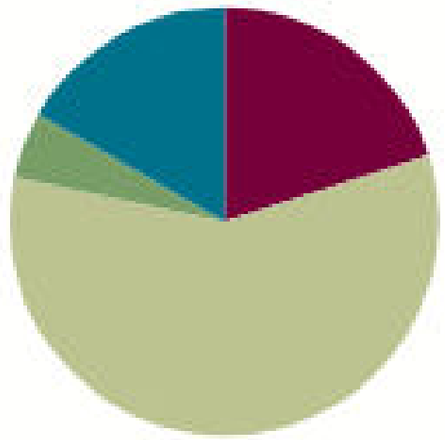
Small Group Time

Lesson 32

Objective: Subtract a fraction from a mixed number.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(3 minutes)
Concept Development	(35 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



I can subtract a fraction from a mixed number

Count by…

Count by twos to 18, starting at 0

Count by two sixths to 18 sixths, starting at 0 sixths.

Now, let’s count by sixths again, BUT we need to use equivalent fractions. For example when we get to 3/6 we can say ½!

Change mixed numbers

1 ⅘

2 ¼

3 ⅚

Add mixed numbers

$5\frac{1}{3} + 2\frac{1}{3} =$

$4\frac{3}{5} + 2\frac{1}{5} =$

$6\frac{5}{8} + 2\frac{3}{8} =$

Application Problem

Meredith had 2 m 65 cm of ribbon. She used 87 cm of the ribbon. How much ribbon did she have left?

Subtract a fraction from a mixed number, counting back.

3 oranges 2 apples - 1 apple is?

3 dogs 2 puppies- 1 puppy is?

3 ones 2 fifths - 1 fifth is?

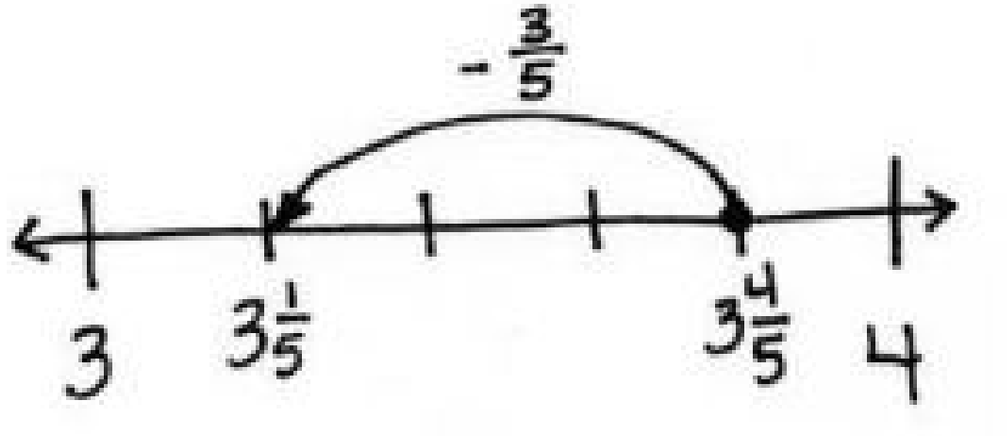
Subtract a fraction from a mixed number, counting back.

3 ⅘-⅗

Do we have enough fifths to subtract 3 fifths?

Solve the problem.

What did you get?



Let’s Draw a number line to show this work.

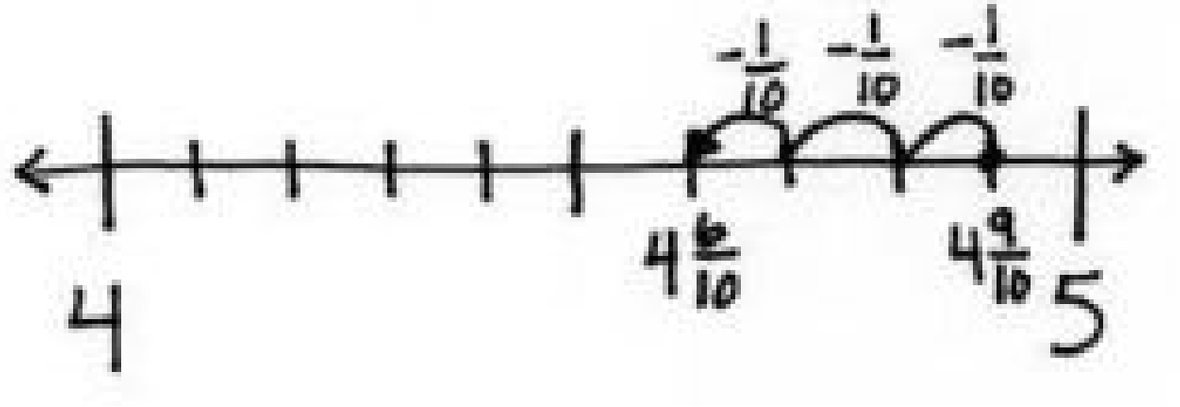
Subtract a fraction from a mixed number, counting back.

4 9/10- 3/10

Do we have enough tenths to subtract 3 tenths?

Solve the problem.

What did you get?



Let’s Draw a number line to show this work.

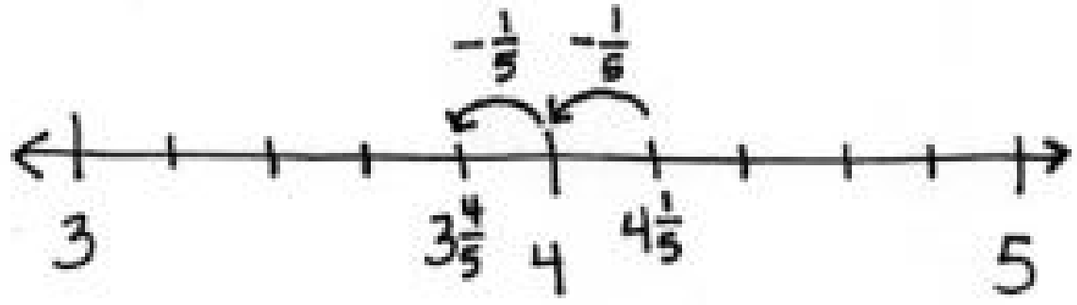
Subtract a fraction from a mixed number, counting back.

$4\ \frac{1}{5} - \frac{2}{5}$

Do we have enough fifths to subtract 2 fifths?

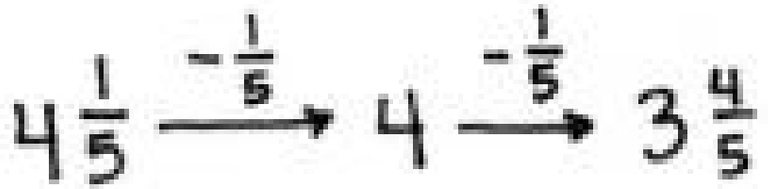
How can we solve this problem?

Try a number line.



What about the arrow way?

Let’s take a look at both methods.



Subtract a fraction from a mixed number, decompose the subtrahend.

$4\ \frac{1}{5} - \frac{3}{5}$

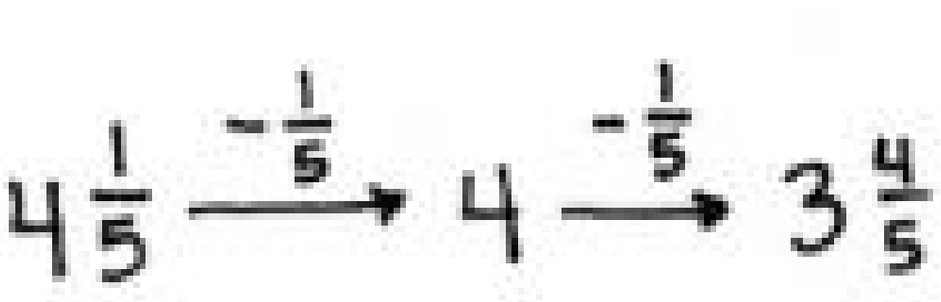
Do we have enough fifths to subtract 3 fifths?

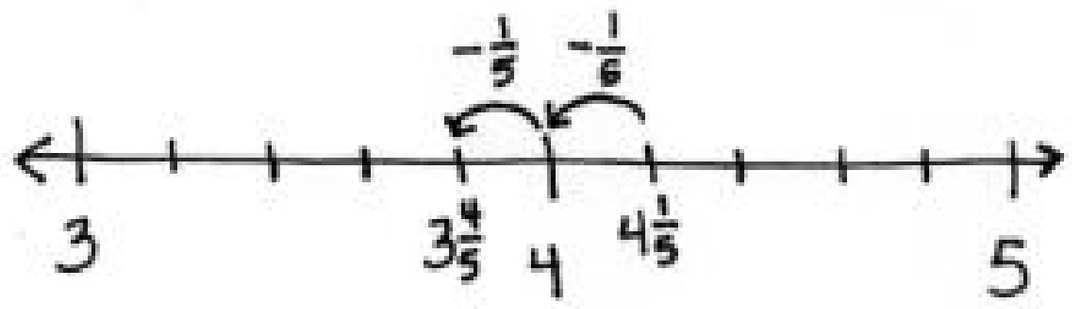
We are going to solve the problem by decomposing the subtrahend. The subtrahend is the number we are removing from the other.

Does $\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$?
Now do we have enough fifths to subtract $\frac{1}{5}$?
We can subtract 4 $\frac{1}{5}$-$\frac{1}{5}$ and get 4.
Our new number sentence is 4-$\frac{2}{5}$. We know how to do this from previous learning. Solve it!

Subtract a fraction from a mixed number, decompose the subtrahend.

Let's take a look at what this would look like on a number line and using the arrow way.





Do you see where they decomposed the subtrahend?

Subtract a fraction from a mixed number, decompose the subtrahend.

Let’s do some more!!

Group problem: 4 5/10 - 7/10

Partner problem: 2 2/12- 7/12

Individual problem: 3 7/10- 9/10

Subtract a fraction from a mixed number, decompose the minuend

3 ⅕-⅗

This is a problem we have done before, but we are going to use a different strategy!

Let’s decompose 3 ⅕ by taking 1 whole out!

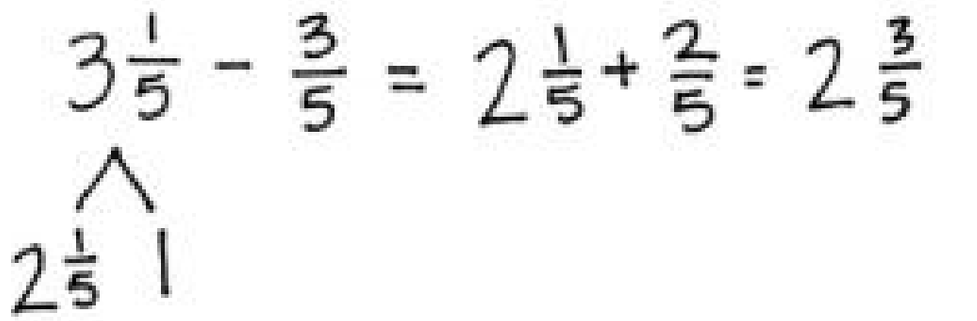
We now have (2 ⅕ + 1) -⅗

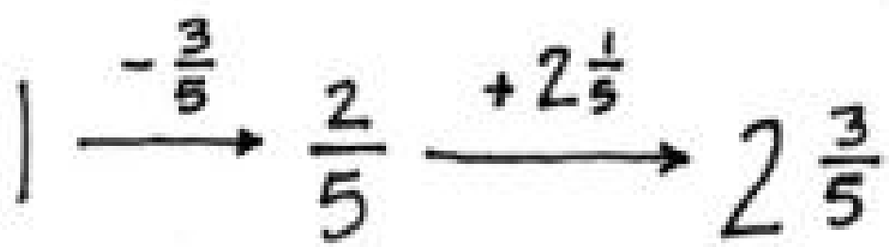
We now can solve 1- ⅗, what do we get?
We now have ⅖ left and 2 ⅕.
We need to add these together.
What do we get?

Subtract a fraction from a mixed number, decompose the minuend

3 ⅕-⅗

Let's analyze the work from this problem.



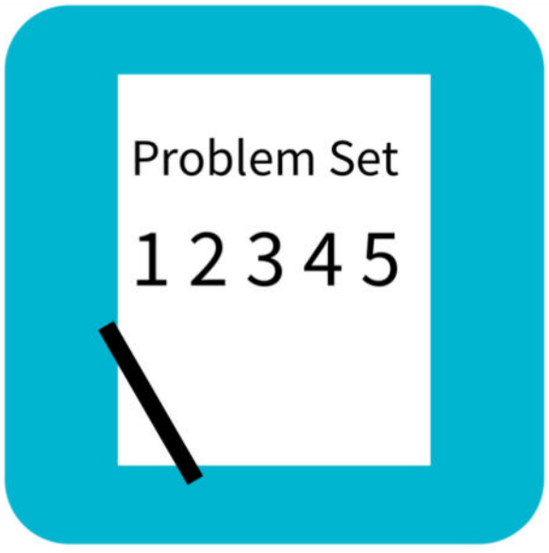


Subtract a fraction from a mixed number, decompose the minuend

Let’s practice!!

Class problem: 12 ¼ - ¾

Group problem: 7 3/10- 9/10



Problem Set

3. Decompose the total to subtract the fractions.

a. $3\frac{1}{8} - \frac{3}{8} = 2\frac{1}{8} + \frac{5}{8} = 2\frac{6}{8}$

$2\frac{1}{8}$ $\quad$ 1

b. $5\frac{1}{8} - \frac{7}{8}$

Debrief

- Use Problems 2(a) and 3(c) to compare the different methods to subtract when there are not enough fractional units.
- How is 7 tens 3 ones – 9 ones like 7 ones 3 tenths – 9 tenths? How is it different?
- Tell your partner the process of subtracting a fraction from a mixed number when regrouping is necessary.
- Here is another way to solve $3\frac{1}{5}-\frac{3}{5}$. A student wrote this (write $3\frac{1}{5}-\frac{3}{5}=3\frac{3}{5}-1=2\frac{3}{5}$). What was he thinking? (See the illustration of student's thinking below. Compare this method to whole number compensation such as 153 – 98 = 155 – 100.)

Exit Ticket

Name _____ Date _____

Solve.

1. $10\frac{5}{6} - \frac{4}{6}$