Eureka Math

4th Grade
Module 5
Lesson 4

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!

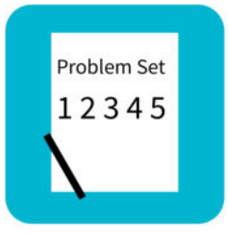
Directions for customizing presentations are available on the next slide.

Icons

Read, Draw, Write

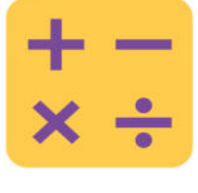
Learning Target

Personal White Board



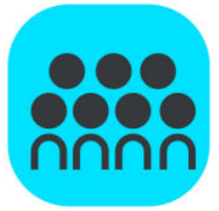
Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

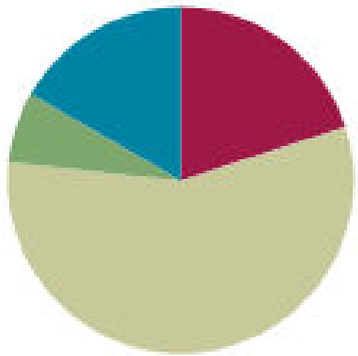
Small Group Time

Lesson 4

Objective: Decompose fractions into sums of smaller unit fractions using tape diagrams.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(4 minutes)
Concept Development	(34 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Decompose fractions into sums of smaller unit fractions using tape diagrams.

Break Apart

How many equal parts does this 1 have?

Say the value.

What fraction is shaded?

Write the value as a sum of unit fractions.

Complete the sentence: ___ x ⅓= ⅔

RDW

Application Problem

A recipe calls for $\frac{3}{4}$ cup of milk. Saisha only has a $\frac{1}{4}$-cup measuring cup. If she doubles the recipe, how many times will she need to fill the $\frac{1}{4}$ cup with milk? Draw a tape diagram, and record as a multiplication sentence.

Tape diagram to decompose unit fractions

Draw a tape diagram that represents 1, and shade 1/3 .
Decompose each third in half.
How many pieces do you have now?
What fraction does EACH part represent?
How many sixths are shaded?
What can we say about ⅓ and 2 sixths?
How can we tell?
Let’s write a number sentence to show this.

Tape diagram to decompose unit fractions

Let’s use the same tape diagram as before.
Now, decompose each sixth into 2 equal parts.
How many parts are in 1 row?
What fraction part of 1 does each piece represent?
How many twelfths equal ⅙?

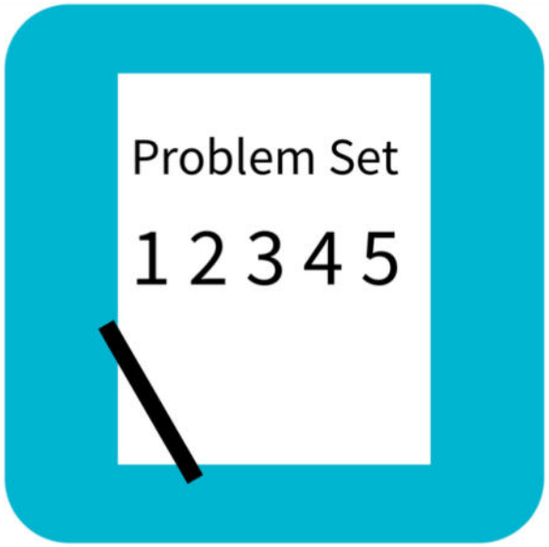
Tape diagram to decompose unit fractions

Draw a tape diagram and shade ⅕.
Decompose each fifth into 3 equal parts.
How many parts are there?
What do we call EACH part.
How many fifths equal ⅕?
Let’s write an equation to show this.
What can we say about ⅕ and 3/15?
With your partner, write as many number sentences as you can to show the equivalence of ⅕ and 3/15.

Tape diagram to decompose unit fractions

$$\frac{1}{12}+\frac{1}{12}+\frac{1}{12}+\frac{1}{12}=\frac{4}{12}.$$

Using what you just learned, how can you model to show that 2 sixths and 4 twelfths are equivalent?

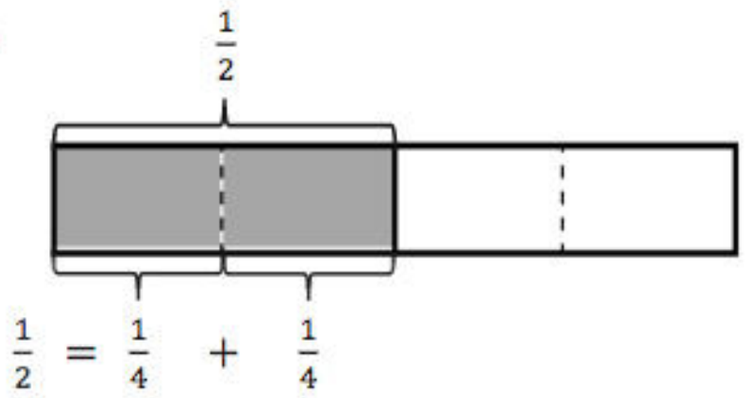


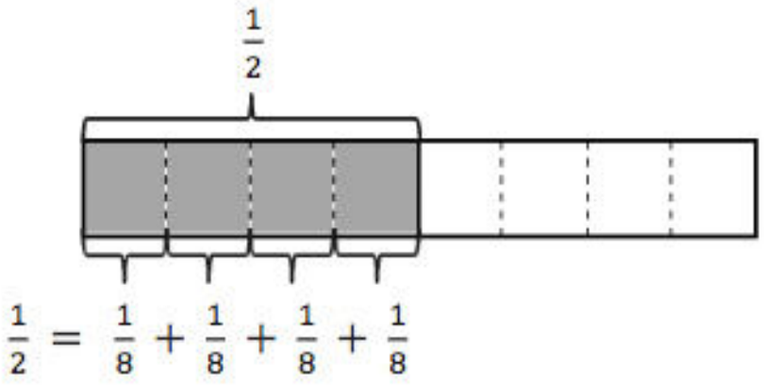
Problem Set

Name _____ Date _____

1. The total length of each tape diagram represents 1. Decompose the shaded unit fractions as the sum of smaller unit fractions in at least two different ways. The first one has been done for you.

a.





Debrief

- For Problem 1(a–d), what were some different ways that you decomposed the unit fraction?
- What is different about Problems 3(c) and 3(d)? Explain how fourths can be decomposed into both eighths and twelfths.
- For Problems 4, 5, and 6, explain the process you used to show equivalent fractions.
- Without using a tape diagram, what strategy would you use for decomposing a unit fraction?
- How did the Application Problem connect to today's lesson?

Exit Ticket

Name _____ Date _____

1. The total length of the tape diagram represents 1. Decompose the shaded unit fraction as the sum of smaller unit fractions in at least two different ways.