Eureka Math

4th Grade
Module 5
Lesson 20

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

RDW — Read, Draw, Write

Learning Target

Personal White Board

Problem Set 1 2 3 4 5 — Problem Set

Manipulatives Needed

Fluency

Think Pair Share
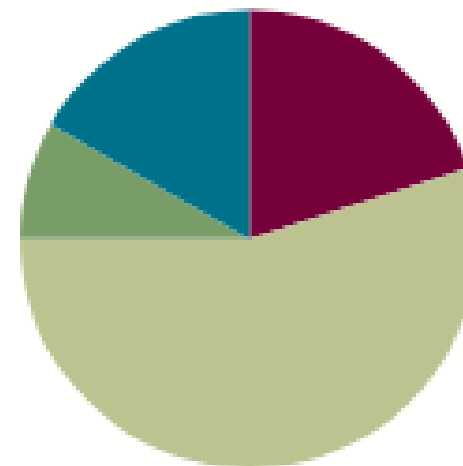
Whole Class

Individual

Partner

Small Group

Small Group Time

Lesson 20

Objective: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.

Suggested Lesson Structure

■	Fluency Practice	(12 minutes)
■	Application Problem	(5 minutes)
■	Concept Development	(33 minutes)
■	Student Debrief	(10 minutes)
	Total Time	**(60 minutes)**

Use visuals to add two fractions with related unts.

Count by...

Count by twos starting at 0 to 12.

Now count by 2 twelfths from 0 to 12 twelfths.

What is another name for 12/12?

What is another name for 6/12?

+ and - fractions

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

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

What did you notice

Can we keep it this way?

What MUST we do?!?!?!

Krista drank $\frac{3}{16}$ of the water in her water bottle in the morning, $\frac{5}{16}$ in the afternoon, and $\frac{3}{16}$ in the evening. What fraction of water was left at the end of the day?

Add unit fractions with related denominators

1 banana + 1 orange

Can we add those right now? Why?

What do bananas and oranges have in common?

That is important to keep in mind when we are adding fractions.

Add unit fractions with related denominators

⅓+⅙=

Can we add these right now? Why?
We need to rename one of the units.
Which one are we going to rename thirds or sixths.
What is thirds equivalent to as sixths?
Let's use a tape diagram to show this.
Now that we changed ⅓ into 2/6 we can add ⅙ to it.
I can show this on a tape diagram, number line, or area model.

Add unit fractions with related denominators

½ + ⅛=

Can we add right now?
Let's use a tape diagram to rename one of our fractions.
Which one will we rename? Why?
Now that we have 4/8 and ⅛ we can add these.
Use a model of your choice to show your thinking.

Add unit fractions with related denominators

Work with a partner and solve

⅔ +3/12

Add unit fractions with related denominators w/ a number line

⅙ + 3/12

Draw a number line and label the endpoints 0 and 1

Partition into sixths and plot ⅙.
We need to add 3/12, but we can't because they are not the same unit.
How can we partition the number line to show twelfths?

Add unit fractions with related denominators w/ a number line

Solve with your shoulder partner.

¾ + ⅝

Add unit fractions with related denominators w/ a model

⅖ + 3/10

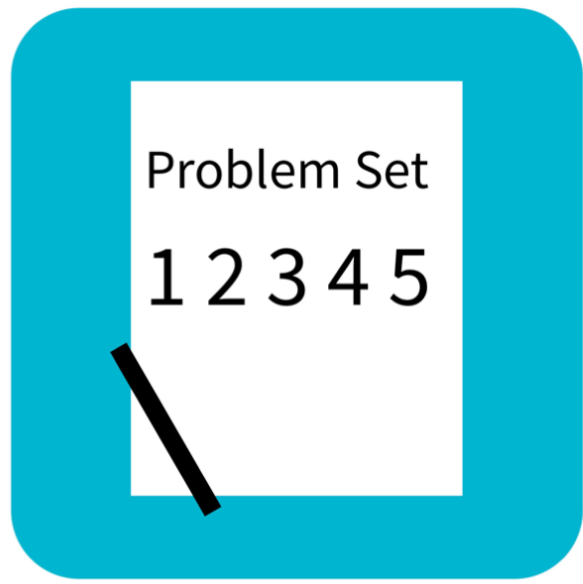What unit is easier to decompose, fifths or tenths?

Let's find an equivalent fraction using multiplication.
⅖ x 2/2 = 4/10

Now that we have common unit we can add.

Problem Set

Name _____   Date _____

1. Use a tape diagram to represent each addend. Decompose one of the tape diagrams to make like units. Then, write the complete number sentence. Part (a) is partially completed.

a. $\frac{1}{4} + \frac{1}{8}$

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

$$\frac{}{8} + \frac{}{8} = \frac{}{8}$$

c. $\frac{2}{6} + \frac{1}{3}$

d. $\frac{1}{2} + \frac{3}{8}$

Debrief

- For Problem 1(a–f), how was drawing tape diagrams helpful?

- In Problem 1(c), did you use sixths as the common denominator? Explain how thirds could be used as the common denominator.

- For Problem 2(a–f), how was drawing a number line helpful?

- For Problem 2(a–f), what strategies did you use to estimate if the sum would be between 0 and 1 or 1 and 2?

- Why is it important to have common denominators when adding fractions? Relate common denominators to adding with mixed units of measurement from Module 2. For example, add 3 meters to 247 centimeters.

- Explain to your partner how to determine the sum of two fractions without drawing a model. What strategies did you use?

- How did the Application Problem connect to today's lesson?

Exit Ticket

Name _____   Date _____

1. Draw a number line to model the addition. Solve, and then write a complete number sentence.

$$\frac{5}{8} + \frac{2}{4}$$