Eureka Math

4th Grade
Module 6
Lesson 13

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!

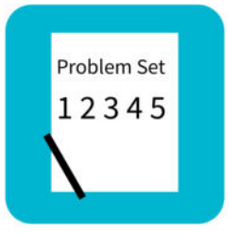
Directions for customizing presentations are available on the next slide.

Icons

Read, Draw, Write

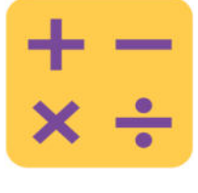
Learning Target

Personal White Board



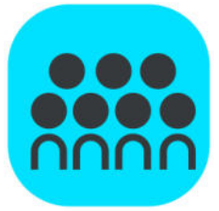
Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

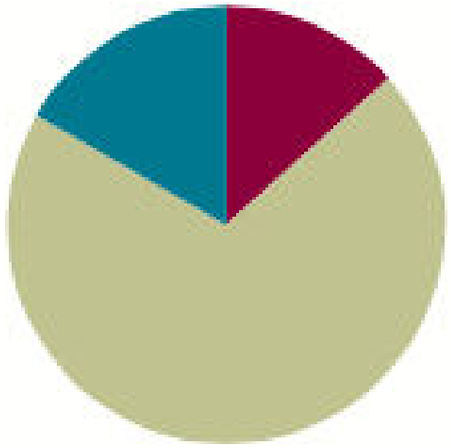
Small Group Time

Lesson 13

Objective: Add decimal numbers by converting to fraction form.

Suggested Lesson Structure

Fluency Practice	(8 minutes)
Concept Development	(42 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Add decimal numbers by converting to fraction form

Order Decimal Numbers

Arrange the numbers in order from least to greatest.

0.5 0.44 $\frac{1}{10}$ $\frac{16}{10}$ $\frac{65}{100}$ 0.6 0.55 0.87 0.1 0.77 0.88

$\frac{87}{100}$ $\frac{68}{100}$ $\frac{680}{100}$ 6 ones and 8 hundredths 8 and 6 tenths 6.86

Write in Decimal and Fraction Notation

25.34 Say the number.

Write 25 and 34 hundredths in decimal expanded form without multiplication.

$$20 + 5 + 0.3 + 0.04$$

Write 25 and 34 hundredths in decimal expanded form with multiplication.

$$25.34 = (2 \times 10) + (5 \times 1) + (3 \times 0.1) + (4 \times 0.01)$$

Write 25 and 34 hundredths in fraction expanded form with multiplication.

$$25.34 = (2 \times 10) + (5 \times 1) + \left(3 \times \frac{1}{10}\right) + \left(4 \times \frac{1}{100}\right)$$

Add two decimal numbers less than 1 by converting to fraction form.

Say the expression: 0.3 + 0.57

Let's use what we know to add. Convert 3 tenths + 57 hundredths to fraction form.

$\frac{3}{10}+\frac{57}{100}$ Solve. $\frac{3}{10}=\frac{30}{100}$. So, $\frac{30}{100}+\frac{57}{100}=\frac{87}{100}$

Write your answer as a decimal. 0.87

Add two decimal numbers less than 1 by converting to fraction form.

Say the expression: 0.5 + 0.64

Let's use what we know to add. Convert to fraction form.

$$\frac{5}{10} = \frac{50}{100}. \text{ So, } \frac{50}{100} + \frac{64}{100} = \frac{114}{100}$$

I noticed that the answer is more than 1. What should I do?

The answer is 1.14 or $1\frac{14}{100}$.

Add two decimal numbers less than 1 by converting to fraction form.

Say the expression: 0.30 + 0.5

Let's use what we know to add. Convert to fraction form.

Share your answer and explain your thinking.

$0.30 = \frac{30}{100}$. $0.5 = \frac{5}{10} = \frac{50}{100}$. So, $\frac{30}{100} + \frac{50}{100} = \frac{80}{100}$. $\frac{80}{100}$ is the same as $\frac{8}{10}$

I converted hundredths to tenths before adding. $\frac{30}{100} = \frac{30 \div 10}{100 \div 10} = \frac{3}{10}$. So, $\frac{3}{10} + \frac{5}{10} = \frac{8}{10} = 0.8$.

Add two decimal numbers involving whole numbers and like fractional units by convertin to fractional form.

6.8 + 5.7

Rewrite this expression as the sum of two mixed numbe...

$$6\frac{8}{10}+5\frac{7}{10}$$

What do you know about mixed number addition to help you solve this problem?

Solve with your partner. Rewrite the number sentence in decimal form.

$$6.8 + 5.7 = 6\frac{8}{10} + 5\frac{7}{10}$$

$$= 11\frac{15}{10} = 12\frac{5}{10}$$

$1 \quad \frac{5}{10}$

$6.8 + 5.7 = 12.5$

$$6\frac{8}{10}+5\frac{7}{10}=(6+5)+\left(\frac{8}{10}+\frac{7}{10}\right)=11\frac{15}{10}=12\frac{5}{10}$$

Add two decimal numbers involving whole numbers and like fractional units by convertin to fractional form.

4.28 + 2.97

Rewrite this expression as the sum of two mixed numbers.

Solve with your partner. Rewrite the number sentence in decimal form.

$$4.28 + 2.97 = 4\frac{28}{100} + 2\frac{97}{100}$$

$$= 6\frac{125}{100} = 7\frac{25}{100}$$

$$1 \quad \frac{25}{100}$$

$$4.28 + 2.97 = 7.25$$

Add two decimal numbers involving whole numbers, tenths, and hundredths with unlike units by converting to fractional form.

3.5 + 2.49

Convert this expression to fraction form as the sum of two mixed numbers.

$$3\frac{5}{10}+2\frac{49}{100}$$

Solve with your partner. Rewrite the number sentence in decimal form.

$$3\frac{50}{100}+2\frac{49}{100}=5\frac{50}{100}+\frac{49}{100}=5\frac{99}{100}.$$

$$3.5 + 2.49 = 5.99$$

$3.5 + 2.49 = 3\frac{50}{100} + 2\frac{49}{100}$

$= 5\frac{50}{100} + \frac{49}{100}$

$= 5\frac{99}{100}$

$3.5 + 2.49 = 5.99$

Add two decimal numbers involving whole numbers, tenths, and hundredths with unlike units by converting to fractional form.

5.6 + 4.53

Convert this expression to fraction form as the sum of two mixed numbers. Rewrite the expression in decimal form.

Talk about the solutions shown below. Compare them to your strategy.

$5.6 + 4.53 = 5\frac{6}{10} + 4\frac{53}{100}$

$= 5\frac{60}{100} + 4\frac{53}{100}$

$= 9\frac{60}{100} + \frac{53}{100}$

$= 9\frac{113}{100}$

$1 \quad \frac{13}{100}$

$= 10\frac{13}{100}$

$5.6 + 4.53 = 10.13$

$5.6 + 4.53 = 5\frac{6}{10} + 4\frac{53}{100}$

$\frac{4}{10} \quad \frac{13}{100}$

$= 9 + 1 + \frac{13}{100}$

$= 10\frac{13}{100}$

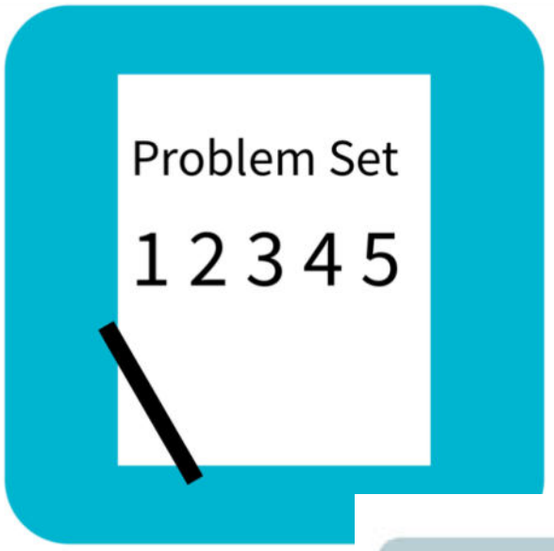
$5.6 + 4.53 = 10.13$

$5.6 + 4.53 = 5\frac{60}{100} + 4\frac{53}{100}$

$\frac{40}{100} \quad \frac{13}{100}$

$= 10\frac{13}{100}$

$5.6 + 4.53 = 10.13$



Problem Set

Name _____ Date _____

1. Solve. Convert tenths to hundredths before finding the sum. Rewrite the complete number sentence in decimal form. Problems 1(a) and 1(b) are partially completed for you.

a. $2\frac{1}{10}+\frac{3}{100}=2\frac{10}{100}+\frac{3}{100}=$ _____ $2.1+0.03=$ _____	b. $2\frac{1}{10}+5\frac{3}{100}=2\frac{10}{100}+5\frac{3}{100}=$ _____
c. $3\frac{24}{100}+\frac{7}{10}$	d. $3\frac{24}{100}+8\frac{7}{10}$

Debrief

- Explain to your partner the process of adding two mixed numbers. Why do we need to convert to like units?
- What other conversion could you have used for Problems 2(a) and 2(c)?
- For Problems 2(b) and 2(d), explain how in the solution you could make 1 before adding the hundredths together.
- What was the added complexity of Problem 2 in the Problem Set? How did your prior knowledge of adding mixed numbers from Module 5 help to make this task easier?

Exit Ticket

Name _____ Date _____

Solve by rewriting the number sentence in fraction form. After solving, rewrite the complete number sentence in decimal form.

1. 7.3 + 0.95