Eureka Math

4th Grade
Module 6
Lesson 8

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

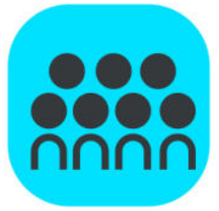
Personal White Board

Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

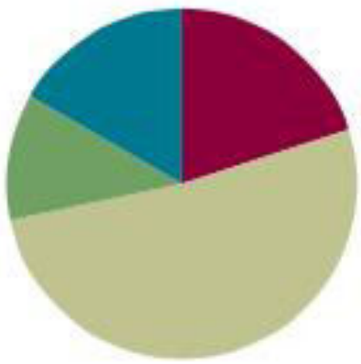
Small Group Time

Lesson 8

Objective: Use understanding of fraction equivalence to investigate decimal numbers on the place value chart expressed in different units.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(7 minutes)
Concept Development	(31 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Use understanding of fraction equivalence to investigate decimal numbers on the place value chart expressed in different units.

Sprint

A

Number Correct: _____

Write Fractions and Decimals

1.	$\frac{3}{10}$ =	.
2.	$\frac{3}{100}$ =	.
3.	$\frac{23}{100}$ =	.
4.	$1\frac{23}{100}$ =	.
5.	$4\frac{23}{100}$ =	.
6.	0.07 =	—
7.	1.07 =	—
8.	0.7 =	—
9.	1.7 =	—
10.	1.74 =	—
11.	$\frac{4}{100}$ =	.
12.	0.6 =	—

23.	$2+\frac{1}{10}+\frac{6}{100}$ =	.
24.	2 + 0.1 + 0.06 =	.
25.	3 + 0.1 + 0.06 =	.
26.	3 + 0.1 + 0.04 =	.
27.	3 + 0.5 + 0.04 =	.
28.	2 + 0.3 + 0.08 =	.
29.	2 + 0.08 =	.
30.	1 + 0.3 =	.
31.	10 + 0.3 =	.
32.	1 + 0.4 + 0.06 =	.
33.	10 + 0.4 + 0.06 =	.
34.	30 + 0.7 + 0.02 =	.

Expanded Form

$4\frac{17}{100}$ Write 4 and 17 hundredths in expanded fraction form without multiplication

$$4\frac{17}{100} = 4 + \frac{1}{10} + \frac{7}{100}$$

Write 4 and 17 hundredths in expanded decimal form without multiplication

$$4.17 = 4 + 0.1 + 0.07$$

Application Problem

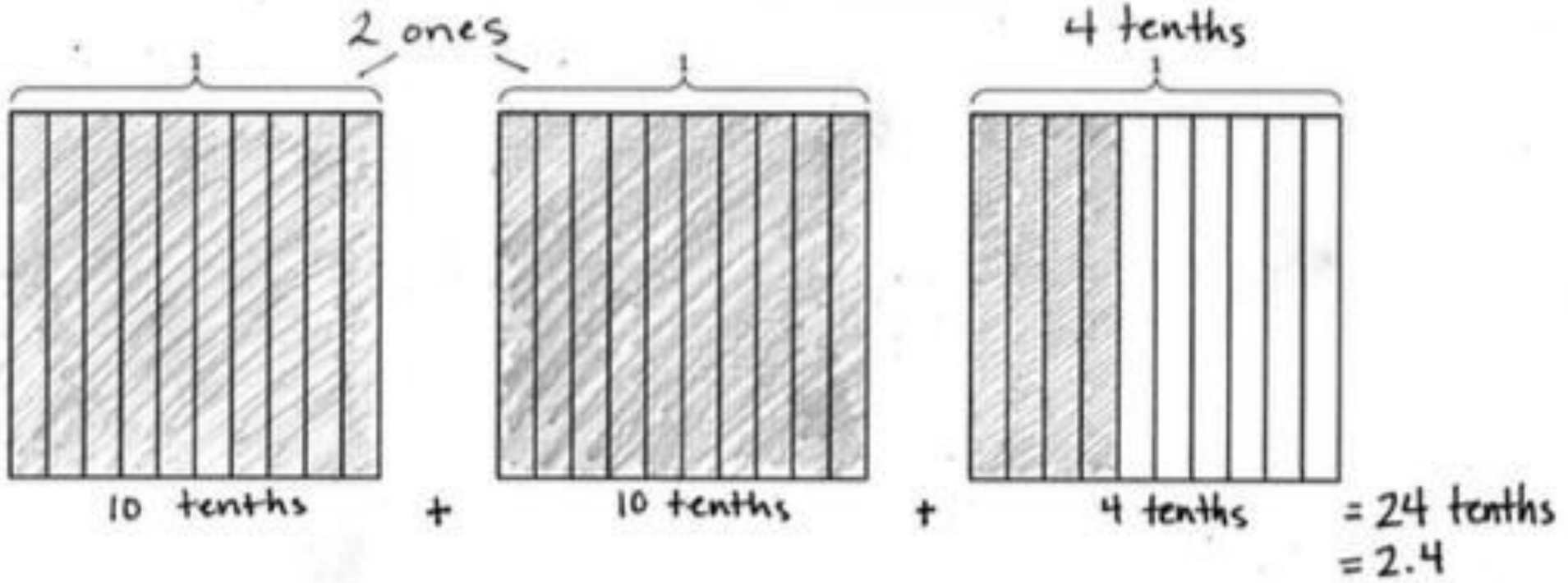
Jashawn had 5 hundred dollar bills and 6 ten dollar bills in his wallet. Alva had 58 ten dollar bills under her mattress. James had 556 one dollar bills in his piggy bank. They decide to combine their money to buy a computer. Express the total amount of money they have using the following bills:

a) Hundreds, tens, and ones
b) Tens and ones
c) ones

Represent numbers in unit form in terms of different units using the area model.

Use the Area models/Place Value Chart template

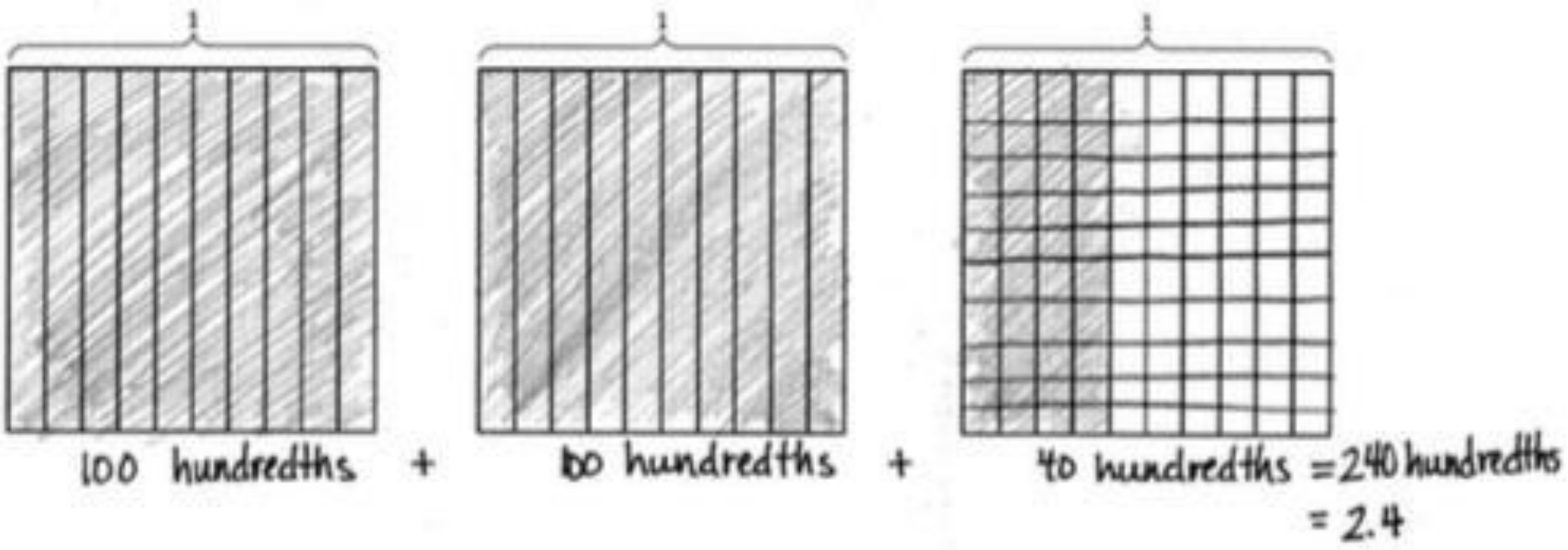
Show 2 ones 4 tenths shaded on the area model.



Represent numbers in unit form in terms of different units using the area model.

Shade 2 ones 40 hundredths on the next area model.

Record an addition sentence in unit form that tells how many hundredths are shaded.



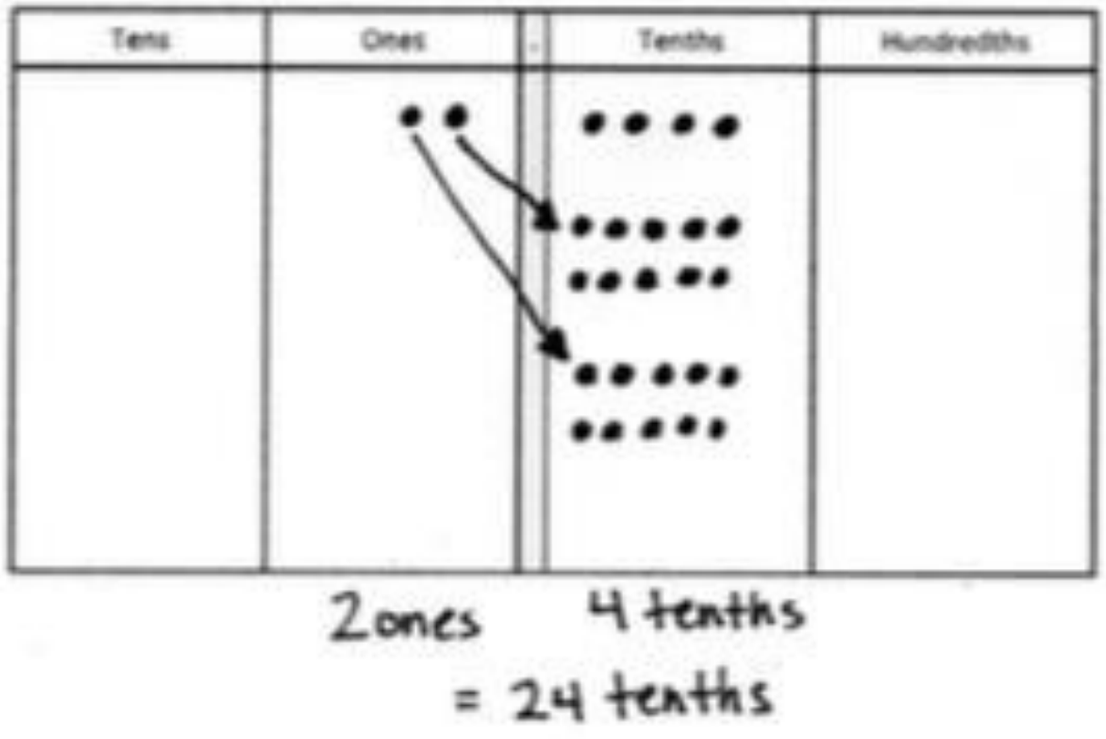
What decimal number is 240 hundredths equal to?

Represent numbers in unit form in terms of different units using place value disks.

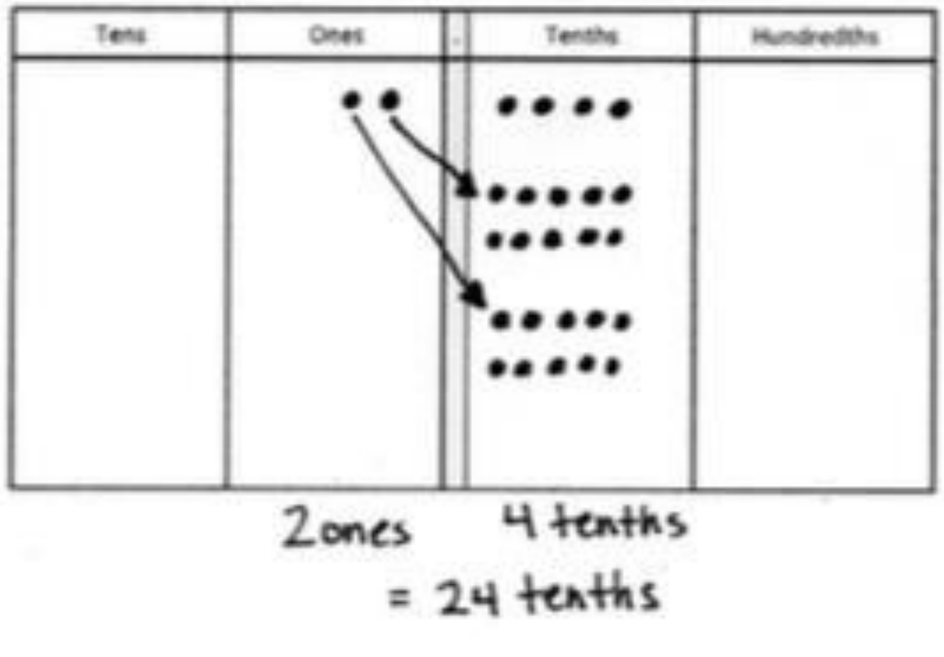
Represent 2 as tenths. How many tenths are in 2 ones?

Show 2 ones 4 tenths on your place value chart using number disks. Express the number in unit form as shown on the chart.

Decompose the 2 ones and express them as tenths.



Represent numbers in unit form in terms of different units using place value disks.



How can I express 24 tenths as hundredths?

Decomposing tenths to hundredths is too many disks to draw!

Let's solve without drawing place value disks.

- 1 tenth equals how many hundredths?
- 2 tenths is equivalent to how many hundredths?

How many hundredths in 24 tenths?
Write the equivalent fraction and decimal.

$\frac{240}{100}$ 2.40 or 2.4

Decompose mixed numbers to express as smaller units.

3.6

Say this decimal.

How many tenths are in 3 ones?

How many tenths are in 3.6?

In fraction and unit form, write how many tenths are equal to 3.6

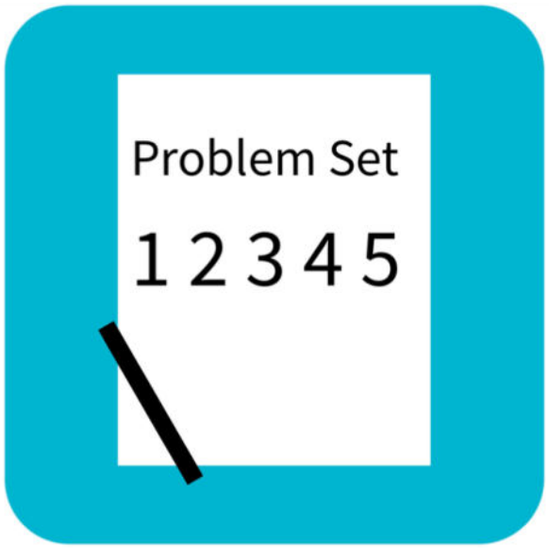
$$3.6 = 36 \text{ tenths} = \frac{36}{10}$$

How many hundredths are in 3 ones?

How many hundredths are in 3.6?

In fraction and unit form, write how many hundredths are equal to 3.6

$$3.6 = 360 \text{ hundredths} = \frac{360}{100}$$

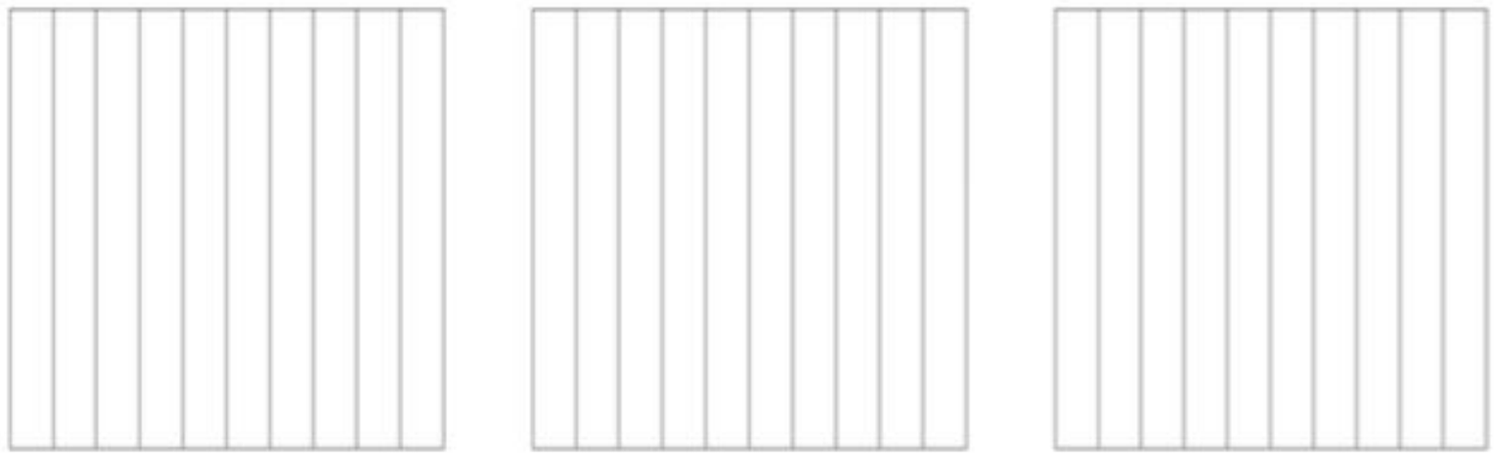


Problem Set

Name _____ Date _____

1. Use the area model to represent $\frac{250}{100}$. Complete the number sentence.

   a. $\frac{250}{100}$ = _____ tenths = _____ ones _____ tenths = __.____



   b. In the space below, explain how you determined your answer to part (a).

Debrief

- Explain why the area model in Problem 1 is a good tool for representing the decimal fraction. How does it help to determine the equivalent decimal number?
- How did drawing the place value disks in Problem 2 help you to understand decomposing from one unit to another?
- How did solving Problem 3 help you to solve Problem 4?
- What strategies did you use when completing the chart in Problem 5? Did you complete one column at a time or one row at a time? Which columns were especially helpful in completing other columns?
- How is decomposing hundreds to tens or tens to ones similar to decomposing ones to tenths or tenths to hundredths?
- When decomposing numbers on the place value chart, each column to the right of another shows 10 times as many parts. Explain why this is so. Even though we have 10 times as many parts, we are really dividing. Explain.
- How did the Application Problem connect to today's lesson?

Exit Ticket

Name _____ Date _____

1. a. Draw place value disks to represent the following decomposition:

3 ones 2 tenths = _____ tenths

ones	.	tenths	hundredths

b. 3 ones 2 tenths = _____ hundredths