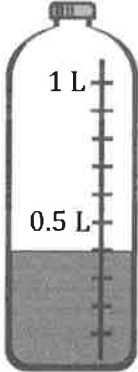# Grade 4
Module 6

G4-M6-Lesson 1

1. Shade the bottle to show the correct amount. Write the total amount of water in fraction form.

The bottle has a vertical number line, partitioning 1 liter into 10 tenths liter.

1 L

0.5 L

$$\frac{4}{10} \text{ L} = 0.4 \text{ L}$$

This is a decimal number. I read it just as I read the fraction: four tenths liter.

2. Write the weight of the pineapple on the scale in fraction form.

I can read the weight of the pineapple two ways: zero point nine kilograms or nine tenths kilogram.

$$\frac{9}{10} \text{ kg}$$

3. Fill in the blank to make the sentence true in both fraction form and decimal form.

$$\frac{3}{10} \text{ cm} + \underline{\frac{7}{10}} \text{ cm} = 1 \text{ cm}$$

$$0.3 \text{ cm} + \underline{0.7} \text{ cm} = 1.0 \text{ cm}$$

$\frac{10}{10}$ cm is equal to 1 cm.

To find pairs of tenths that make 1.0 cm, I think of partners to 10, like 3 and 7, and 9 and 1.

EUREKA MATH

Lesson 1:   Use metric measurement to model the decomposition of one whole into tenths.

1

©2015 Great Minds. eureka-math.org
G4-M1-HWH-1.3.0-07.2015

G4-M6-Lesson 2

1. For the length given below, draw a line segment to match. Express the measurement as an equivalent mixed number.

   2.7 cm

   0 cm   1 cm   2 cm 2.7 cm

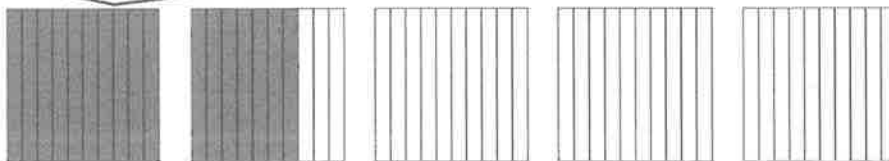 $2.7 \text{ cm} = 2\frac{7}{10} \text{ cm}$

   | I can express a decimal as a mixed number. The decimal and fractional part for this number have the unit *tenths*. |

   | I draw a 2 cm line, then extend it $\frac{7}{10}$ cm. |

2. Write the following in decimal form. Then, model and rename the number.

   a. 1 one and 7 tenths = __1.7__

   | Each rectangle represents 1. There are 10 tenths in 1. |

   | I shade 17 tenths to show 1.7. |

   $1\frac{7}{10} = 1 + \frac{7}{10} = 1 + 0.7 = 1.7$

   b. $\frac{22}{10} =$ __2.2__

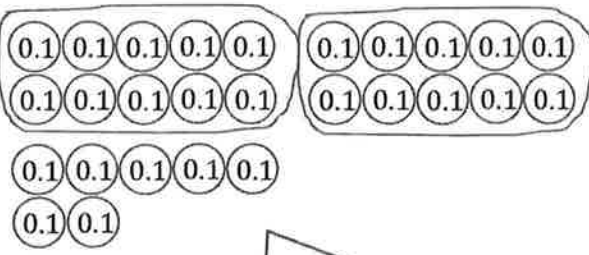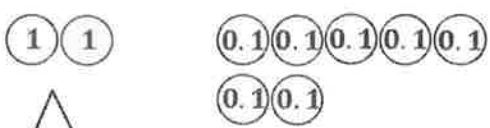 | There are 5 rectangles representing 5 ones in all. |

   | I use a number bond to decompose the whole and the fraction. 20 tenths is equal to 2 ones. |

   $\frac{22}{10} = 2\frac{2}{10} = 2 + \frac{2}{10} = 2 + 0.2 = 2.2$
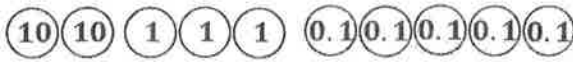
   $\frac{20}{10}$ $\frac{2}{10}$

   How much more is needed to get to 5? __2 ones 8 tenths__

Lesson 2:   Use metric measurement and area models to represent tenths as fractions greater than 1 and decimal numbers.

EUREKA MATH

G4-M6-Lesson 3

1. Circle groups of tenths to make as many ones as possible.

How many tenths in all?	Write and draw the same number using ones and tenths.
(0.1)(0.1)(0.1)(0.1)(0.1) (0.1)(0.1)(0.1)(0.1)(0.1) (0.1)(0.1)(0.1)(0.1)(0.1) (0.1)(0.1)(0.1)(0.1)(0.1) (0.1)(0.1)(0.1)(0.1)(0.1) (0.1)(0.1) I count 27 units of 1 tenth.	(1)(1) (0.1)(0.1)(0.1)(0.1)(0.1) (0.1)(0.1) **Just like 10 dimes makes 1 dollar, I bundle 10 tenths to make 1 one.** **Arranging my disks into 5-groups helps me quickly know how many more to make ten tenths.** Decimal Form: __2.7__
There are __27__ tenths.	How much more is needed to get to 3? __0.3__

2. Draw disks to represent 2 tens 3 ones 5 tenths using tens, ones, and tenths. Then, show the expanded form of the number in fraction form and decimal form.

$$(10)(10) \ (1)(1)(1) \ (0.1)(0.1)(0.1)(0.1)(0.1)$$

$$(2 \times 10) + (3 \times 1) + \left(5 \times \frac{1}{10}\right) = 23\frac{5}{10}$$

I write a multiplication expression for the value of each digit in $23\frac{5}{10}$.

$$(2 \times 10) + (3 \times 1) + (5 \times 0.1) = 23.5$$

I can write in decimal form. Zero point one is another way to write 1 tenth.

3. Complete the chart.

Number Line	Decimal Form	Mixed Number (ones and fraction form)	Expanded Form (fraction or decimal form)	How much to get to the next one?
19 ‹——•—————› 20	19.3	$19\frac{3}{10}$	$(1 \times 10) + (9 \times 1) + \left(3 \times \frac{1}{10}\right)$	$\frac{7}{10}$

The number line is partitioned into 10 equal parts. To find the endpoints, I ask myself, "Between what two whole numbers is $19\frac{3}{10}$?"

Lesson 3:   Represent mixed numbers with units of tens, ones, and tenths with
number disks, on the number line, and in expanded form.

EUREKA MATH

G4-M6-Lesson 4

> 1 meter equals 100 centimeters. When a meter is decomposed into 10 equal parts, 1 part equals $\frac{1}{10}$ meter or 10 centimeters.

1.
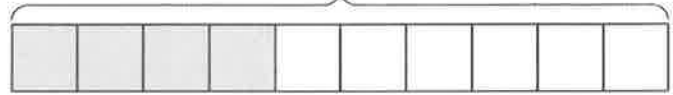
   1 meter

   a. What is the length of the shaded part of the meter stick in centimeters?

   40 centimeters

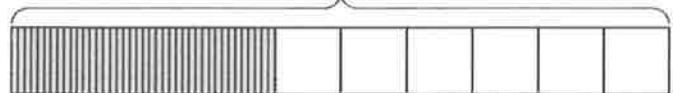   b. What fraction of a meter is 4 centimeters?

   $\frac{4}{100}$ meter

   > Each tenth of a meter would need to be decomposed into 10 equal parts to show all 100 centimeters in 1 meter. To represent 4 centimeters, I would shade 4 of the 100 parts.

   c. What fraction of a meter is 40 centimeters?

   $\frac{4}{10}$ meter or $\frac{40}{100}$ meter

   1 meter

2. Fill in the blank.

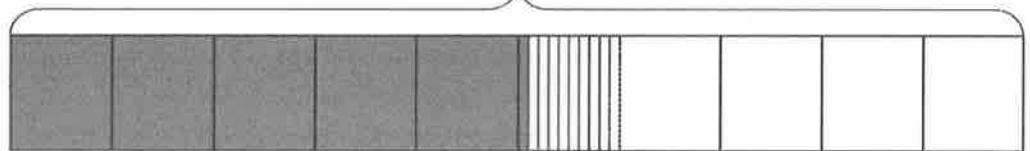 $$\frac{3}{10}\text{m} = \frac{30}{100}\text{m}$$

   > 1 out of 100 centimeters is 1 hundredth centimeter.

3. On the meter stick, shade in the amount shown. Then, write the equivalent decimal.
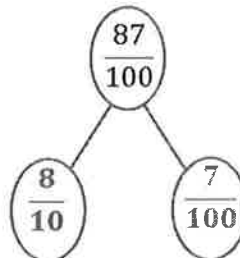
   $$\frac{51}{100}\text{m} = 0.51\text{ m}$$

   1 meter

   $\frac{5}{10}$ $\frac{1}{100}$

   > I shade 5 tenths of a meter. After partitioning the next tenth meter into 10 equal parts, I shade 1 hundredth meter more.

4. Draw a number bond, pulling out the tenths from the hundredths. Write the total as the equivalent decimal.

   $\frac{87}{100}$ 0.87

   $\frac{8}{10}$ $\frac{7}{100}$

   > 8 tenths is the same as 80 hundredths.

   > I can decompose a fraction like I decompose a whole number. I break 87 hundredths into 80 hundredths and 7 hundredths.

EUREKA MATH   Lesson 4:   Use meters to model the decomposition of one whole into hundredths. Represent and count hundredths.   5

©2015 Great Minds. eureka-math.org
G4-M1-HWH-1.3.0-07.2015

G4-M6-Lesson 5

1. Find the equivalent fraction using multiplication or division. Shade the area models to show the equivalency. Record it as a decimal.

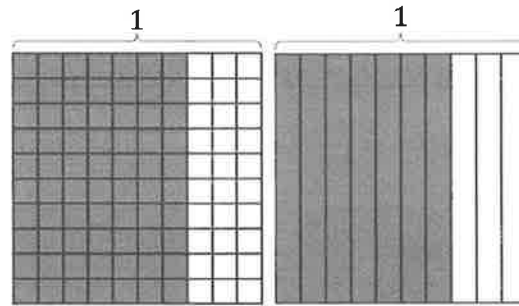a. $\dfrac{1 \times 10}{10 \times 10} = \dfrac{10}{100}$

> I multiply the number of tenths by 10 to get the number of hundredths.

b. $\dfrac{70 \div 10}{100 \div 10} = \dfrac{7}{10}$

> I divide the number of hundredths by 10 to get the number of tenths.
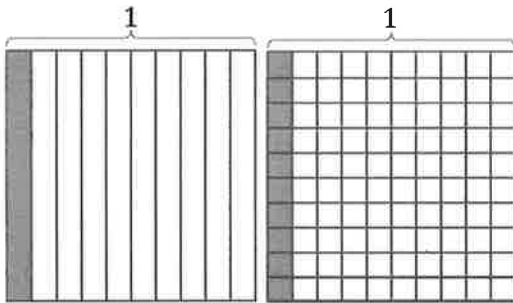
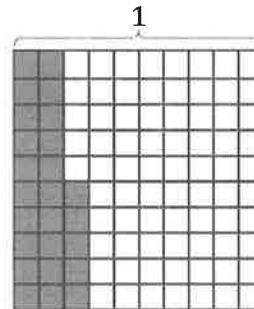> There are 10 times as many hundredths as there are tenths.

> $\dfrac{7}{10}$ and $\dfrac{70}{100}$ are equivalent fractions.

2. Complete the number sentence. Shade the equivalent amount on the area model, drawing horizontal lines to make hundredths.
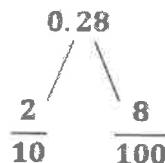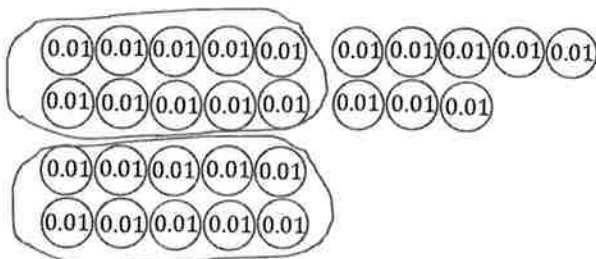
a. 25 hundredths = __2__ tenths + __5__ hundredths

b. Decimal Form: __0.25__

c. Fraction Form: $\dfrac{25}{100}$

Lesson 5:   Model the equivalence of tenths and hundredths using the area model and number disks.

EUREKA
MATH

3. Circle hundredths to compose as many tenths as you can. Complete the number sentence. Represent the composition with a number bond.

(0.01)(0.01)(0.01)(0.01)(0.01) (0.01)(0.01)(0.01)(0.01)(0.01)
(0.01)(0.01)(0.01)(0.01)(0.01) (0.01)(0.01)(0.01)

(0.01)(0.01)(0.01)(0.01)(0.01)
(0.01)(0.01)(0.01)(0.01)(0.01)

0.28
   /   \
  $\frac{2}{10}$ $\frac{8}{100}$

> I compose 10 hundredths to make 1 tenth because $\frac{1}{10} = \frac{10}{100}$.

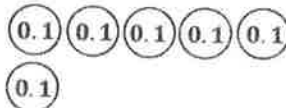__28__ hundredths = __2__ tenths + __8__ hundredths

4. Use both tenths and hundredths place value disks to represent each number. Write the equivalent number in decimal, fraction, and unit form.

a. $\frac{54}{100} = 0.54$

(0.1)(0.1)(0.1)(0.1)(0.1)   (0.01)(0.01)(0.01)(0.01)

__54__ hundredths

b. $\frac{60}{100} = 0.60$

(0.1)(0.1)(0.1)(0.1)(0.1)
(0.1)

> Since I know that $\frac{6}{10} = \frac{60}{100}$, it is more efficient to show 6 tenths than 60 hundredths.
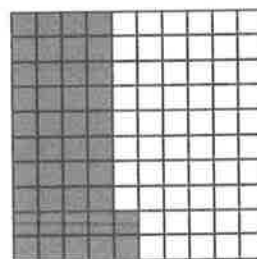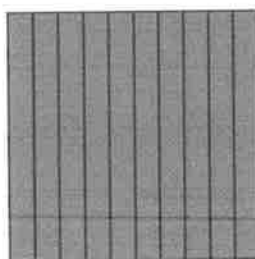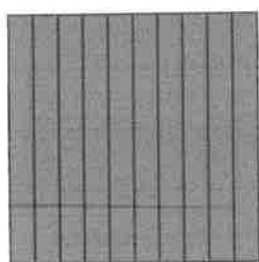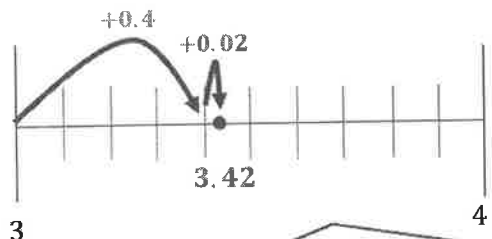
60 hundredths

G4-M6-Lesson 6

1. Shade the area models to represent the number, drawing horizontal lines to make hundredths as needed. Locate the corresponding point on the number line. Label with a point, and record the mixed number as a decimal.

$3\frac{42}{100} = \underline{3.42}$

> There are 3 ones in $3\frac{42}{100}$. I shade 3 area models completely.

> I shade 42 hundredths after drawing horizontal lines to decompose tenths into hundredths.

+0.4
+0.02

3.42

3   4

> To find 3.42 on the number line, I begin with the largest unit. I start at 3 ones. I slide 4 tenths. Then, I estimate where 2 hundredths would be.

2. Write the equivalent fraction and decimal for the following number.

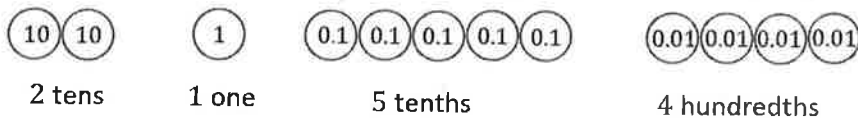9 ones 7 hundredths

$9\frac{7}{100}$ 9.07

> There are no tenths in this number! I show that with a zero as a placeholder.

> To write a decimal number, I place a decimal point between the ones and the fraction.

EUREKA
MATH

G4-M6-Lesson 7

1. Write a decimal number sentence to identify the total value of the place value disks.

(10)(10)   (1)   (0.1)(0.1)(0.1)(0.1)(0.1)   (0.01)(0.01)(0.01)(0.01)

   2 tens   1 one   5 tenths   4 hundredths

  __20__ + __1__ + __0.5__ + __0.04__ = __21.54__

> I write the expanded form.

2. Use the place value chart to answer the following questions. Express the value of the digit in unit form.

hundreds	tens	ones	.	tenths	hundredths
3	5	1	.	8	2

a. The digit __3__ is in the hundreds place. It has a value of __3 hundreds__.

> I write the value of 300 in unit form.

b. The digit __5__ is in the tens place. It has a value of _5 tens_.

3. Write the decimal as an equivalent fraction. Then, write the number in expanded form, using both decimal and fraction notation.

| Decimal and Fraction Form	Expanded Form	
	Fraction Notation	**Decimal Notation**
$27.03 = 27\dfrac{3}{100}$	$(2 \times 10) + (7 \times 1) + \left(3 \times \dfrac{1}{100}\right)$ $20 \;+\; 7 \;+\; \dfrac{3}{100}$	$(2 \times 10) + (7 \times 1) + (3 \times 0.01)$ $20 \;+\; 7 \;+\; 0.03$
$400.80 = 400\dfrac{80}{100}$	$(4 \times 100) + \left(8 \times \dfrac{1}{10}\right)$ $400 \;+\; \dfrac{8}{10}$	$(4 \times 100) + (8 \times 0.1)$ $400 \;+\; 0.8$

> This number has many zeros! There are values in the hundreds and tenths place that I show as addends in the expressions.

> Expanded form can be written two ways. Using parentheses, I show how the value of each digit is a multiple of a base-ten unit (e.g., 4×100). Or, I show the value of each digit (e.g., 400).

EUREKA MATH™

Lesson 7:   Model mixed numbers with units of hundreds, tens, ones, tenths, and hundredths in expanded form and on the place value chart.

G4-M6-Lesson 8

1. Use the area model to represent $\frac{140}{100}$. Complete the number sentence.

$\frac{140}{100} = \underline{14}$ tenths $= \underline{1}$ one $\underline{4}$ tenths $= \underline{1.4}$
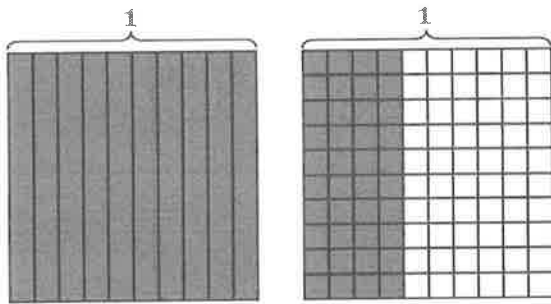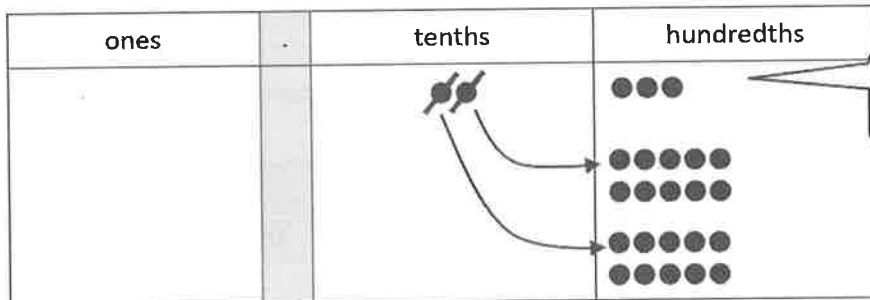
> I can draw horizontal lines to show hundredths. 1 one equals 10 tenths or 100 hundredths. 4 tenths equals 40 hundredths.

> I shade 14 tenths. My model shows that 14 tenths is the same as 1 one and 4 tenths.

2. Draw place value disks to represent the following decomposition:

2 tenths 3 hundredths $= \underline{23}$ hundredths

ones	.	tenths	hundredths

> I start by showing 2 tenths 3 hundredths.

> I decompose 2 tenths as 20 hundredths.

Lesson 8:   Use understanding of fraction equivalence to investigate decimal numbers on the place value chart expressed in different units.   **EUREKA MATH**

3. Decompose the units to represent each number as tenths.

   a. 1.3 = __**13**__ tenths

   b. 18.3 = __**183**__ tenths

4. Decompose the units to represent each number as hundredths.

   a. 1.3 = __**130**__ hundredths

   b. 18.3 = __**1,830**__ hundredths

> I notice a pattern! There are 10 times as many hundredths as tenths.

5. Complete the chart.

Decimal	Mixed Number	Tenths	Hundredths
8.2	$8\frac{2}{10}$	82 *tenths* $\dfrac{82}{10}$	820 *hundredths* $\dfrac{820}{100}$

> I write tenths and hundredths in both fraction and unit form.

EUREKA MATH

Lesson 8:   Use understanding of fraction equivalence to investigate decimal numbers on the place value chart expressed in different units.

©2015 Great Minds. eureka-math.org
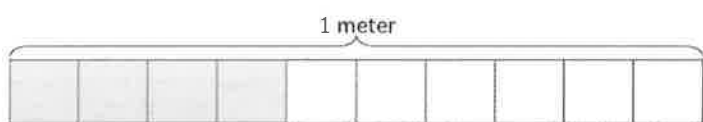G4-M1-HWH-1.3.0-07.2015

11

G4-M6-Lesson 9

1. Express the lengths of the shaded parts in decimal form. Write a sentence that compares the two lengths. Use the expression *shorter than* or *longer than* in your sentence.
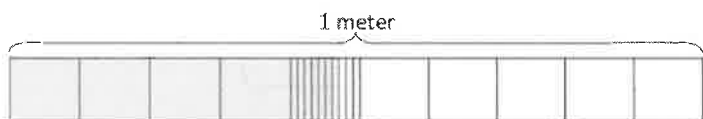
1 meter

0.47

> I know that $0.47 = 4$ tenths 7 hundredths.

1 meter

0.4

> I know that $0.4 = 4$ tenths.

0.47 meter is longer than 0.4 meter.

> Both numbers have 4 tenths. 0.47 meter is longer because it has an additional 7 hundredths. I can see that by looking at the tape diagrams.

2. Examine the mass of each item as shown below on the 1-kilogram scales. Put an X over the items that are lighter than the bananas.

0.2 kg   0.12 kg   0.6 kg   0.61 kg

> $0.2 = 2$ tenths
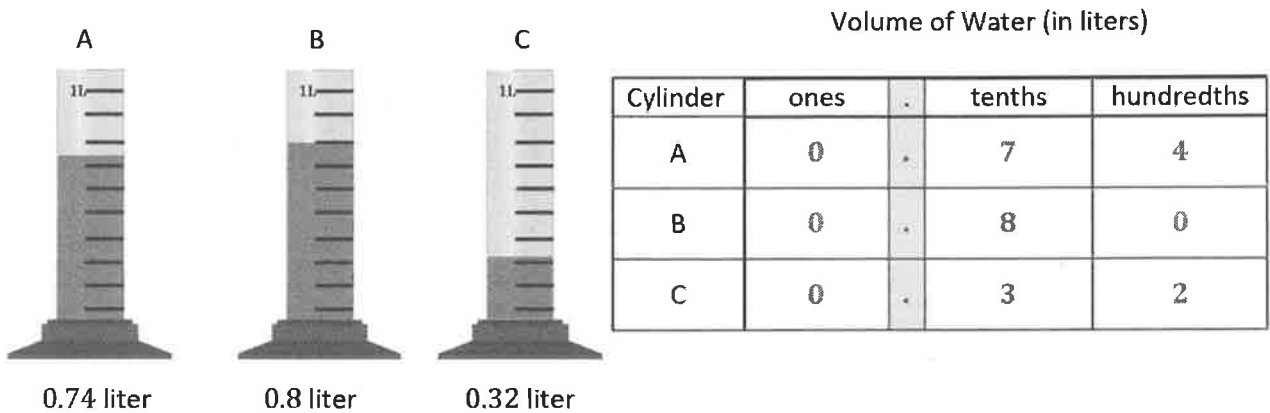
> $0.12 = 1$ tenth 2 hundredths

> $0.6 = 6$ tenths

> $0.61 = 6$ tenths 1 hundredth

> I compare by looking at the largest place value unit in the mass of each item. The largest unit in each item is tenths. The avocado and the apple have fewer tenths than the bananas. The grapes have the same number of tenths, but they also have 1 more hundredth. The grapes are heavier than the bananas.

Lesson 9: Use the place value chart and metric measurement to compare decimals and answer comparison questions.

EUREKA MATH

3. Record the volume of water in each graduated cylinder on the place value chart below.

Cylinder	ones	.	tenths	hundredths
A	0	.	7	4
B	0	.	8	0
C	0	.	3	2

Volume of Water (in liters)

A — 0.74 liter
B — 0.8 liter
C — 0.32 liter

Compare the values using $>$, $<$, or $=$.

a.   0.74 L __>__ 0.32 L

b.   0.32 L __<__ 0.8 L

c.   0.8 L __>__ 0.74 L

> I look at the pictures and the completed table to help me compare the values. Tenths are the largest unit in each number, so I can compare the number of tenths in each number to determine which is greater and which is less.

d.   Write the volume of water in each graduated cylinder in order from least to greatest.

0.32 L,   0.74 L,   0.8 L

G4-M6-Lesson 10

1. Shade the area models below, decomposing tenths as needed, to represent the pair of decimal numbers. Fill in the blank with <, >, or = to compare the decimal numbers.
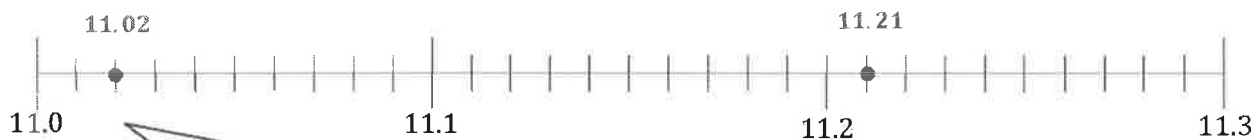
0.4 __>__ 0.37
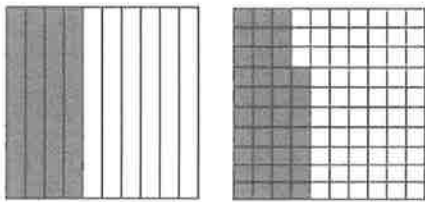
> At first, I thought, "37 is greater than 4." But then I remembered the units of these numbers must be the same in order to compare.
> 4 tenths is equal to 40 hundredths, and 40 hundredths is greater than 37 hundredths.

2. Locate and label the points for each of the decimal numbers on the number line. Fill in the blank with <, >, or = to compare the decimal numbers.

11.02 __<__ 11.21

> Each tick mark represents 1 hundredth. 11.0 equals 11 and 0 hundredths. 11.02 equals 11 and 2 hundredths. 11.21 equals 11 and 21 hundredths. I use this information to help me to locate and label the points.

3. Use the symbols <, >, or = to compare.

1.7 __>__ 1.17

> I know that 1.7 is greater than 1.17 because 1.7 = 1.70 and 1.70 > 1.17.

4. Use the symbols <, >, or = to compare. Use a picture as needed to solve.

47 tenths __>__ 4.6

> I rename 47 tenths as 4 and 7 tenths. 4.7 > 4.6

Lesson 10:   Use area models and the number line to compare decimal numbers, and record comparisons using <, >, and =.   EUREKA MATH
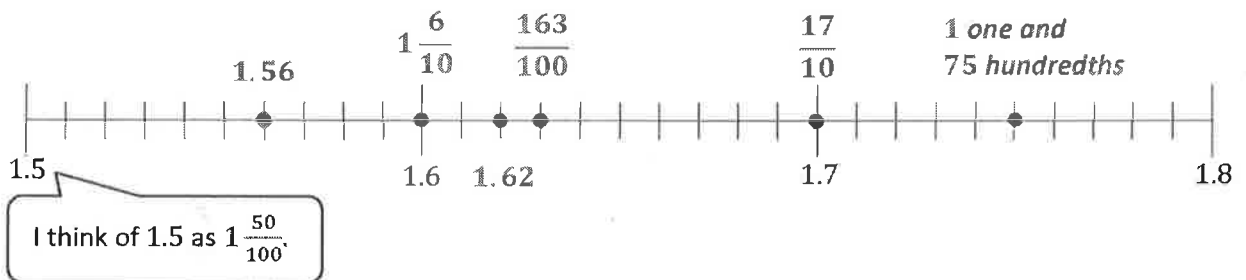
G4-M6-Lesson 11

1. Plot the following points on the number line.

   1.56, $1\frac{6}{10}$, $\frac{163}{100}$, $\frac{17}{10}$, 1.62, 1 one and 75 hundredths

   > I rename all of the numbers to fractions with like units—hundredths. I know that each tick mark represents 1 hundredth.

   $1\frac{56}{100}$ $1\frac{60}{100}$ $1\frac{63}{100}$ $1\frac{70}{100}$ $1\frac{62}{100}$ $1\frac{75}{100}$

   I think of 1.5 as $1\frac{50}{100}$.

2. Arrange the following numbers in order from greatest to least using decimal form. Use the > symbol between each number.

   7 ones and 23 hundredths, $\frac{725}{100}$, 7.4, $7\frac{52}{100}$, $8\frac{2}{10}$, $7\frac{4}{100}$

   > I rename all of the numbers to decimal form. To help me order the numbers, I think of $8\frac{2}{10}$ as 8.20 and 7.4 as 7.40.

   $8.2 > 7.52 > 7.4 > 7.25 > 7.23 > 7.04$

3. In a frog-jumping contest, Mary's frog jumped 1.04 meters. Kelly's frog jumped 1.4 meters, and Katrina's frog jumped 1.14 meters. Whose frog jumped the farthest distance? Whose frog jumped the shortest distance?

Mary's Frog	1.04 m
Kelly's Frog	1.40 m
Katrina's Frog	1.14 m

   > I rename 1.4 to 1.40 to be able to compare hundredths.

   Kelly's frog jumped the farthest distance. Mary's frog jumped the shortest distance. I know because they all jumped at least 1 meter, but Kelly's frog jumped an additional 40 hundredths meter, and Mary's frog only jumped an additional 4 hundredths meter.

G4-M6-Lesson 12

1. Complete the number sentence by expressing each part using hundredths. Model using the place value chart.

ones	•	tenths	hundredths
			••••• ••••• •• ••••• •••••
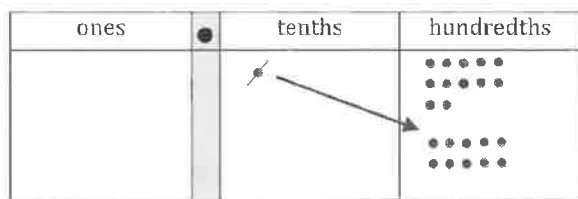
1 tenth + 12 hundredths = __22__ hundredths

10 *hundredths* + 12 *hundredths* = 22 *hundredths*

> To make like units, I change 1 tenth to 10 hundredths.
> 10 hundredths + 12 hundredths = 22 hundredths.

2. Solve by converting all addends to hundredths before solving.

   a.   6 tenths + 21 hundredths = __60__ hundredths + __21__ hundredths = __81__ hundredths

   > This is just like Problem 1. Instead of drawing place value disks, I change the tenths to hundredths in my mind. Each tenth equals 10 hundredths.

   b.   27 hundredths + 3 tenths = __27__ hundredths + __30__ hundredths = __57__ hundredths

   > I can't add because the units are not alike. I can't add 1 cat plus 2 dogs; I have to rename with like units. I can add 1 animal plus 2 animals.

3. Solve. Write your answer as a decimal.

   a. $\frac{3}{10} + \frac{21}{100}$

   $\frac{30}{100} + \frac{21}{100} = \frac{51}{100} = 0.51$

   b. $\frac{14}{100} + \frac{7}{10}$

   $\frac{14}{100} + \frac{70}{100} = \frac{84}{100} = 0.84$

   > To solve, I make like units of hundredths. I add, and then I change the answer from fraction form to decimal form.

Lesson 12:   Apply understanding of fraction equivalence to add tenths and hundredths.   **EUREKA MATH**

G4-M6-Lesson 13

Lesson Notes

In Grade 4, students add decimals by first writing the addends in fraction form and then adding the fractions to find the total. This strengthens student understanding of the fraction and decimal relationship, increases their ability to think flexibly, and prepares them for greater success with fractions and decimals in Grade 5.

1. Solve. Convert tenths to hundredths before finding the sum. Rewrite the complete number sentence in decimal form.

   a. $2\frac{31}{100} + \frac{4}{10}$

   > I convert 4 tenths to 40 hundredths.
   > I add like units.

   $$2\frac{31}{100} + \frac{4}{10} = 2\frac{31}{100} + \frac{40}{100} = 2\frac{71}{100}$$

   > Decimal form is another way to express the numbers.

   $$2.31 + 0.40 = 2.71$$

   b. $4\frac{42}{100} + 2\frac{7}{10}$

   > I add ones to ones and hundredths to hundredths.

   $$4\frac{42}{100} + 2\frac{7}{10} = 4\frac{42}{100} + 2\frac{70}{100} = 6\frac{112}{100} = 7\frac{12}{100}$$

   $$1 \quad \frac{12}{100}$$

   > I use a number bond to show $\frac{112}{100} = 1 + \frac{12}{100}$ since $\frac{100}{100} = 1$.

   $$4.42 + 2.70 = 7.12$$

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

   $4.4 + 1.74$

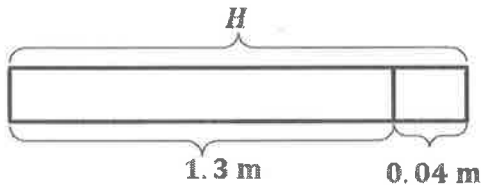 $$4\frac{4}{10} + 1\frac{74}{100} = 4\frac{40}{100} + 1\frac{74}{100} = 5\frac{114}{100} = 6\frac{14}{100}$$

   > To add decimal numbers, I solve by relating this problem to adding fractions.

   $$1 \quad \frac{14}{100}$$

   $$4.4 + 1.74 = 6.14$$

EUREKA
MATH

G4-M6-Lesson 14

1. At the beginning of 2014, Jordan's height was 1.3 meters. If Jordan grew a total of 0.04 meter in 2014, what was his height at the end of the year?


1.3 m   0.04 m

$$H = 1.3\text{ m} + 0.04\text{ m}$$
$$= 1\frac{30}{100}\text{ m} + \frac{4}{100}\text{ m}$$
$$= 1\frac{34}{100}\text{ m}$$
$$= 1.34\text{ m}$$

Jordan's height at the end of the year was 1.34 meters.

> The tape diagram helps me to see that I need to add to solve for H, Jordan's height at the end of the year. I write the decimal numbers in fraction form using like units and then solve.

2. Tyler finished the math problem in 20.74 seconds. He beat his mom's time by 10.03 seconds. What was their combined time?

20.74 sec

Tyler

10.03 sec

Tyler's mom

T

M
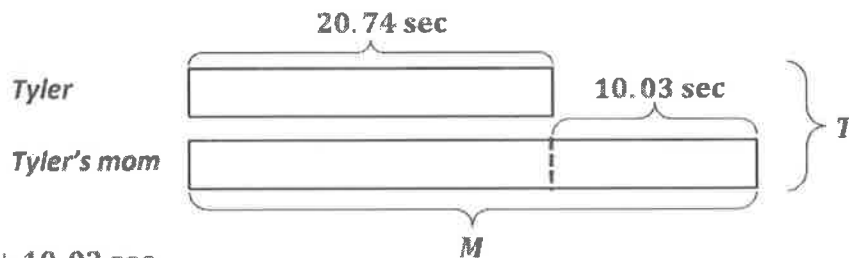
$$T = 20.74\text{ sec} + 20.74\text{ sec} + 10.03\text{ sec}$$
$$= 20\frac{74}{100}\text{ sec} + 20\frac{74}{100}\text{ sec} + 10\frac{3}{100}\text{ sec}$$
$$= 50\frac{151}{100}\text{ sec}$$

1 sec $\frac{51}{100}$ sec

$$= 51\frac{51}{100}\text{ sec}$$
$$T = 51.51\text{ sec}$$

Their combined time was 51.51 seconds.

Lesson 14:   Solve word problems involving the addition of measurements in decimal form.   **EUREKA MATH**

G4-M6-Lesson 15

Lesson Notes

In Grade 4, students find the sum of money amounts by expressing the amounts in unit form, adding like units (i.e., dollars + dollars and cents + cents), and then writing the answer in decimal form with a dollar sign. Writing money amounts in unit form and fraction form builds a strong conceptual foundation for decimal notation. Students are introduced to adding decimal numbers in Grade 5.

1. 4 pennies = $ _0 . 04_ $4¢ = \dfrac{4}{100}$ dollar

2. 8 dimes = $ _0 . 80_ $80¢ = \dfrac{8}{10}$ dollar

3. 2 quarters = $ _0 . 50_ $50¢ = \dfrac{50}{100}$ dollar

> 1 penny = $\dfrac{1}{100}$ dollar
>
> 1 dime = $\dfrac{1}{10}$ dollar
>
> 1 quarter = $\dfrac{25}{100}$ dollar

Solve. Give the total amount of money in fraction and decimal form.

4. 7 dimes and 23 pennies

$(7 \times 10¢) + (23 \times 1¢) = 70¢ + 23¢ = 93¢$

$93¢ = \dfrac{93}{100}$ *dollar*

$\dfrac{93}{100}$ *dollar* $= \$0.93$

> 93 cents is 93 hundredths of a dollar. Thinking of that value as a fraction helps me to write it as a decimal number.

5. 1 quarter 3 dimes and 6 pennies

$(1 \times 25¢) + (3 \times 10¢) + (6 \times 1¢) = 25¢ + 30¢ + 6¢ = 61¢$

$61¢ = \dfrac{61}{100}$ *dollar*

$\dfrac{61}{100}$ *dollar* $= \$0.61$

6. 173 cents is what fraction of a dollar?

$\frac{173}{100}$ *dollars*

> I know that 1 cent = $\frac{1}{100}$ dollar.

Solve. Express the answer in decimal form.

7. 2 dollars 3 dimes 24 pennies + 3 dollars 1 quarter

   2 *dollars* 54 *cents* + 3 *dollars* 25 *cents* = 5 *dollars* 79 *cents*

   5 *dollars* 79 *cents* = 5 $\frac{79}{100}$ *dollars* = $5.79

> I rewrite each addend as dollars and cents. I add like units and then express the amount in decimal form.

8. 7 dollars 5 dimes 2 pennies + 1 dollar 3 quarters

   7 *dollars* 52 *cents* + 1 *dollar* 75 *cents* = 8 *dollars* 127 *cents* = 9 *dollars* 27 *cents*

   1 *dollar*   27 *cents*

   9 *dollars* 27 *cents* = 9 $\frac{27}{100}$ *dollars* = $9.27

EUREKA
MATH

G4-M6-Lesson 16

Use the RDW process to solve. Write your answer as a decimal.

1. Soo Jin needs 4 dollars 15 cents to buy a school lunch. At the bottom of her backpack, she finds 2 dollar bills, 5 quarters, and 4 pennies. How much more money does Soo Jin need to buy a school lunch?
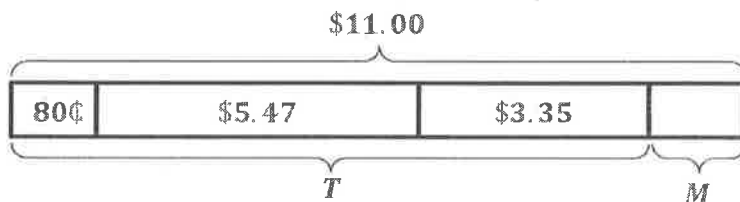
$4.15

$3.29   M

Another way to solve 115 cents − 29 cents is to add 1 to each number and then solve 116 − 30.
11 tens 6 ones − 3 tens = 8 tens 6 ones.
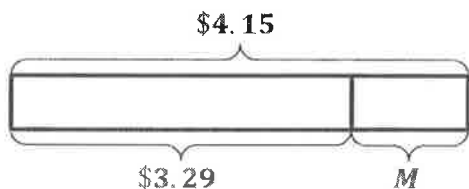
$M = 4$ *dollars* 15 *cents* − 3 *dollars* 29 *cents*

$= 1$ *dollar* 15 *cents* − 29 *cents*

100 *cents*   15 *cents*

$= 86$ *cents*

$= \$0.86$

Soo Jin needs $\$0.86$ *more to buy a school lunch.*

2. Kelly has 2 quarters and 3 dimes. Jack has 5 dollars, 4 dimes, and 7 pennies. Emma has 3 dollars, 1 quarter, and 1 dime. They want to put their money together to buy a pizza that costs $11.00. Do they have enough? If not, how much more do they need?

$11.00

| 80¢ | $5.47 | $3.35 | |

T   M

I determine how much money Kelly, Jack, and Emma each have. I add to find out how much money they have together. Then, I subtract that amount from the cost of the pizza to find out how much more money they need, M.

$T = 80$ *cents* + 5 *dollars* 47 *cents* + 3 *dollars* 35 *cents*

$= 8$ *dollars* 162 *cents*

1 *dollar*   62 *cents*

$= 9$ *dollars* 62 *cents*

Kelly, Jack, and Emma have $\$9.62$.

$M = 11$ *dollars* − 9 *dollars* 62 *cents*

10 *dollars*   100 *cents*

$= 1$ *dollar* 38 *cents*

They do not have enough money to buy the pizza. They need $\$1.38$ *more.*

3. A pint of ice cream costs $2.49. A box of ice cream cup sundaes costs twice as much as the pint of ice cream. Brandon buys a pint of ice cream and a box of ice cream cup sundaes. How much money does he spend?
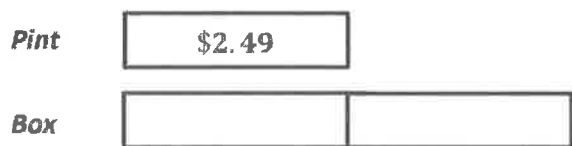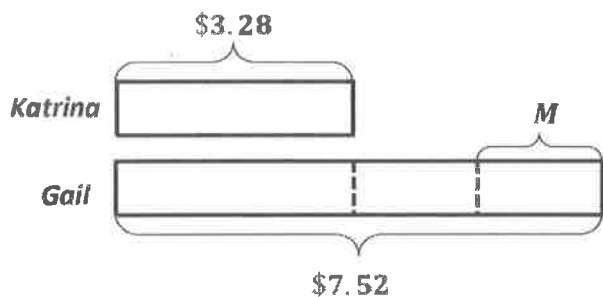
	2	4	9	cents
×			3	
	7	4	7	cents

Pint | $2.49 |

Box

} M

Brandon spends $7.47.

> I see that there are 3 units of $2.49. I rename $2.49 as 249 cents and then multiply by 3. I write my answer in decimal form.

4. Katrina has 3 dollars 28 cents. Gail has 7 dollars 52 cents. How much money does Gail need to give Katrina so that each of them has the same amount of money?

$3.28

Katrina | | M

Gail | |

$7.52

> The tape diagram helps me to solve. I see that if Gail gives Katrina half of the difference, they will have the same amount. I subtract to find the difference, and then I divide by 2.

7 dollars 52 cents − 3 dollars 28 cents = 4 dollars 24 cents

= 424 cents

```
        2  1  2
   2 | 4  2  4
     - 4
       0  2
       -  2
          0  4
          -  4
             0
```

212 cents = $2.12

M = $2.12

Gail needs to give Katrina $2.12 so that each of them has the same amount of money.

Lesson 16:   Express money amounts given in various forms as decimal numbers.   EUREKA MATH