WEEK 6 – ANSWER KEY

Unit 5 Reading Complex Text

Item 1		
Scoring Rubric	**0 points**	Student does not respond correctly; no response.
	1 point	Answers may vary. Sample responses: The line "Coal, my food. Wheels, my feet." gives a clue because trains used to run on coal and move on wheels. Or, the line "I take in young and take in old," gives a clue because young and old people ride the train.

Unit, Lesson, Program Skill	Common Core Content Standard	Webb's Depth of Knowledge*
U5L23: Comprehension: Sequence of Events	RL.3.5	2

Item 2		
Scoring Rubric	**0 points**	Student does not respond correctly; no response.
	1 point	Answers may vary. Sample response: An iron horse, or a train, is the narrator.

Unit, Lesson, Program Skill	Common Core Content Standard	Webb's Depth of Knowledge*
U5L21: Comprehension: Point of View	RL.3.6	2

Item 3		
Scoring Rubric	**0 points**	Student does not respond correctly; no response.
	1 point	Answers may vary. Sample response: Trains gave people a faster way to travel.

Unit, Lesson, Program Skill	Common Core Content Standard	Webb's Depth of Knowledge*
U4L17: Comprehension: Conclusions	RI.3.1	1

Item 4		
Scoring Rubric	**0 points**	Student does not respond correctly; no response.
	1 point	Answers may vary. Student explains how one of the authors uses horses to describe trains, including one of the descriptions below.
	2 points	Answers may vary. Sample response: The poem compares how both a train and a horse transport people, while the article compares how much longer travel took by horse than by train.

Unit, Lesson, Program Skill	Common Core Content Standard	Webb's Depth of Knowledge*
U5L24: Comprehension: Compare Texts	RI.3.9	2

BEING GOOD

1. A
2. I
3. C
4. F
5. C
6. H
7. C
8. G
9. B
10. I
11. C
12. G
13. A
14. I
15. B
16. H
17. D
18. F

A WHOLE OTHER COUNTRY

19. A
20. F
21. B
22. I
23. C

24. F
25. C
26. G
27. C
28. H
29. D
30. H
31. D
32. I
33. D
34. G
35. C

CHAPTER 12 – CHECK PROGRESS

Check My Progress

Vocabulary Check

1. Use the word bank to complete the charts about the **metric system** of measurement.

centimeter   gram   kilogram   kilometer   mass

milliliter   millimeter   meter   liter

length
centimeter
kilometer
millimeter
meter

mass
gram
kilogram

capacity
milliliter
liter

Concept Check

2. Use the word bank to write each vocabulary word next to its abbreviation.

mm __millimeter__   cm __centimeter__

mL __milliliter__   km __kilometer__

g __gram__   kg __kilogram__

L __liter__   m __meter__

3. Adrianna went on a hiking trip. Which measurement best describes how far she hiked, 10 kilometers or 10 meters?

10 kilometers

4. Which is the more reasonable estimate for the mass of a dog, 20 grams or 20 kilograms?

20 kilograms

Brain Builders

5. Raul has a bottle of salad dressing. Is 700 milliliters or 700 liters a more reasonable estimate for the capacity of the bottle of salad dressing? Give an example of something that represents the other capacity.

700 milliliters; Sample answer: 700 liters would be the amount in a large fish tank.

6. **Test Practice** Which of the following holds about 800 milliliters of water?

Ⓐ

Ⓑ

Ⓒ

Ⓓ

CHAPTER 12 – LESSON 5

Lesson 5
Convert Metric Units

ESSENTIAL QUESTION
How can conversion of measurements help me solve real-world problems?

You can multiply to convert, or change between, units.

Math in My World   Watch   Tutor

Example 1

The tree in Camryn's front yard is 4 meters tall. How many centimeters tall is the tree?

Since meters are larger than centimeters, multiply.

$4 \times 100 = 400$

Multiply by 100 because there are 100 centimeters in each meter.

Metric Units of Length
1 centimeter (cm) = 10 millimeters (mm)
1 meter (m) = 100 centimeters (cm)
1 kilometer (km) = 1,000 meters (m)

4 meters = __**400**__ centimeters

So, the tree is __**400**__ centimeters tall.

Example 2   Tutor

Complete. 5 liters = ■ milliliters

Since liters are larger than milliliters, multiply.

$5 \times 1,000 = 5,000$

Multiply by 1,000 because there are 1,000 milliliters in each liter.

Metric Units of Capacity
1 liter (L) = 1,000 milliliters (mL)

So, 5 liters = __**5,000**__ milliliters.

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Example 3 📱 Tutor

Convert 7 kilograms to grams.

7 kilograms = ? grams

Metric Units of Mass
1 kilogram (kg) = 1,000 grams (g)

Kilograms are larger than grams. So, use multiplication.

Multiply by 1,000 because 1 kilogram = 1,000 grams.

1,000 × 7 = **7,000**

So, 7 kilograms = **7,000** grams.

Guided Practice

Complete each conversion table.

List the number pairs in the last column of the conversion table.

1.

kilometers (km)	meters (m)	(km, m)
1	1,000	(1, 1,000)
2	**2,000**	**(2, 2,000)**
3	**3,000**	**(3, 3,000)**
4	**4,000**	**(4, 4,000)**

2.

centimeters (cm)	millimeters (mm)	(cm, mm)
1	**10**	**(1, 10)**
2	**20**	**(2, 20)**
3	**30**	**(3, 30)**
4	**40**	**(4, 40)**

3.

meters (m)	centimeters (cm)	(m, cm)
5	**500**	**(5, 500)**
6	**600**	**(6, 600)**
7	**700**	**(7, 700)**
8	**800**	**(8, 800)**

Talk MATH

Explain why multiplication is used to convert from a larger unit to a smaller unit.

4.

liters (L)	milliliters (mL)	(L, mL)
1	1,000	(1, 1,000)
2	**2,000**	**(2, 2,000)**
3	**3,000**	**(3, 3,000)**
4	**4,000**	**(4, 4,000)**

Name _____

Independent Practice

Complete each conversion table.

5.

meters (m)	centimeters (cm)	(m, cm)
4	400	(4, 400)
5	500	(5, 500)
8	800	(8, 800)
9	900	(9, 900)

6.

kilograms (kg)	grams (g)	(kg, g)
7	7,000	(7, 7,000)
9	9,000	(9, 9,000)
11	11,000	(11, 11,000)
13	13,000	(13, 13,000)

Algebra Find each unknown number.

7. $6 L = \blacksquare mL$

$\blacksquare = $ __6,000__

8. $5 m = \blacksquare cm$

$\blacksquare = $ __500__

9. $2 kg = \blacksquare g$

$\blacksquare = $ __2,000__

10. $5 cm = \blacksquare mm$

$\blacksquare = $ __50__

11. $12 kg = \blacksquare g$

$\blacksquare = $ __12,000__

12. $4 m = \blacksquare mm$

$\blacksquare = $ __4,000__

13. $5 L = \blacksquare mL$

$\blacksquare = $ __5,000__

14. $7 km = \blacksquare m$

$\blacksquare = $ __7,000__

15. $19 m = \blacksquare cm$

$\blacksquare = $ __1,900__

16. $9 kg = \blacksquare g$

$\blacksquare = $ __9,000__

17. $18 L = \blacksquare mL$

$\blacksquare = $ __18,000__

18. $22 cm = \blacksquare mm$

$\blacksquare = $ __220__

19. How many times larger is one kilogram than one gram? __1,000 times__

20. **Mathematical PRACTICE 2** Use Number Sense How many times longer is one kilometer than one meter? __1,000 times__

21. How many times longer is one meter than one centimeter? __100 times__

Problem Solving

22. The mass of Kendall's bicycle is 12 kilograms. What is the mass of the bicycle in grams?

12,000 grams

23. Mrs. Liu's house is 7 meters tall. How tall is the house in centimeters?

700 centimeters

24. **Mathematical PRACTICE 2** **Use Number Sense** Javier needs 2 liters of iced tea for a picnic. How many milliliters of iced tea does he need?

2,000 milliliters

Brain Builders

25. Avery's dad is running a race that is 6 kilometers long. How many centimeters is that race?

600,000 centimeters

Sample answers: 26, 27

26. **Mathematical PRACTICE 3** **Which One Doesn't Belong?** Circle the measurement that does not belong. Explain.

300 grams   10 kilograms   (10 pounds)   600 grams

The other three measurements are metric measurements for mass.

27. **Building on the Essential Question** When converting from a larger unit to a smaller unit, what happens to the number of units in the measurement? Explain.

Sample answer: The number of the units increases since you multiply when converting from a larger unit to a smaller unit of measurement.

CHAPTER 12 – LESSON 6

Name

Lesson 6
Solve Measurement Problems

ESSENTIAL QUESTION
How can conversion of measurements help me solve real-world problems?
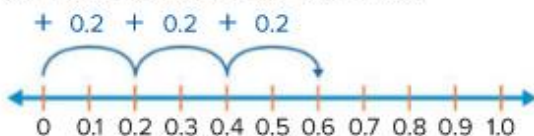
Math in My World

Tools Tutor

Example 1

Lauren lives 0.2 kilometer from Alex. Alex lives three times as far from Colin's house than Lauren's house. How far away does Alex live from Colin?

Find 3×0.2.

You can use a number line to solve the problem.

Start at zero. Count by 0.2 three times.

$+\ 0.2\ +\ 0.2\ +\ 0.2$

0   0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

$3 \times 0.2 = 0.6$

So, Alex lives ___**0.6**___ kilometer from Colin.

Check

Convert 0.2 to a fraction. Then multiply the fraction by 3.

$0.2 = two\ tenths = \frac{2}{10}$

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

$\qquad = (3 \times 2) \times \frac{1}{10}$ Associative Property

$\qquad = 6 \times \frac{1}{10}$ Multiply. $3 \times 2 = 6$

$\qquad = \frac{6}{10}$ 6 groups of $\frac{1}{10}$ is $\frac{6}{10}$.

Helpful Hint
Think of $\frac{2}{10}$ as a multiple of $\frac{1}{10}$.

Since $\frac{6}{10} = six\ tenths = 0.6$, the answer is correct.

Example 2

Javier poured 500 milliliters of lemon juice and 2 liters of water in a pitcher to make lemonade. How many milliliters of lemon juice and water did he pour into the pitcher in all?

1 Convert.

Convert 2 liters to milliliters.

Since 1 liter = 1,000 milliliters, multiply the number of liters by 1,000.

$2 \times 1,000 = 2,000$
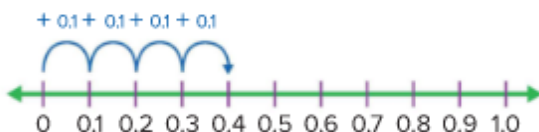
So, 2 liters = 2,000 milliliters.

2 Add.

2,000 milliliters + 500 milliliters = 2,500 milliliters

So, Javier poured __2,500__ milliliters of lemon juice and water into the pitcher.

Guided Practice

1. Evelyn is in a relay race with three other runners. Each runner runs 0.1 kilometer. What is the total distance run by all four runners? Use the number line.

   + 0.1 + 0.1 + 0.1 + 0.1

   0   0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

   __0.4 km__

Talk MATH

Explain how you can check your answer for Exercise 1.

2. A bag of potatoes has a mass of 4 kilograms. Some potatoes are taken out. The mass is now 2,305 grams. What is the mass of the potatoes in grams that were taken out of the bag?
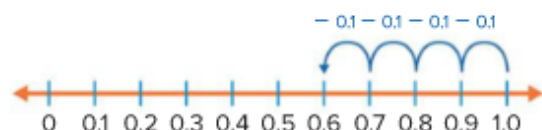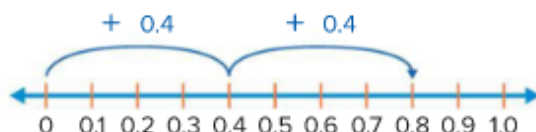
   __1,695 g__

Independent Practice

3. A ribbon is 1 meter long. Keira cuts off a piece of the ribbon that is 0.4 meter long. How much of the ribbon is left? Use the number line.

$-0.1-0.1-0.1-0.1$

0   0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

0.6 meter

4. There are two books. Each has a mass of 0.4 kilogram. What is the total mass of the two books? Use the number line.

$+\ 0.4$ $+\ 0.4$

0   0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

The total mass is ____**0.8 kg**____.

Convert to solve each problem. Draw a number line if needed.

5. One insect is 47 millimeters long. Another insect is 3 centimeters long. What is the total length in millimeters of the insects?

77 mm

6. A table has a mass of 7 kilograms. A chair has a mass of 4,048 grams. What is the total mass in grams of the table and the chair?

11,048 g

Problem Solving

7. Cole has a plastic cup that has 125 milliliters of water in it. He drinks 37 milliliters of the water. How much water is left in the cup?

88 mL

8. **Mathematical PRACTICE 3** **Justify Conclusions** Sam had 0.3 of a dollar. Then he found four nickels and a penny. Does he have enough money to buy something that costs 50¢? Explain.

yes; Sample answer: 0.3 of a dollar = 30¢; 30¢

+ 5¢ + 5¢ + 5¢ + 5¢ + 1¢ = 51¢; 51¢ > 50¢

Brain Builders

9. Each sports bag can hold 6 kilograms of equipment. The golf balls have a total mass of 3,402 grams. The hockey pucks have a total mass of 2,932 grams. How many sports bags will be needed to hold the equipment? Explain.

2 bags; Sample answer: 6 kg = 6,000 g; 3,402 g + 2,932 g

= 6,334 g; The equipment has a mass of 6,334 g. One bag

will not be enough. It can fit in two bags.

10. **Mathematical PRACTICE 2** **Use Symbols** Compare. Write <, >, or =.

3 L + 2,492 mL $\boxed{=}$ 2 L + 1,301 mL + 2,191 mL

11. **Building on the Essential Question** How do I know when it is necessary to convert units before solving a problem? Give an example.

Sample answer: When an operation on measurements

with different units is needed, I need to convert the units

first. See students' work.

CHAPTER 12 - REVIEW

Review → Chapter 12
Metric Measurement

Vocabulary Check

Draw a line to the sentence that each vocabulary word completes.

1. capacity
2. convert
3. mass
4. metric system
5. length

- Centimeter, gram, and liter are all examples of units of measure from the _____.
- _____ is the amount of liquid a container holds.
- _____ is the measurement of a line between two points.
- When you change the unit of measure, you _____ measurements.
- The amount of matter that an object has is known as its _____.

Color the metric units of length red. Color the metric units of capacity blue. Color the metric units of mass green. Then write each abbreviation on the roof.

6. L
liter
blue

7. mm
millimeter
red

8. kg
kilogram
green

9. cm
centimeter
red

10. mL
milliliter
blue

11. g
gram
green

12. m
meter
red

13. km
kilometer
red

Concept Check

14. Measure the width of the flower to the nearest centimeter.

Length: **3 centimeters**

15. Choose the best estimate for the length of a bottle of glue.

Ⓐ 15 millimeters

🅱 15 centimeters

Ⓒ 15 meters

Ⓓ 15 kilometers

16. Circle the more reasonable estimate for the capacity of a bucket.

6 milliliters

(6 liters)

17. Circle the more reasonable estimate for the mass of a chair.

15 grams

(15 kilograms)

Complete the conversion table.

18.

kilograms (kg)	grams (g)	(kg, g)
12	**12,000**	**(12, 12,000)**
14	**14,000**	**(14, 14,000)**
16	**16,000**	**(16, 16,000)**
18	**18,000**	**(18, 18,000)**

19. How many times longer is one kilometer than one meter? **1,000 times**

20. How many times longer is one centimeter than one millimeter? **10 times**

Problem Solving

21. Carson has 0.21 of a dollar. How many different combinations of coins could he have?

9 combinations

22. There are three picture frames. Each has a mass of 0.2 kilogram. What is the total mass of the three picture frames? Use the number line.

+0.2   +0.2   +0.2

0   0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

0.6 kg

Brain Builders

Sample answer: 23

23. Justin drank 1 liter of water during soccer practice. He drank 2,000 milliliters of water during the soccer game. How many milliliters of water did he drink during the practice and the game? Explain.

3,000 milliliters; 1 liter = 1,000 milliliters, 1,000 milliliters + 2,000 milliliters = 3,000 milliliters

24. Julian walked a distance of 2 meters. Keira walked a distance of 300 centimeters. Which student walked farther? How much farther?

Keira; 100 centimeters or 1 meter

25. Test Practice Henry's water bottle has a capacity of 1 liter. How many milliliters will Henry drink if he drinks 1 bottle each day for 10 days?

(A) 1 milliliter   (C) 1,000 milliliters

(B) 10 milliliters   (D) 10,000 milliliters