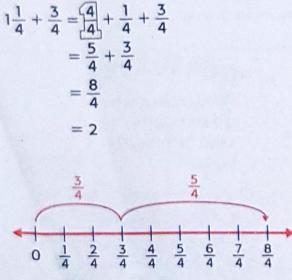# Solve Measurement Problems

Math in My World

Example 1

The blue trail at the park is $\frac{3}{4}$ mile long. The red trail is $1\frac{1}{4}$ miles long. Stella wants to hike both trails. How many feet will she hike in all?
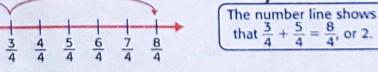
1 Find the total number of miles.

$$1\frac{1}{4} + \frac{3}{4} = \frac{4}{4} + \frac{1}{4} + \frac{3}{4}$$
$$= \frac{5}{4} + \frac{3}{4}$$
$$= \frac{8}{4}$$
$$= 2$$

The number line shows that $\frac{3}{4} + \frac{5}{4} = \frac{8}{4}$, or 2.

Stella will hike 2 miles.

2 Convert the miles to feet.

1 mile = 5,280 feet

Multiply 2 miles by 5,280 to find the total number of feet.

$$\begin{array}{r} 5,280 \\ \times \quad 2 \\ \hline 10,560 \end{array}$$

So, Stella will hike _____ feet in all.

Example 2

Dominic weighed an apple and a watermelon. The apple weighed 5 ounces. The watermelon weighed 20 pounds. How many more ounces did the watermelon weigh than the apple?

1 **Find the total number of ounces the watermelon weighed.**

There are 16 ounces in a pound.
Multiply 20 by 16.

$$\begin{array}{r} 20 \\ \times\ 16 \\ \hline 120 \\ +\ 200 \\ \hline 320 \end{array}$$

The watermelon weighed 320 ounces.

2 **Find the difference in ounces.**

320 oz − 5 oz = _____ oz

So, the watermelon weighed _____ ounces more than the apple.

Guided Practice ✓ Check

1. Stan has 4 pints of milk. Gianna has twice as much milk as Stan. How many fluid ounces of milk does Gianna have?

4 pints × 2 = _____ pints

Gianna has _____ pints of milk.

8 pints × 16 = _____ fluid ounces

Gianna has _____ fluid ounces of milk.

2. Molly went to her grandma's house for 16 hours last weekend. This was four times longer than the time she spent at her grandma's this weekend. How many minutes was Molly at her grandma's house this weekend?
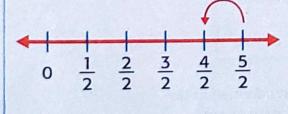
_____

Independent Practice

3. Jayden read to his little sister for 10 minutes on Saturday and 12 minutes on Sunday. How many seconds did he read to her on Saturday and Sunday? Circle what to do to solve this problem.

- Add 10 and 12 and then multiply by 60.

- Add 10 and 12 and then multiply by 30.

- Add 10 and 12 and then divide by 60.

- Add 10 and 12 and then subtract 60.

Solve.

Jayden read to his little sister for _____.

4. Mackenzie's dog can jump $2\frac{1}{2}$ feet off the ground. Jordyn's dog can jump $\frac{1}{2}$ foot off the ground. What is the difference in inches between how high Mackenzie's dog can jump and how high Jordyn's dog can jump? Circle what to do to solve this problem.

- Subtract $2\frac{1}{2}$ ft $-\frac{1}{2}$ ft and then multiply by 3.

- Subtract $2\frac{1}{2}$ ft $-\frac{1}{2}$ ft and then divide by 3.

- Subtract $2\frac{1}{2}$ ft $-\frac{1}{2}$ ft and then multiply by 12.

- Add $2\frac{1}{2}$ ft $+\frac{1}{2}$ ft and then multiply by 12.

Use the number line to help solve.

The difference in inches is _____.

Problem Solving

5. Brooklyn bought 1 pound of cucumbers for a salad. She bought twice as much lettuce. How many ounces of lettuce did Brooklyn buy for the salad?
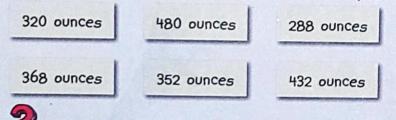
_____

6. **Mathematical PRACTICE** 5 **Use Math Tools** Sebastian needs 2 gallons of juice for his party. How many cups of juice is this?
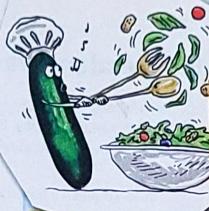
_____

7. The practice field is 13 yards long. How many feet is this?

_____

8. Jacob needs $\frac{1}{2}$ pint of milk for his recipe. He needs $\frac{1}{2}$ pint of water. How many cups will he have after he combines both ingredients?

_____

My Work!

HOT Problems

9. **Mathematical PRACTICE** 2 **Use Number Sense** The moving company charges extra money to move boxes weighing more than 25 pounds. Circle the packages that weigh less than 25 pounds. Put an X on the packages that weigh more than 25 pounds.
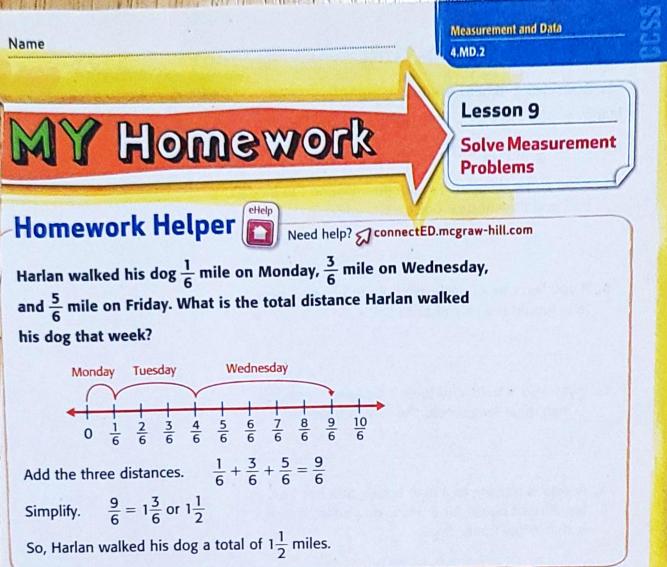
| 320 ounces | 480 ounces | 288 ounces |

| 368 ounces | 352 ounces | 432 ounces |

10. **? Building on the Essential Question** What information do I need to solve word problems that involve measurement?

_____

_____

MY Homework

Homework Helper

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Harlan walked his dog $\frac{1}{6}$ mile on Monday, $\frac{3}{6}$ mile on Wednesday, and $\frac{5}{6}$ mile on Friday. What is the total distance Harlan walked his dog that week?

Add the three distances. $\frac{1}{6} + \frac{3}{6} + \frac{5}{6} = \frac{9}{6}$

Simplify. $\frac{9}{6} = 1\frac{3}{6}$ or $1\frac{1}{2}$

So, Harlan walked his dog a total of $1\frac{1}{2}$ miles.

Practice

For Exercises 1–3, use the following information.

Marissa bought $2\frac{1}{2}$ gallons of orange juice to make punch.

1. How many quarts of orange juice did Marissa buy?

_____

2. Marissa bought 6 fewer pints of soda than of orange juice. How many cups of soda did she buy?

_____

3. Marissa pours $1\frac{1}{2}$ cups of punch in each glass. How many fluid ounces is each serving?

_____

Problem Solving

For Exercises 4–6, use the following information.

Martin sorted the bolts in his toolbox by size. They measured $\frac{3}{8}$ inch, $\frac{1}{2}$ inch, $\frac{5}{8}$ inch, $\frac{7}{8}$ inch, and $1\frac{1}{4}$ inches.

4. What is the difference in length between the longest bolt and the shortest bolt?

_____

5. If you laid one of each size bolt end-to-end, how long would the row of bolts be?

_____

6. If you laid 9 bolts end-to-end that each measure $\frac{7}{8}$ inch, how long would the row of bolts be?

_____

7. Aurora is moving to a new house. She has lived in her current house for 6 years. How many months is that? How many days?

_____

8. **Mathematical PRACTICE** **5** **Use Math Tools** Nolan bought 26 yards of heavy-duty rope at the hardware store. The rope costs $2 per foot. How much did Nolan pay for the rope?

_____

Test Practice

9. Kim and her two brothers each use $1\frac{1}{2}$ cups of milk for breakfast. How many fluid ounces of milk do they use in 4 days?

  Ⓐ 144 fl oz   Ⓒ 72 fl oz

  Ⓑ 108 fl oz   Ⓓ 36 fl oz

Problem-Solving Investigation

STRATEGY: Guess, Check, and Revise

Learn the Strategy

Watch   Tutor

Three elk are walking in the mountains. Two of the elk weigh the same amount. The other elk weighs 150 pounds more than the other two. If the total weight of the three elk is 1,650 pounds, how much does each elk weigh?

1 Understand

What facts do you know?
Two elk weigh the same amount. A third elk weighs 150 pounds more than the other two.

The total weight of the three elk is _____ pounds.

What do you need to find?
the weight of each elk

2 Plan

I will guess, check, and revise to solve the problem.

3 Solve

First Elk Weight (lb)	Second Elk Weight (lb)	Third Elk Weight (lb)	Total Weight (lb)	Check
400	400	550	400 + 400 + 550 = 1,350	too low
500	500	650	500 + 500 + 650 = 1,650	correct

So, two of the elk weigh _____ pounds. The third elk weighs

_____ + 150, or _____ pounds.

4 Check

Does your answer make sense? Explain.
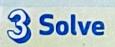
_____

Practice the Strategy

Corrinne is making twice as much fruit punch as lemonade. She is making 12 gallons total. How many gallons will be fruit punch and how many will be lemonade?
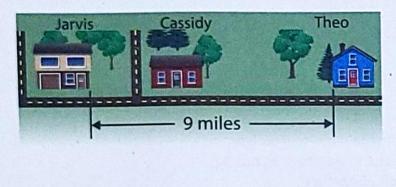
1 Understand

What facts do you know?

_____

_____

What do you need to find?

_____

2 Plan

_____

3 Solve

4 Check

Does your answer make sense? Explain.

_____

_____

Apply the Strategy

Guess, check, and revise to solve each problem.

1. **Mathematical PRACTICE** ③ **Draw a Conclusion** Theo lives twice as far from Cassidy as Jarvis. How far do Theo and Jarvis live from Cassidy?

Jarvis   Cassidy   Theo

←——— 9 miles ———→

_____

2. Jorge and his two brothers each water the plants. Jorge's watering can holds half as much water as his older brother's watering can. His younger brother's watering can holds 8 cups. Altogether, the watering cans hold 2 gallons. How many cups does Jorge's watering can hold?

_____

3. **Mathematical PRACTICE** ① **Make Sense of Problems** Rhonda filled her aquarium with water. Then, she took out 3 gallons to make room for the gravel and fish. She added 2 quarts back in. Then, she added 4 fish. Each fish was in a separate bag with 1 pint of water. If she has a 20-gallon aquarium, how many pints are in the aquarium now?

_____

My Work!

Use any strategy to solve each problem.

- Guess, check, and revise.
- Find extra or missing information.
- Use logical reasoning.
- Look for a pattern.

4. The distance from Ian's home to the museum is 2,640 yards. Is it reasonable to say that Ian's home is more than 9,000 feet away from the museum? (*Hint*: 3 feet = 1 yard)

_____

_____

_____

My Work!

5. Mathematical **PRACTICE** ⑤ **Use Math Tools** One seal weighs 22 pounds. Another seal weighs three times as much. How much do the seals weigh altogether?

_____

6. Mathematical **PRACTICE** ④ **Model Math** Mario wants to download 12 songs on his digital music player. He has only 5 minutes to download the songs. If it takes 30 seconds for Mario to download one song, will he have enough time to download all of the songs? Explain.

_____

_____

_____

7. A stunt person jumps from the roof of a 54-foot building. A skydiver jumps from a plane that is 186 times as high. From what height did the skydiver jump?

_____

MY Homework

Homework Helper

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Cassie is doing sand art. She fills a bottle with 10 inches of sand. She makes two equal layers of yellow sand with a layer of blue sand in between. The layer of blue sand is 1 inch greater than each layer of yellow sand. How many inches of each color of sand does she use?

1 Understand

What facts do you know?
The bottle holds 10 inches of sand. There are two equal layers of yellow sand. There is one layer of blue sand that is 1 inch greater than each yellow layer.

What do you need to find?
the number of inches of each color of sand used

2 Plan

Guess, check, and revise to solve the problem.

3 Solve

Layers of Sand (in.)				
1st Yellow Layer (in.)	2nd Yellow Layer (in.)	Blue Layer (in.)	Total (in.)	Check
4	4	5	$4 + 4 + 5 = 13$	too high
3	3	4	$3 + 3 + 4 = 10$	correct

So, there are two 3-inch layers of yellow sand with a 4-inch layer of blue sand in between the yellow sand layers.

4 Check

Does the answer make sense?
Yes; $3 + 3 + 4 = 10$ and $4 - 3 = 1$.

Problem Solving

Guess, check, and revise to solve each problem.

1. Max was on vacation twice as long as Jared and half as long as Wesley. The boys were on vacation a total of 3 weeks. How many days was each boy on vacation?

   _____

   _____

2. Anu drinks 2 cups of water each day. Jan drinks twice as much water as Anu. How many fluid ounces does Jan drink?

   _____

3. **Mathematical**
   PRACTICE **1** **Plan Your Solution** Casey likes to run. She runs an additional $\frac{1}{4}$ mile each day. On the last day, she ran $1\frac{1}{4}$ miles. If she ran $\frac{1}{2}$ mile her first day, for how many days has she been running?

   _____

4. There are 4 semi-trailer trucks parked in a line at the rest stop. After the first truck, each truck in the line weighs 2 tons more than the truck before it. The trucks weigh a total of 32 tons. How many pounds does each truck weigh?

   _____

   _____

Review

Vocabulary Check

Draw a line from each word to its definition.

1. **customary system**
   - A measurement that tells the amount of liquid a container can hold.

2. **convert**
   - A measurement that tells how heavy an object is.

3. **line plot**
   - A graph that uses columns of Xs above a number line to show frequency of data.

4. **capacity**
   - To change one unit to another.

5. **weight**
   - Units of measure most often used in the United States.

Write an example for each measurement.

6. 1 **yard** _____

7. 1 **quart** _____

8. 1 **foot** _____

9. 1 **gallon** _____

10. 1 **mile** _____

11. 1 **ounce** _____

12. 1 **fluid ounce** _____

13. 1 **pound** _____

14. 1 **cup** _____

15. 1 **ton** _____

16. 1 **pint** _____

17. 1 **second** _____

Concept Check ✓

Complete each conversion table.
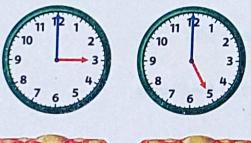
18.

inches (in.)	yards (yd)	(in., yd)
	1	
	3	
	5	
	7	

19.

cups (c)	gallons (gal)	(c, gal)
	2	
	3	
	4	
	5	

20.

feet (ft)	yards (yd)	(ft, yd)
	2	
	4	
	6	
	8	

21.

minutes (min)	seconds (s)	(min, s)
1		
3		
5		
7		

22. How many times greater is one hour than one minute? _____

23. How many times greater is one gallon than one quart? _____

24. How many times greater is one mile than one foot? _____

25. How many times greater is one pound than one ounce? _____

26. How many minutes have passed between the time shown on the first clock and the time shown on the second clock?

_____

27. How many seconds have passed between the time shown on the first clock and the time shown on the second clock?

6:25   6:28

_____

Problem Solving

For Exercises 28–31, use the table shown. The table represents the lengths of beads that Zoe is using to make a necklace.

Lengths of Beads		
$\frac{1}{6}$ in.	$\frac{4}{6}$ in.	$\frac{5}{6}$ in.
$\frac{2}{6}$ in.	$\frac{1}{6}$ in.	$\frac{5}{6}$ in.
$\frac{5}{6}$ in.	$\frac{1}{6}$ in.	$\frac{4}{6}$ in.

28. Represent this data in a line plot.

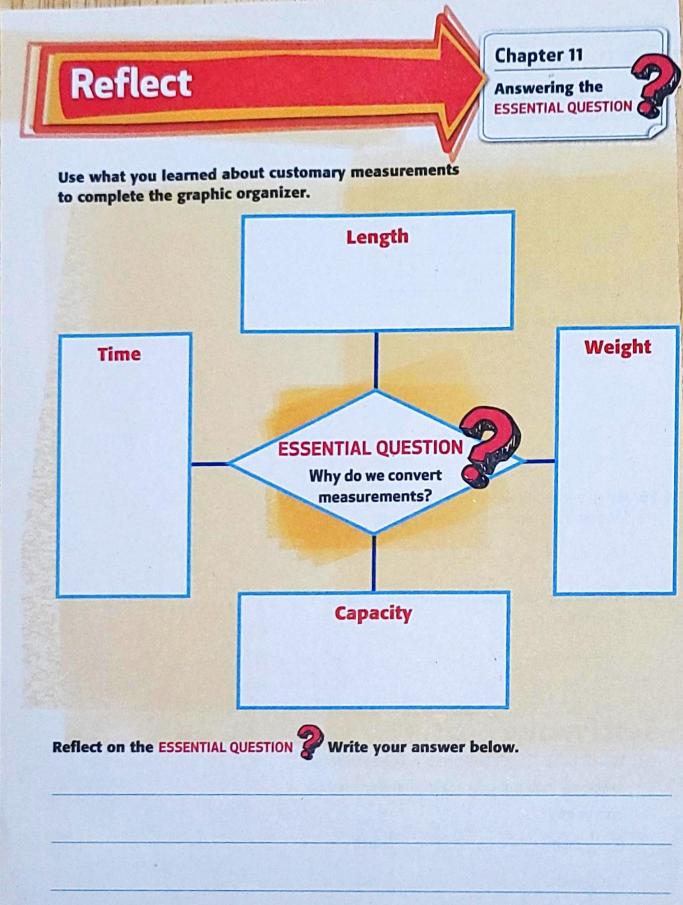**29.** What is the difference in length between the longest bead and the shortest bead?

_____

30. What is the total length of the beads that are $\frac{4}{6}$ inch long?

_____
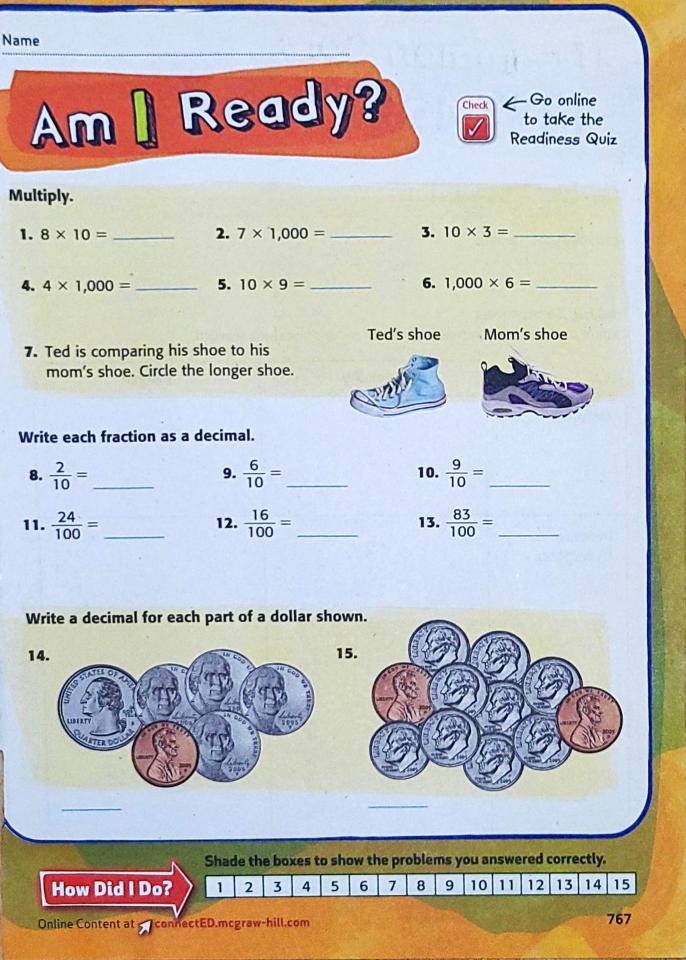
Test Practice

31. Which bead length has enough beads to total exactly $\frac{1}{2}$ inch if the beads of that size are laid end to end?

Ⓐ $\frac{1}{6}$ inch

Ⓒ $\frac{4}{6}$ inch

Ⓑ $\frac{2}{6}$ inch

Ⓓ $\frac{5}{6}$ inch

Use what you learned about customary measurements to complete the graphic organizer.

Length

Time

Weight

ESSENTIAL QUESTION
Why do we convert measurements?

Capacity

Reflect on the ESSENTIAL QUESTION Write your answer below.

_____

_____

_____

Am I Ready?

Multiply.

1. $8 \times 10 =$ _____

2. $7 \times 1{,}000 =$ _____

3. $10 \times 3 =$ _____

4. $4 \times 1{,}000 =$ _____

5. $10 \times 9 =$ _____

6. $1{,}000 \times 6 =$ _____

7. Ted is comparing his shoe to his mom's shoe. Circle the longer shoe.

Ted's shoe   Mom's shoe

Write each fraction as a decimal.

8. $\dfrac{2}{10} =$ _____

9. $\dfrac{6}{10} =$ _____

10. $\dfrac{9}{10} =$ _____

11. $\dfrac{24}{100} =$ _____

12. $\dfrac{16}{100} =$ _____

13. $\dfrac{83}{100} =$ _____

Write a decimal for each part of a dollar shown.

14. _____

15. _____

Shade the boxes to show the problems you answered correctly.

How Did I Do? → 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15

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767

MY Math Words

Vocab
abc

Review Vocabulary

capacity   length

Making Connections

Define and provide examples for each review vocabulary word.

	Capacity	Length
Define.		
Provide examples.		

MY Vocabulary Cards

Mathematical PRACTICE ➡

centimeter (cm)

7 cm

0 1 2 3 4 5 6 7

centimeters

gram (g)

5 grams

kilogram (kg)

1 kilogram

kilometer (km)

1 kilometer

6 city blocks = 1 kilometer

liter (L)

1 liter   about 5 liters

mass

less mass   more mass

meter (m)

about 1 meter

metric system

1 gram   1 liter

Ideas for Use

- Draw or write examples for each card. Be sure your examples are different from what is shown on each card.

- Work with a partner to name the part of speech of each word. Consult a dictionary to check your answers.

A metric unit for measuring mass.

Name another unit of measurement that contains the word part *gram*.

_____

A metric unit for measuring length.
100 centimeters = 1 meter

The prefix *cent-* means "hundred."
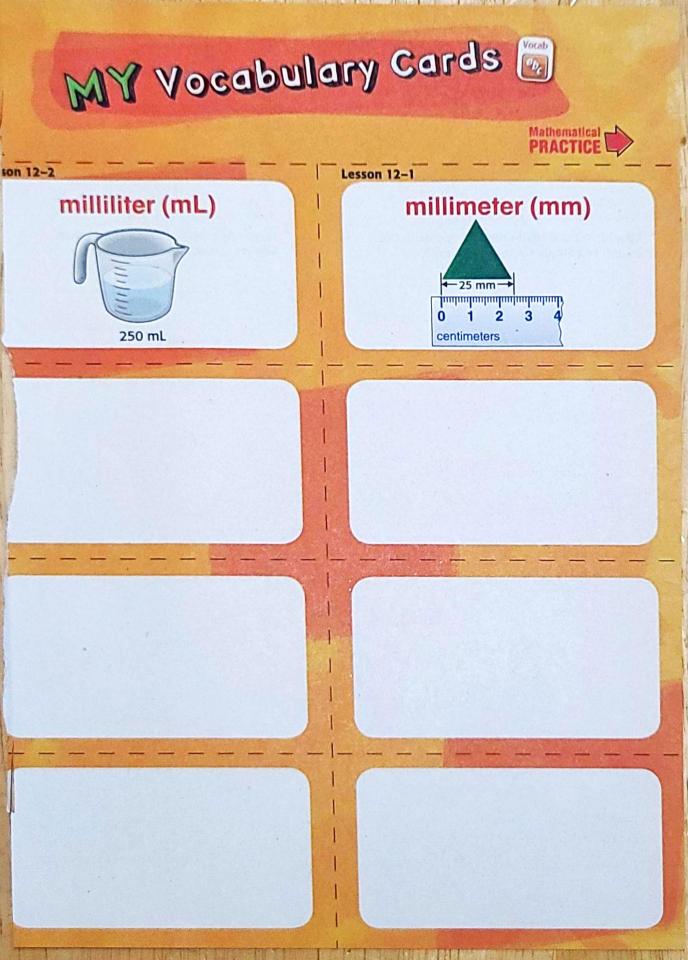Write another math word with this word part and its meaning.

_____

_____

A metric unit for measuring length.
1,000 meters = 1 kilometer

Examine the conversions for this card and *kilogram*. Identify and define the prefix. Explain how it can help you recall the words.

_____

_____

A metric unit for measuring mass.
1,000 grams = 1 kilogram

Explain whether or not you would weigh a feather in kilograms.

_____

_____

_____

The amount of matter in an object.

Name two objects. Which has a greater mass?

_____

_____

A metric unit for measuring volume or capacity. 1 liter = 1,000 milliliters

Would you use liters or milliliters to measure the capacity of a bottle of orange juice?

_____

_____

A system of measurement that includes meters, grams, and liters.

Compare and contrast a unit in the customary system with a unit in the metric system.

_____

_____

_____

A metric unit for measuring length.

Estimate the distance from your desk to the classroom door in meters.

_____

MY Vocabulary Cards

milliliter (mL)

250 mL

millimeter (mm)

25 mm

0 1 2 3 4
centimeters

Ideas for Use

- Group 2 or 3 common words. Add a word that is unrelated to the group. Then work with a friend to name the unrelated word.

- Write the name of each lesson on the front of each blank card. Write a few study tips for each lesson on the back of each card.

A metric unit for measuring length.
1 centimeter = 10 millimeters

Would you use millimeters to measure the length of your classroom? Explain.

_____

_____

A metric unit for measuring capacity.
1,000 milliliters = 1 liter

Name two items in your home that you could measure in milliliters.

_____

_____

MY Foldable

FOLDABLES Follow the steps on the back to make your Foldable.

Metric Conversions

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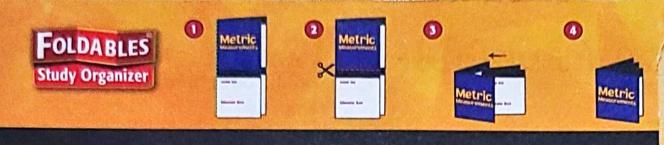meter (m) = 100 centimeters (cm)
kilometer (km) = 1,000 meters (m)

Capacity
liter (L) = 1,000 milliliters (mL)

Mass
kilogram (kg) = 1,000 grams (g)

Metric
Measurements

Mass

gram (g)

meter (m)

kilometer (km)

FOLDABLES
Study Organizer

1 Metric Measurements

2 Metric Measurements

3 Metric Measurements

4 Metric Measurements

Length

millimeter (mm)

kilogram (kg)

centimeter (cm)

Capacity

milliliter (mL)

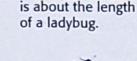**liter (L)**

Metric Units of Length

Lesson 1

ESSENTIAL QUESTION

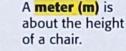How can conversion of measurements help me solve real-world problems?

Length is the measurement of a line between two points. Millimeter, centimeter, meter, and kilometer are units that are part of the **metric system** of measure for length.

A **millimeter (mm)** is about as thick as 6 sheets of notebook paper.
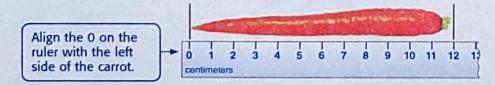
A **centimeter (cm)** is about the length of a ladybug.

A **meter (m)** is about the height of a chair.

A **kilometer (km)** is about six city blocks.

1 kilometer

Math in My World

Tools Watch Tutor

Example 1

Doug is growing carrots in his garden. He pulled out a carrot for lunch. Measure the carrot to the nearest centimeter.

Align the 0 on the ruler with the left side of the carrot.

0 1 2 3 4 5 6 7 8 9 10 11 12 13
centimeters

The carrot is closer to the 12–centimeter mark than the 11-centimeter mark.

So, the carrot is almost _____ centimeters long.

Before measuring the length of an object, always estimate the length to decide which unit of measurement is best to use.

←—Length—→

Example 2 🗨 Tutor

Choose the best estimate for the length of a student's desk.

10 millimeters = 1 centimeter

Ⓐ 5 centimeters

Ⓑ 5 millimeters

Ⓒ 50 centimeters

Ⓓ 50 millimeters

A desk has to be long enough to work on. So, centimeters are a better estimate than millimeters.

Since 5 centimeters, 5 millimeters, and 50 millimeters are all too small, the answer is _____, or choice _____.

Guided Practice 🗹 Check

1. Estimate the length of the grasshopper. Then measure to the nearest centimeter.

_____

2. Choose the best estimate for the length of the kayak.

Ⓐ 6 centimeters

Ⓑ 2 meters

Ⓒ 6 meters

Ⓓ 2 kilometers

Talk MATH

Describe a situation when it would be appropriate to measure an object using millimeters.
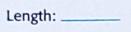
Independent Practice

Estimate each length. Then measure each object to the nearest centimeter.

3.

Length: _____

4.

Length: _____

5.

Length: _____

6.

Length: _____
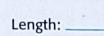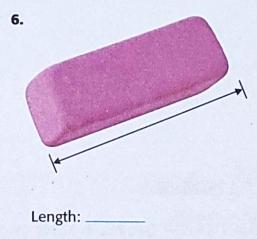
Choose the best estimate for each length.

7. height of a cornstalk

    Ⓐ 2 millimeters

    Ⓑ 2 centimeters

    Ⓒ 2 meters

    Ⓓ 2 kilometers

8. length of an airport runway

    Ⓕ 5 millimeters

    Ⓖ 50 centimeters

    Ⓗ 5 meters

    Ⓘ 5 kilometers

Problem Solving

9. A giraffe at the zoo is 5 meters tall. Name something else that is about 5 meters tall.

_____

10. Is the distance from Boston, Massachusetts, to Phoenix, Arizona, about 4,000 centimeters or 4,000 kilometers? Explain.

_____

_____

11. **Mathematical PRACTICE** ③ **Justify Conclusions** Why would it be better to measure the length of your classroom with a meterstick instead of a centimeter ruler?

_____

_____

_____

_____

HOT Problems

12. **Mathematical PRACTICE** ⑤ **Use Math Tools** Find three things in the classroom that are longer than 10 centimeters and smaller than 100 centimeters.

_____

_____

13. **Building on the Essential Question** Is it reasonable to use centimeters to measure the length of any object? Explain.

_____

_____

_____

Homework Helper

eHelp

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Estimate the length. Then measure to the nearest centimeter.

1 Estimate.
You know that the length of a ladybug is about 1 centimeter. You can estimate that the pencil is about 10 ladybugs, or 10 centimeters, long.

2 Measure.
Use a centimeter ruler. Line up the 0 on the ruler with the end of the pencil. The pencil ends just after the 11-centimeter mark.

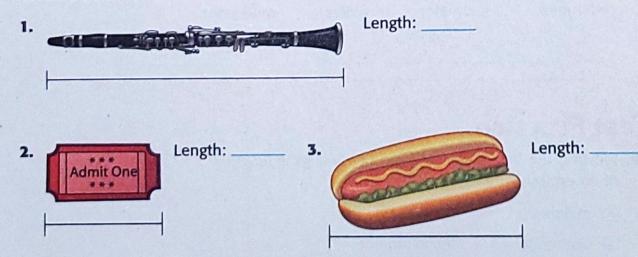So, the pencil is about 11 centimeters long.

Practice

Estimate each length. Then measure each object to the nearest centimeter.

1. Length: _____

2. Admit One   Length: _____

3. Length: _____

Choose the best estimate for each length.

4. length of a river

    Ⓐ 27 km   Ⓒ 170 cm

    Ⓑ 7 m   Ⓓ 270 mm

5. length of a sunflower seed

    Ⓕ 90 cm   Ⓗ 90 mm

    Ⓖ 9 cm   Ⓘ 9 mm

Problem Solving

6. Mathematical PRACTICE ③ Draw a Conclusion Sonia is standing 20 centimeters from the door. Brice is standing 20 meters from the door. Who is standing farther from the door?

_____

7. Carly says she walks 300 millimeters to school each day. Is this reasonable? Explain.

_____

_____

8. At his aunt's farm, Benjamin sees a horse that is 2 meters long. Name two other things that are about 2 meters long.

_____

Vocabulary Check

9. List the metric system units for measuring length in order from *greatest* to *least*.

    centimeter   kilometer   meter   millimeter

_____

Test Practice

10. Which is the best unit to use for measuring the length of an eyelash?

    Ⓐ millimeter   Ⓒ meter

    Ⓑ centimeter   Ⓓ kilometer

Metric Units of Capacity

ESSENTIAL QUESTION ❓

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

The amount of liquid a container can hold is its capacity. The liter (L) and milliliter (mL) are units of measurement for capacity in the metric system.

liter (L)

A bottle this size can hold a liter.

milliliter (mL)

An eyedropper holds about one milliliter.

Math in My World Watch ▶ Tutor 💬

Example 1

Decide whether 300 milliliters or 300 liters is the more reasonable estimate for the capacity of the mug.

Use logic to estimate the capacity.

300 mL

Helpful Hint
300 eyedroppers are reasonable.

300 L

Helpful Hint
300 bottles are too much.

So, _____ is the more reasonable estimate.

Example 2

Decide whether 600 milliliters or 600 liters is the more reasonable estimate for the capacity of the swimming pool.

The pool is a large object. So, 600 milliliters is too small.

So, _____ is the more reasonable estimate.

Guided Practice

Circle the more reasonable estimate for each capacity.

1.

1 mL

1 L

2.

38 mL

38 L

Talk MATH
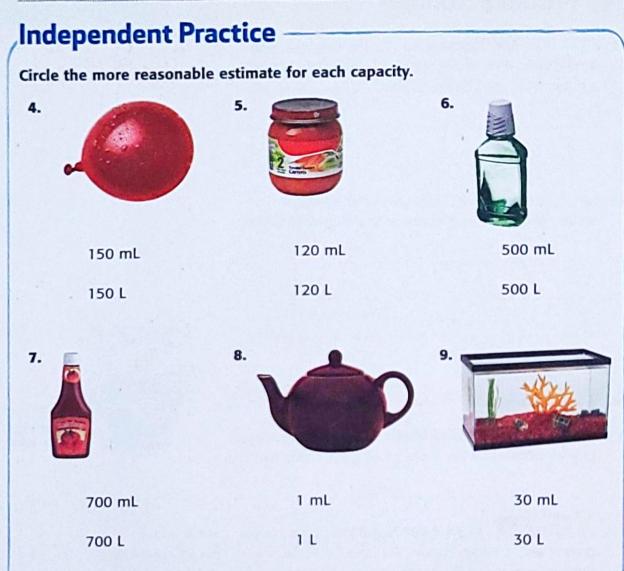
Describe the unit of capacity you would use to measure the capacity of a bottle of medicine.

3.

220 mL

220 L

Name _____

Independent Practice

Circle the more reasonable estimate for each capacity.

4.

150 mL

150 L

5.

120 mL

120 L

6.

500 mL

500 L

7.

700 mL

700 L

8.

1 mL

1 L

9.

30 mL

30 L

10. Select three containers. Decide whether each container has a capacity that is greater than, less than, or equal to 1 liter. Complete the table.

Object	Estimate

Problem Solving

11. PRACTICE **2** **Reason** Jenna said that she took 4 milliliters of medicine when she was sick. Is this a reasonable statement? Explain.
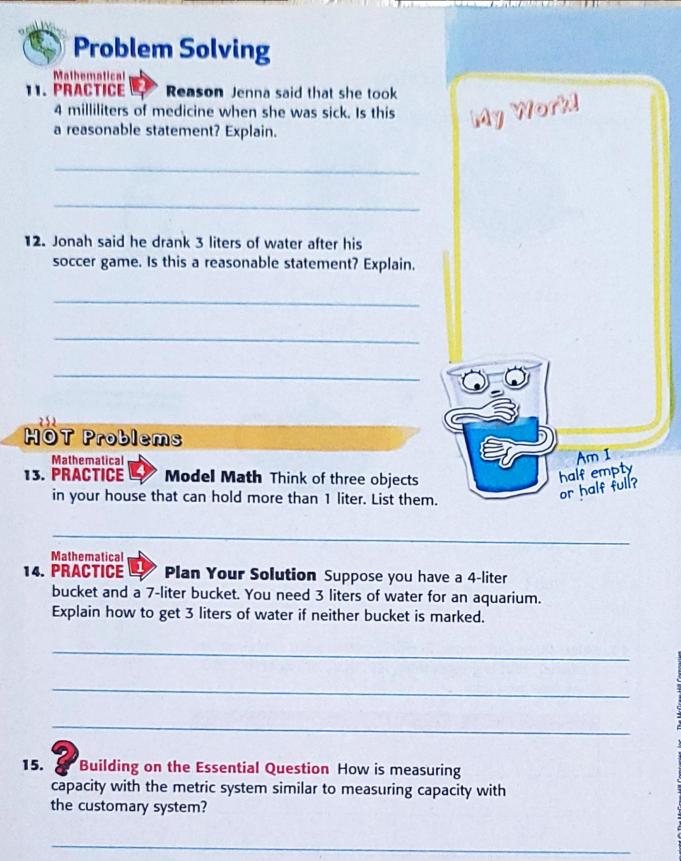
_____

_____

12. Jonah said he drank 3 liters of water after his soccer game. Is this a reasonable statement? Explain.

_____

_____

_____

HOT Problems

13. PRACTICE **4** **Model Math** Think of three objects in your house that can hold more than 1 liter. List them.

_____

14. PRACTICE **1** **Plan Your Solution** Suppose you have a 4-liter bucket and a 7-liter bucket. You need 3 liters of water for an aquarium. Explain how to get 3 liters of water if neither bucket is marked.

_____

_____

_____

15. **Building on the Essential Question** How is measuring capacity with the metric system similar to measuring capacity with the customary system?

_____

_____

My Work!

Am I half empty or half full?

MY Homework

Homework Helper

Need help? connectED.mcgraw-hill.com

Thom is making stew for his family. Is it more reasonable to say the capacity of the stew pot is 5 liters or 5 milliliters?

You know that a milliliter is a tiny amount—about the capacity of an eyedropper.

You know that a liter is a greater amount—about the capacity of a large water bottle.

It would not be reasonable to estimate the capacity of a stew pot in milliliters.

So, it would be more reasonable to say the capacity of the stew pot is 5 liters.

Practice

Choose the most reasonable estimate for each capacity.

1. Ⓐ 40 liters
   Ⓑ 4 liters
   Ⓒ 40 milliliters
   Ⓓ 4 milliliters

2. Ⓕ 10 mL
   Ⓖ 100 mL
   Ⓗ 10 L
   Ⓘ 100 L

3. Ⓐ 1 liter
   Ⓑ 3 liters
   Ⓒ 7 liters
   Ⓓ 10 liters

4. Ⓕ 17 mL
   Ⓖ 170 mL
   Ⓗ 170 L
   Ⓘ 17 L

Match each object to its reasonable capacity.

5. bottle of nail polish • 300 liters

6. bathtub • 2 liters

7. large pitcher • 15 milliliters

Problem Solving

8. **Mathematical**
PRACTICE ➊ **Check for Reasonableness** Emerson needs to use eye drops. Is it reasonable for her to put 1 milliliter of drops in each eye? Explain.

_____

9. Ryan fills his cat's water bowl. Is it reasonable to say he uses 1 milliliter of water? Explain.

_____

10. Identify 2 objects you could find in a grocery store that hold less than 100 milliliters.

_____

Vocabulary Check

Write a vocabulary term to complete each sentence.

liters   milliliters

11. The capacity of a baby's bottle would be measured in _____.

12. The capacity of a fish tank would be measured in _____.

Test Practice

13. Which is a reasonable estimate for the capacity of a bottle of mouthwash?

ⓐ 1 milliliter   ⓒ 1 liter

ⓑ 20 milliliters   ⓓ 20 liters

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