تم تحميل هذا الملف من موقع المناهج الإماراتية

حل الوحدة الثانية عشرة data and Measurement القياس والبيانات منهج ريفيل

موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف الخامس ⇦ رياضيات ⇦ الفصل الثالث ⇦ الملف

تاريخ إضافة الملف على موقع المناهج: 2024-05-10 17:26:35

التواصل الاجتماعي بحسب الصف الخامس

اضغط هنا للحصول على جميع روابط "الصف الخامس"

روابط مواد الصف الخامس على تلغرام

التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الخامس والمادة رياضيات في الفصل الثالث

1	كتاب الطالب منهج ريفيل
2	الدروس المقررة في المادة منهج بريدج بعد التعديل
3	حل الوحدة الحادية عشرة Fractions Divide قسمة الكسور منهج ريفيل
4	مراجعة الوحدة الحادية عشرة review 11 Unit

المزيد من الملفات بحسب الصف الخامس والمادة رياضيات في الفصل الثالث	
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Lesson 12-1

Convert Customary Units

Be Curious

How are they the same?
How are they different?

Math is... Mindset

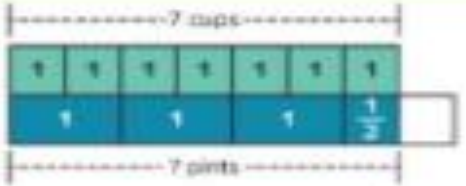
What behaviors have helped you be successful in the past?

Learn

Mikayla is making frozen yogurt.

How many pints of yogurt does Mikayla need? For how many minutes does she need to freeze the yogurt?

Frozen Yogurt Recipe
7 cups yogurt
1 teaspoon vanilla extract
$\frac{2}{3}$ cup sugar
Mix yogurt, vanilla, and sugar.
Freeze for $\frac{3}{4}$ hour.



2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon

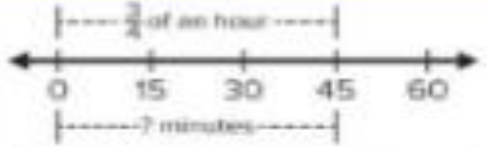
You divide to convert cups to pints.

$7 \div 2 = 3\frac{1}{2}$

Mikayla needs $3\frac{1}{2}$ pints of yogurt.

Math is... Choosing Tools

What other tool could you use to convert units?



60 seconds = 1 minute
60 minutes = 1 hour
24 hours = 1 day

You multiply to convert hours to minutes.

$\frac{3}{4} \times 60 = 45$

She needs to freeze the yogurt for 45 minutes.

You can use multiplication or division to convert customary units of measurement and units of time.

Work Together

A school hosts a walk for charity that is 4 miles long. How long is the walk in yards?

7,040 yards

On My Own

Name _____

Which operation will you use for the conversion? Explain your reasoning.

1. cups to fluid ounces
multiplication; finding more of a smaller unit

2. hours to days
division; finding fewer of a larger unit

Complete the conversion.

3. 36 in. = **3** ft

4. 2 T = **4,000** lb

5. 16 pt = **2** gal

6. 3 yr = **36** mo

7. 48 oz = **3** lb

8. 4 hr = **240** min

9. A basketball court is 84 feet long. How does 84 feet compare to 30 yards? Explain how you know.
84 feet is less than 30 yards. Sample answer: 30 × 3 = 90, so 30 yards is 90 feet, and 84 is less than 90.

10. James needs this much ribbon for an art project. How many inches of ribbon does he need? **8 in.**

11. During a reading contest, Mike read for a total of 120 hours. How many days is equal to 120 hours? **5 days**

12. Amy's dog weighs 272 ounces. How many pounds does her dog weigh? **17 lb**

13. Lauren goes for a walk that is $\frac{7}{8}$ mile long. How many feet did she walk? **4,620 ft**

14. **STEM Connection** Finn needs to cut a piece of wood that is 144 inches long. He thinks it would be easier to measure the piece of wood in yards. What is the length in yards? Explain your answer.
4 yd; Sample answer: 144 ÷ 36 = 4

15. **Extend Your Thinking** A rope is 100 inches long. What is the length in feet and inches? Explain your reasoning.
8 ft 4 in.; Sample answer: 100 ÷ 12 = 8 with a remainder of 4, so there are 8 feet and 4 inches remaining.

Reflect

How can you use multiplication and division to convert among different customary units of measure?
Answers may vary.

Math is... Mindset
What behaviors have helped you be successful in the past?

Lesson 12-2

Convert Metric Units

Be Curious

What do you see?

Math is... Mindset

What helps you be motivated to do your best work?

Learn

The mass of a school district's new textbook must be no more than 1.25 kilograms, and its spine width must be no greater than 2.5 centimeters. Monique measured the mass of a book in grams and its spine width in millimeters.

Can this book be the district's textbook?

Grams are smaller than kilograms.

You divide by a power of 10 to convert grams to kilograms.

$1250 \div 1000 = 1.25$

The book has a mass 1.25 kilograms.

1,000 grams = 1 kilogram

Centimeters are larger than millimeters.

You multiply by a power of 10 to convert centimeters to millimeters.

$2.5 \times 10 = 25$

The book has a thickness of 25 millimeters.

10 millimeters = 1 centimeter
100 centimeters = 1 meter
1,000 meters = 1 kilometer

Math is... Structure

How can you know when to multiply and when to divide when converting units?

You multiply or divide by a power of 10 to convert metric units of mass, length, or capacity.

Work Together

Wade and Ally converted 4,000 milliliters to liters using different methods. How can you justify their reasoning?

Wade's work:	Ally's work:
4,000 mL = ? L	4,000 mL = ? L
$4{,}000 \div 1{,}000 = 4$	$4{,}000 \times \frac{1}{1{,}000} = \frac{4{,}000}{1{,}000} = 4$
4,000 mL = 4 L	4,000 mL = 4 L

Sample answer: Because there are 1,000 mL in a liter, Wade divides by 1,000 to find the number of liters. A milliliter is $\frac{1}{1{,}000}$ of a liter, so Ally multiplies by $\frac{1}{1{,}000}$.

On My Own

MATH REPLAY | GO ONLINE

Name _____

Which operation should you use for the conversion?
Explain your answer.

1. milligrams to grams
   division; Sample answer: finding fewer of a larger unit

2. meters to centimeters
   multiplication; Sample answer: finding more of a smaller unit

Complete the conversion.

3. 3 L = **3,000** mL

4. 100 mL = **0.1** L

5. 500 kg = **500,000** g

6. 6 km = **6,000** m

7. 70 mg = **0.07** g

8. 800 kL = **800,000** L

9. Andrew's height is given in centimeters. What is Andrew's height in meters? **1.42 m**

10. **Error Analysis** A cooler contains 50 liters of water. Emily calculated to determine how many milliliters of water are in the cooler. Check Emily's work. Did she make any mistakes? If so, how could she correct her work?

    50 x 100 = 5,000

    There are 5,000 milliliters of water.

    Sample answer: She should have multiplied 50 by 1,000 instead of 100.

11. The maximum mass an elevator can hold is 450 kilograms. What is the maximum mass in grams? **450,000 g**

12. How many liters of water are in the pool?
    375,000 L

13. Ryan has a sheet of paper that is 0.75 meter long. What is the length in centimeters? **75 cm**

14. Ada's backpack has a mass of 9,080 grams. What is the mass in kilograms? **9.08 kg**

15. **Extend Your Thinking** Explain how you can determine how many millimeters are in a kilometer.
    Sample answer: A meter is 1,000 millimeters, and a kilometer is 1,000 meters, so there are 1,000 × 1,000 = 1,000,000 millimeters in a kilometer.

Reflect

How can you use multiplication and division to convert metric units of measure?

Answers may vary.

Math is... Mindset

What helped to motivate you to do your best work?

Lesson 12-3

Solve Multi-Step Problems Involving Measurement Units

Be Curious

Which doesn't belong?

quarts to gallons

yards to feet

liters to milliliters

quarts to cups

Math is... Mindset

What helps you make sense of a situation?

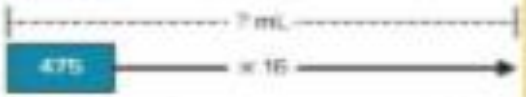
Learn

Annie's mother needs to have enough water to fill 16 water bottles. Each bottle holds 475 milliliters of water.

Which water jug should Annie's mother use?

You can convert units of measurement to help you solve the problem.

How many milliliters of water does Annie's mother need to fill all the bottles?



16 × 475 = ?

$$\begin{array}{r} 475 \\ \times\ 16 \\ \hline 2850 \\ +\ 4750 \\ \hline 7600 \end{array}$$

Annie's mother needs 7,600 milliliters of water.

Which water jug should she use?

7,600 mL = ? L — 1000 mL = 1 L

milliliters to liters → small to large units

You divide to convert.

7,600 ÷ 1000 = 7.6

Annie's mother needs 7.6 liters of water, so she should use the 9-L jug.

Math is... Perseverance

How can you make sense of the problem?

Knowing how to convert units of measurement can help you solve problems that have multiple steps.

Work Together

John ordered a 2-yard long sandwich for his party. His guests ate $\frac{2}{3}$ of the sandwich. How many inches of sandwich are left?

24 inches

On My Own

MATH REPLAY | GO ONLINE

Name _____

1. Adrian has a roll of wrapping paper that is 3 yards long. He uses $\frac{1}{3}$ of the wrapping paper to wrap a present. What is the length, in feet, of the paper left on the roll?

   A. 1 ft
   B. 3 ft
   C. 6 ft

2. Ruby's backpack has a mass of 4 kilograms. She removes a book that has a mass of 120 grams. What is the mass of Ruby's backpack after she removes the book?

   A. 2.8 kg
   B. 3.88 kg
   C. 38.8 kg

3. Amy's family has 2 gallons of milk in the refrigerator. At dinner, her family drinks $\frac{3}{8}$ of the milk in the refrigerator. How many cups of milk are left? **20 C**

4. A track at the school is 400 meters long. Jackson walks around the track $3\frac{1}{2}$ times. How many kilometers did Jackson walk? **1.4 km**

5. **STEM Connection** Finn knows that a cubic yard of concrete weighs about 4,050 pounds. A cement truck can hold 10 cubic yards of concrete. How many tons of concrete can the truck hold? **20.25 tons**

6. Robin is selling lemonade. She makes 3 liters of lemonade and sells glasses of 250 milliliters of lemonade each. In the first hour, she sells 6 glasses of lemonade. How many liters does she have left? **1.5 L**

7. Brian is walking to his friend's house that is 2.6 kilometers away. He stops when he is $\frac{7}{9}$ of the way there. How many meters does he still have to walk?

   325 m

8. Nell is aiming to drink the amount of water shown per day. By 3 p.m., she is $\frac{3}{4}$ of the way to her goal. How many more fluid ounces does she need to drink to reach her goal?

   16 fl oz

8 cups per day

9. Tyler wants to send his cousin 5 books that are each 1,500 grams. He has a box that can hold up to 6 kilograms. Will Tyler be able to use the box he has? Explain.

   No. Sample answer: He will need a bigger box because the total mass of the books is 7.5 kilograms.

10. Gina is growing a houseplant. When she measures it at the beginning of the month, it is 3 feet tall. When she measures it at the end of the month, it is $1\frac{1}{4}$ the size it was at the beginning of the month. How many inches did the houseplant grow? **9 in.**

11. **Extend Your Thinking** Christa has 3 gallons of water. Jaylen has 36 pints of water. Who has more water? Explain your reasoning.

    Jaylen; Sample answer: 3 gallons is the same as 24 pints, and 36 > 24.

Reflect

How can you solve multi-step word problems involving units of measurement?

Answers may vary.

Math is... Mindset

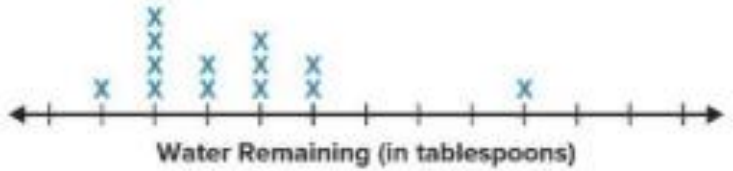
What helped you make sense of a situation?

Lesson 12-4

Represent Measurement Data on a Line Plot

Be Curious

What is the question?



Math is... Mindset

What helps you be part of the classroom community?

Learn

Ryan filled cups with the same amount of water and set them out in a room. The next day, he measured the amount of water remaining in each cup. The table shows his findings.

$1\frac{3}{4}$	$1\frac{1}{4}$	$2\frac{1}{4}$	2	$1\frac{1}{4}$	2
$1\frac{1}{2}$	$1\frac{3}{4}$	1	$1\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{1}{2}$
$1\frac{1}{2}$	2	$1\frac{3}{4}$	2	$1\frac{1}{2}$	$1\frac{1}{4}$

How many cups had 2 tablespoons or more of water remaining?

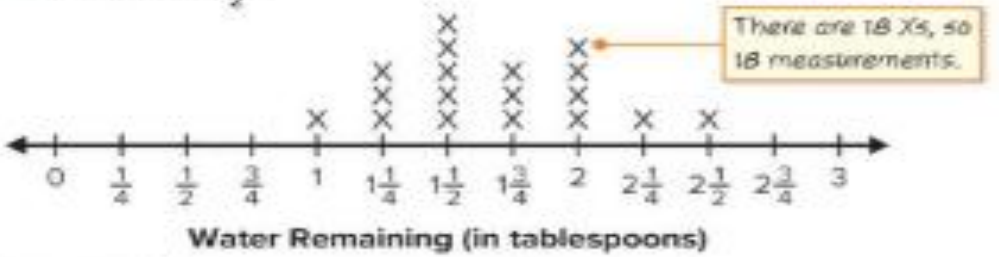
You can create a line plot to interpret the data.

There are

- 4 Xs above 2,
- 1 X above $2\frac{1}{4}$, and
- 1 X above $2\frac{1}{2}$.

Math is... In My World

When might a line plot be useful to you outside of class?



6 cups had 2 tablespoons or more of water remaining.

You can use line plots to see how many measurements there are and how the measurements are grouped together.

Work Together

How does the line plot show which measurement occurred most often?

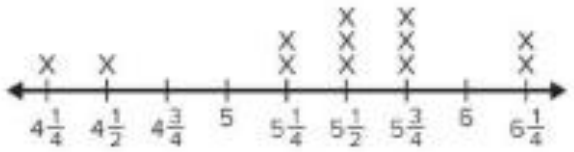
The measurement $\frac{1}{2}$ has 4 Xs, which is more than any other measurement.

On My Own

MATH REPLAY | GO ONLINE

Name _____

This line plot shows the lengths of various mice from nose to the tip of the tail. Use the line plot to answer the questions.



Mice Length (in inches)

1. How many mice are in the data set?

   12 mice

2. How long is the shortest mouse?

   $4\frac{1}{4}$ in.

3. How long is the longest mouse?

   $6\frac{1}{4}$ in.

4. Which measurement or measurements occurred the most often?

   $5\frac{1}{2}$ in. and $5\frac{3}{4}$ in.

5. Which measurement or measurements occur the least often?

   $4\frac{1}{4}$ in. and $4\frac{1}{2}$ in.

6. How many mice are longer than 5 inches?

   10 mice

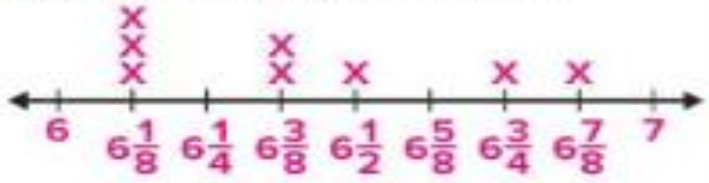
7. How many mice are shorter than 5 inches?

   2 mice

8. What is the difference in inches between the longest and the shortest mice?

   2 in.

9. Create a line plot to represent the data.



Pencil Lengths (in inches)

Pencil Lengths (in.)			
$6\frac{3}{4}$	$6\frac{1}{8}$	$6\frac{1}{2}$	$6\frac{1}{8}$
$6\frac{7}{8}$	$6\frac{3}{8}$	$6\frac{1}{8}$	$6\frac{3}{8}$

10. How did you know how to label the measurements on the line plot?

    Sample answer: Some of the measurements are in eighths, so I labeled each tick mark counting by eighths.

11. How did you know how many Xs to place above each measurement?

    Sample answer: I counted how many of each measurement there are in the table and placed that many Xs.

12. Are there any measurements with no Xs above them? Explain.

    There are no Xs above 6, $6\frac{1}{4}$, $6\frac{5}{8}$, or 7; there are no pencils of those lengths.

13. **Extend Your Thinking** Another pencil was found. It has a length that is $1\frac{1}{2}$ inches shorter than the longest pencil in the table. What is the length of this new pencil?

    $5\frac{3}{8}$ in.

Reflect

How can you use line plots to interpret measurements?

Answers may vary.

Math is... Mindset

How were you part of the classroom community?

Lesson 12-5

Solve Problems Involving Measurement Data on Line Plots

Be Curious

What do you notice?
What do you wonder?

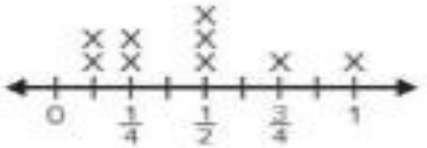
Math is... Mindset

How can you show others that you value their ideas?

Learn

A tortilla maker put $4\frac{1}{2}$ cups of corn meal in ten bowls. The line plot shows the amount of corn meal in each of nine bowls.

How much corn meal is in the tenth bowl?



Corn Meal in Each Bowl (in cups)

Determine the amount of corn meal in each of the nine bowls.

2 bowls have $\frac{1}{8}$ cup each. $2 \times \frac{1}{8} = \frac{2}{8}$

2 bowls have $\frac{1}{4}$ cup each. $2 \times \frac{1}{4} = \frac{2}{4} = \frac{4}{8}$

3 bowls have $\frac{1}{2}$ cup each. $3 \times \frac{1}{2} = \frac{3}{2} = \frac{12}{8}$

1 bowl has $\frac{3}{4}$ cup. $\frac{3}{4} = \frac{6}{8}$

1 bowl has 1 cup. $1 = \frac{8}{8}$

$\frac{2}{8} + \frac{4}{8} + \frac{12}{8} + \frac{6}{8} + \frac{8}{8} = \frac{32}{8} = 4$

The nine bowls have 4 cups of corn meal.

Math is... Quantities

What could be another way to add the amounts of corn meal?

Subtract to determine the amount of corn meal in the tenth bowl.

$4\frac{1}{2} - 4 = \frac{1}{2}$

The tenth bowl has $\frac{1}{2}$ cup of corn meal.

You can solve problems by interpreting information given in line plots and then performing operations.

Work Together

Based on the line plot above, what is the difference between the greatest amount of flour in a bowl and the least amount of flour in a bowl? Explain your answer.

$\frac{7}{8}$ c; Sample answer: $1 - \frac{1}{8} = \frac{7}{8}$

On My Own

MATH REPLAY | GO ONLINE

Name _____

The line plot shows the weights of various mice. Use the line plot to answer the questions.

Mice Weight (in ounces)

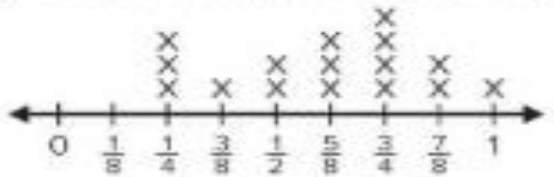
1. What is the combined weight of the 4 lightest mice? $1\frac{1}{8}$ oz
2. What is the combined weight of the mice that weigh $\frac{3}{4}$ ounces? $3\frac{3}{4}$ oz
3. What is the combined weight of all the mice? $8\frac{1}{4}$ oz
4. What is the difference in weight between the heaviest mouse and the lightest mouse? 1 oz

The line plot shows the amount of rain that fell each day in a week. Use the line plot to answer the questions.

Daily Rainfall (in inches)

5. What was the total amount of rainfall in inches during the week? 3 in.
6. How many days did it rain during the week? 6 days
7. On the days it rained, what is the difference between the greatest and least amount of rainfall? $\frac{1}{2}$ in.
8. If the same amount of rain falls the following week, what is the total amount of rainfall over two weeks? 6 in.

The line plot shows how much water each player drank during a basketball game. Use the line plot to answer the questions.



Water Drank (in gallons)

9. How many players drank water during the basketball game? 16 players
10. What is the difference between the greatest amount of water drank and the least amount of water drank? $\frac{3}{4}$ gal
11. **Error Analysis** Tony wants to find the total amount of water players drank during the game.

$\frac{1}{4} + \frac{3}{8} + \frac{1}{2} + \frac{5}{8} + \frac{3}{4} + \frac{7}{8} + 1 = 4\frac{3}{8}$ gallons

Is Tony's work correct? Explain why or why not.

No, it is not correct. Sample answer: He did not multiply the number of gallons by the number of tick marks. The correct amount is $9\frac{3}{4}$ gallons.

12. **Extend Your Thinking** Why is being able to solve problems involving data on line plots helpful for analyzing data?

Sample answer: Solving problems involving data on line plots can help us find sums, differences, etc. which gives important information and can help explain information or give predictions about certain things.

Reflect

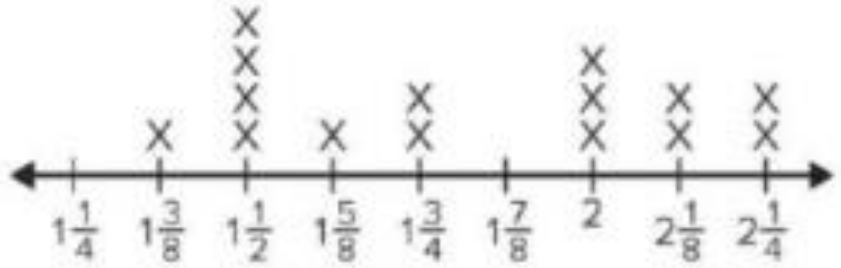
How can you use data displayed on a line plot to solve problems?

Answers may vary.

Math is... Mindset

How did you show others that you value their ideas?

For a science assignment, Candice tracked the amount of sugar that she consumed at lunch for 15 days. She recorded the data in a line plot.



Sugar Consumed (in teaspoons)

Use the line plot to choose the correct equation below. Do not solve the equation.

1. What is the difference between the greatest amount of sugar and the least amount of sugar that Candice consumed at lunch?

   a. $2\frac{1}{4} - 1\frac{1}{4} = ?$

   (b.) $2\frac{1}{4} - 1\frac{3}{8} = ?$

   c. $1\frac{1}{2} - 1\frac{3}{8} = ?$

   Explain your choice.

   Explanations may vary.

2. What is the total amount of sugar Candice consumed for the days she tracked 2 or more teaspoons?

   (a.) $6 + 4\frac{1}{4} + 4\frac{1}{2} = ?$

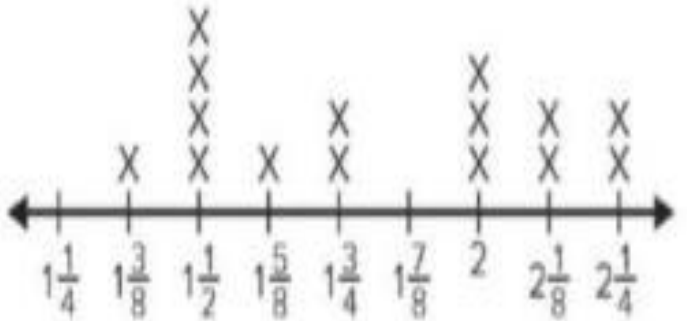
   b. $2 + 2\frac{1}{8} + 2\frac{1}{4} = ?$

   c. $2\frac{1}{8} + 2\frac{1}{8} + 2\frac{1}{4} + 2\frac{1}{4} = ?$

   Explain your choice.

   Explanations may vary.

For a science assignment, Candice tracked the amount of sugar that she consumed at lunch for 15 days. She recorded the data in a line plot.



Sugar Consumed (in teaspoons)

Circle true or false.

3. On the days that Candice tracked 2 teaspoons of sugar or less, she consumed a total of less than 7 teaspoons of sugar.

   True (False)

   Explain your choice.

   Explanations may vary.

4. During the 15 days, Candice consumed more than 24 teaspoons of sugar in all.

   (True) False

   Explain your choice.

   Explanations may vary.

Unit Review

Name _____

Vocabulary Review

Choose the correct word(s) to complete the sentence.

capacity	customary system	length	metric system
convert	data	line plot	weight
		mass	

1. Information collected from a survey or experiment is called **data**. (Lesson 12-4)

2. The **metric system** is the measurement system based on powers of 10 with units such as meter, gram, and liter. (Lesson 12-2)

3. To **convert** a measurement to another measurement means to change the unit of measure used but not the quantity or amount. (Lesson 12-1)

4. The **capacity** is the amount a container can hold. (Lesson 12-1)

5. A measurement system that includes units such as foot, pound, and quart is the **customary system**. (Lesson 12-1)

6. A **line plot** is a type of graph that uses columns of Xs or dots above a number line to show data. (Lesson 12-4)

7. **Mass** measures the amount of matter in an object. (Lesson 12-2)

8. **Length** is a measure of distance. (Lesson 12-2)

Review

9. What operation should you use to convert seconds to minutes? Explain your answer. (Lesson 12-1)

division; Sample answer: you are finding fewer of a greater unit

10. How many meters are equal to 3 kilometers? (Lesson 12-2)

3,000 m

11. Jolanna has $1\frac{1}{2}$ yards of decorative tape. She uses 1-inch pieces for her scrapbook. How many 1-inch pieces of decorative tape does she have? (Lesson 12-3)

A. 24 pieces
B. 36 pieces
C. 54 pieces
D. 90 pieces

12. It is recommended that a person sleep 8 hours every night. How many minutes does this person sleep in a year? (Lesson 12-1)

A. $48\frac{2}{3}$ minutes
B. 2,920 minutes
C. 175,200 minutes
D. 10,512,000 minutes

13. The art teacher has $3\frac{1}{4}$ gallons of paint for a mural on the wall. The students in fifth grade use $1\frac{1}{2}$ gallons. How many quarts of paint are left? (Lesson 12-3)

7 qt

14. How many meters equal 400 centimeters? (Lesson 12-2)

4 m

15. Catherine has a piece of fabric that is 3,200 centimeters long. She needs fabric pieces that are 1 meter long for her quilt. How can she determine the number of 1-meter long pieces she has for her quilt? (Lesson 12-3)

Sample answer: Divide by 100. 3,200 ÷ 100 = 32. Catherine has 32 1-meter pieces of fabric for her quilt.

16. Jamal picked 983 grams of blueberries. How many kilograms of blueberries did he pick? (Lesson 12-3)

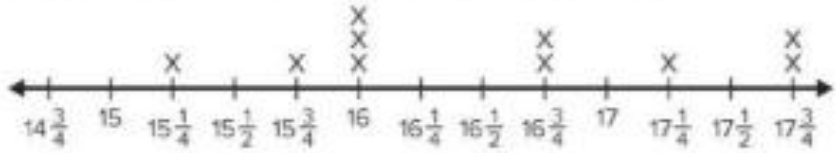
0.983 kg

17. An Olympic-size pool is 50 meters long. How can you determine the length in centimeters? (Lesson 12-3)

Multiply 50 × 100 = 5,000. The length of the pool is 5,000 centimeters.

MATH REPLAY | GO ONLINE

The line plot shows the length of the best long jump for each athlete at a Track and Field meet. Use the line plot to answer the questions.



Best Long Jump (in feet)

18. How many athletes are represented on the line plot? (Lesson 12-4)
10 athletes

19. How long is the longest jump? (Lesson 12-4)
$17\frac{3}{4}$ ft

20. How long is the shortest jump? (Lesson 12-4)
$15\frac{1}{4}$ ft

21. What measurement(s) occurred most often? (Lesson 12-4)
16 feet

22. How many jumps are longer than 16 feet? (Lesson 12-4)
5 jumps

23. How many jumps are 16 feet or shorter? (Lesson 12-4)
5 jumps

24. What does no mark above a measurement mean? (Lesson 12-4)
Sample answer: The best jump for each athlete was not that length.

25. What is the difference between the greatest jump length and the least jump length? (Lesson 12-5)
$2\frac{1}{2}$ ft

Performance Task

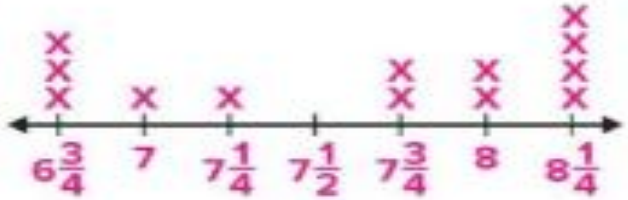
A town is redesigning a park. It will include a tree house.

Part A: The tree house, that the architect designed has a rectangular floor. He will use wooden tiles that are 20 centimeters wide and 40 centimeters long. How many tiles will he need for a floor that is 4 meters wide and 8 meters long?

Check students' work; 400 tiles

Part B: The architect plans to use wooden boards to build the walls. The boards will be different lengths. The construction manager needs to see what size boards he currently has to determine what he needs to purchase. Create a line plot to show his current inventory listed in the table.

Current Inventory	
Length (feet)	Total
$8\frac{1}{4}$	4
7	1
$7\frac{3}{4}$	2
$6\frac{3}{4}$	3
$7\frac{1}{4}$	1
8	2



Reflect

How can you use line plots to make decisions about a data set?
Answers may very.