Chapter 17

Name _____

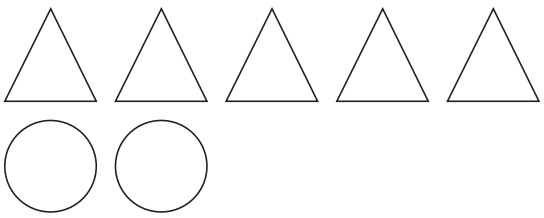
Represent and Interpret Data

Show What You Know

Make Tally Tables

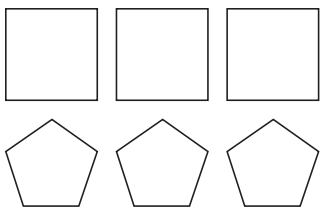
Draw tally marks to show the number of each type of shape.

1.



Number of Shapes	
triangle	
circle	

2.



Number of Shapes	
square	
pentagon	

Use Models to Add Fractions with Like Denominators

Shade the fraction strips to show the addition. Write the sum.

3. $\frac{1}{6} + \frac{3}{6}$

1					
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

4. $\frac{3}{8} + \frac{4}{8}$

1							
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

Use Models to Subtract Fractions with Like Denominators

Shade the fraction strips to show the subtraction. Write the difference.

5. $\frac{7}{10} - \frac{4}{10}$

1									
$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$

6. $\frac{5}{6} - \frac{1}{6}$

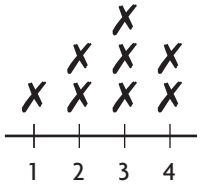
1					
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

Vocabulary Builder

Go Online | For more help

Visualize It

Write the term next to its example.



Number of Brothers

Ages of Attendees

Stem	Leaves
1	3 4 9
2	0 2 7
3	1 2 2 8
5	3 3 7 9

Favorite Subject	
Subject	**Frequency**
English	7
math	15
history	4
art	8

Connect to Vocabulary

Review Words

✓ tally table

Preview Words

✓ line plot

✓ frequency table

median

mode

range

✓ stem-and-leaf plot

Understand Vocabulary

Complete the sentences by using the review and preview words.

1. A _____ uses tally marks to record data.
2. A graph that records each piece of data on a number line is called a _____.
3. A _____ is a graph of data arranged by place value.
4. A table that uses numbers to record data about how often something happens is called a _____.

Name _____

Frequency Tables

I Can collect and represent data in a frequency table.

Florida's B.E.S.T.
- **Data Analysis & Probability** 4.DP.1.1, 4.DP.1.3
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.4.1, MTR.7.1

UNLOCK the Problem

A **frequency table** is a table that uses numbers to record data about how often something happens. The **frequency** is the number of times the data value occurs.

Tony's Reading Times (min.)				
30	60	30	90	30
120	60	60	30	90
120	120	90	60	30

Example 1

Tony kept a table of the number of minutes he read each day during a 15-day period. He wants to represent this data in a frequency table. Make a frequency table using the data from the table.

STEP 1

How many different numbers of minutes should be listed?

_____

STEP 2

Record the frequency of each number of minutes from Tony's Reading Times table in the Frequency column.

Tony's Reading Times	
Minutes	Frequency
30	5
60	4
_____	_____
_____	_____

- How would the data in Tony's table change if he recorded the number of minutes he read during a 20-day period instead of a 15-day period?

_____

_____

Math Talk

MTR 7.1 Apply mathematics to real-world contexts.

Why is a frequency table helpful for displaying data?

Ask 10 people how many movies they have seen in the last week. Use the results to make a frequency table.

Movies Watched per Week			

Movies Watched per Week	
Number of movies watched	Frequency
0	
1	
2	
3	

Example 2

Jasmine went for a walk each day. She recorded the distance she walked in a table. You can use the data in the table to make a frequency table.

Distance Walked (mi)				
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{1}{2}$
$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{4}$

STEP 1

List the distances that Jasmine walked in the Miles column of the frequency table.

STEP 2

Record the frequency of each distance in the Frequency column.

Distance Walked	
Miles	Frequency
_____	_____
_____	_____
_____	_____

- Explain how creating a frequency table whose data is in fractions is similar to creating a frequency table where the data is in whole numbers.

_____

_____

_____

Share and Show

Math Board

1. Use the data in the table to complete the frequency table.

Time Spent Doing Homework (h)				
0.25	0.5	0.5	0.75	0.25
0.75	0.25	1	0.75	0.25
0.5	1	1.5	0.25	0.5

STEP 1: The title of the frequency table is _____.

The two column titles are _____ and _____.

STEP 2: List the number of hours in the Hours column:

_____, _____, _____, _____, _____

STEP 3: List the frequency of each amount of time in the Frequency table:

_____, _____, _____, _____, _____

Name _____

2. Make a frequency table using the data in the table.

Time Spent Studying (h)				
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	1

3. Make a frequency table using the data in the table.

Distance Traveled on Bike (km)				
4.2	7.5	3.9	9.6	7.5
11	3.9	4.2	4.2	9.6
11	4.2	7.5	3.9	7.5

On Your Own

4. Gloria likes to hike every Saturday. She records the number of miles she hikes each day. Use the data in the Distance Hiked table to make a frequency table.

MATH on the Spot

Distance Hiked (mi)			
7	15	8	12
8	8	7	15
15	15	8	8
12	7	8	12

5. Explain how you would use the data in the table to make a frequency table. Then represent the data in a frequency table.

Amount of Pizza Left			
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{1}{4}$
$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{2}$
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{8}$

Problem Solving · Applications

Fill in the bubble completely to show your answer.

6. Peril made a table to show the lengths of the trails he biked.

Length of Trail (km)			
10.5	8.2	12.7	10.5
15.8	12.7	10.5	15.8
15.8	12.7	8.2	12.7
10.5	12.7	8.2	10.5

If Peril were to create a frequency table from this data, what number would he use to show the number of times he biked the 10.5-mile trail?

Ⓐ 2 Ⓒ 3

Ⓑ 4 Ⓓ 5

Use the table at the right for Problems 7 and 8.

Leticia has 4 different routes that she goes on when she walks her dog. She made a table to show when she took each of the 4 routes.

Miles Walked with Dog			
$\frac{1}{2}$	$2\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{1}{2}$
$1\frac{3}{4}$	$1\frac{3}{4}$	$\frac{1}{2}$	$1\frac{1}{2}$
$2\frac{1}{8}$	$2\frac{1}{8}$	$1\frac{3}{4}$	$\frac{1}{2}$

7. If Leticia made a frequency table from this data, what number would she show for the number of times she walked $1\frac{3}{4}$ miles?

Ⓐ 3 Ⓒ 2

Ⓑ 5 Ⓓ 4

8. What number would Leticia put for the frequency of $\frac{1}{2}$ mile?

Ⓐ 2 Ⓒ 4

Ⓑ 3 Ⓓ 5

9. As a fundraiser, several students were asked to sell soda during a baseball game. Mica made a table to keep track of the number of sodas each student sold.

Number of Sodas Sold			
12	10	8	7
7	8	7	10
12	12	10	10
10	10	8	10

If Mica were to create a frequency table from this data, what number would he use to show the number of students who sold 10 sodas?

Ⓐ 3 Ⓒ 10

Ⓑ 5 Ⓓ 7

Name _____

Frequency Tables

Go Online
Interactive Examples

1. Make a frequency table using the data in the table.

Distance Rowed (km)				
3.4	4.9	3.4	5.2	2.7
3.4	5.2	5.2	2.7	1.6
4.9	4.9	3.4	3.4	4.9

2. Make a frequency table using the data in the table.

Books Checked Out				
2	6	3	5	2
3	2	7	3	6
6	3	5	2	3

Problem Solving Real World

3. Oistin made a table to show how many hits each baseball player got in 2 games. Use the data from the table to make a frequency table.

Number of Hits					
0	1	1	2	3	3
1	1	1	0	2	3
4	2	2	1	4	0

4. Sahara made a table to show how many pounds of paper were left in the recycle bin each day. Use the data from the table to make a frequency table.

Paper Left in Recycling Bin (lb)				
$10\frac{1}{4}$	$14\frac{1}{8}$	$12\frac{7}{8}$	$10\frac{1}{4}$	$18\frac{3}{4}$
$12\frac{7}{8}$	$18\frac{3}{4}$	$14\frac{1}{8}$	$18\frac{3}{4}$	$14\frac{1}{8}$
$18\frac{3}{4}$	$13\frac{9}{16}$	$10\frac{1}{4}$	$18\frac{3}{4}$	$10\frac{1}{4}$

Lesson Check

Fill in the bubble completely to show your answer.

5. Marius made a table showing the number of baskets he made during 15 basketball practices.

Number of Baskets Made				
12	14	24	18	20
8	17	20	14	14
16	19	20	19	18

If Marius were to make a frequency table from this data, what number would he use to show the number of times he made 14 baskets?

Ⓐ 5 Ⓒ 3

Ⓑ 0 Ⓓ 4

6. Lalo made a table to show the number of miles she walked.

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

If Lalo were to make a frequency table from this data, what number would she use to show the number of times she walked $1\frac{1}{2}$ miles?

Ⓐ 4 Ⓒ 1

Ⓑ 2 Ⓓ 3

Spiral Review

7. Convert.

14 centimeters = _____ millimeters

7 meters = _____ centimeters

8. Convert.

5 gallons = _____ quarts

8 pints = _____ cups

9. Write the mixed number as a fraction.

$4\frac{2}{5}$ = _____

10. What fraction of a circle is 270°?

_____

Name _____

Use Frequency Tables

I Can solve problems using a frequency table.

Florida's B.E.S.T.

- **Data Analysis & Probability** 4.DP.1.1, 4.DP.1.3
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.6.1

UNLOCK the Problem

Example 1

Michel asked his friends the weight of their small dogs. He recorded the frequency of each weight in a frequency table. How many of Michel's friends have dogs that weigh 9 pounds?

Think: The number in the Frequency column is the number of friends who said they have dogs that weigh the weight listed in the Pounds column.

Michel has _____ friends who have dogs that weigh 9 pounds.

Weight of Dogs (lb)	
Pounds	Frequency
8	2
9	3
10	1
11	0
12	4
13	2

- How many more of Michel's friends have dogs that weigh 12 and 13 pounds than friends with dogs that weigh 10 and 11 pounds? _____

Example 2

To train for a cross-country track meet, Doro and his teammates practiced running through the woods. Doro's coach recorded in a frequency table the distances that they ran. How many of Doro's teammates ran more than 2 miles?

Think: Add the number in the Frequency column for the students who ran more than 2 miles.

_____ of Doro's teammates ran more than 2 miles during practice.

Miles Ran During Practice	
Miles	Frequency
1.1	8
1.4	4
1.8	2
2.2	7
2.6	1

- How many of Doro's teammates ran during practice? _____
- How many more teammates ran 1.1 miles or 2.2 miles than ran 1.4, 1.8, or 2.6 miles combined? _____

Example 3

Brendan's mom recorded the amount of time Brendan spent practicing the piano every day for 1 month. Which amount of time did Brendan practice most often?

Think: Look for the greatest number in the Frequency column to determine which amount of time he spent practicing most often.

Brendan practiced the piano most often for _____ of an hour.

Time Spent Practicing Piano (hour)	
Hours	Frequency
$\frac{1}{6}$	2
$\frac{1}{4}$	4
$\frac{1}{2}$	8
$\frac{4}{6}$	9
$\frac{3}{4}$	8

- Did Brendan spend more days practicing the piano more than $\frac{1}{2}$ hour or less than $\frac{1}{2}$ hour? _____
- Which two times did Brendan practice the least amount of times? _____

Share and Show

Math Board

Use the frequency table for Problems 1–3.

Distance to Grocery Store	
Miles	Frequency
1.2	6
1.8	7
2.1	2
2.4	12
3.7	9
4.1	3

1. Rita asked 39 people how many miles they live from the closest grocery store. She recorded their answers in a frequency table. How many people live 1.8 miles or 3.7 or more miles from the grocery store?

The number of people who live 1.8 miles from the store is _____.

The number of people who live 3.7 or more miles from the store is _____.

_____ + _____ = _____; _____ people live 1.8 miles or 3.7 or more miles from the store.

2. How many people live less than 2.4 miles from the grocery store? _____

3. How many people drive more than 8 miles to the grocery store and back? _____

Name _____

On Your Own

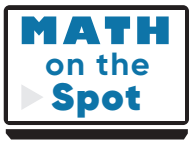
Use the frequency table for Problems 4–6.

Number of Miles Hiked	
Miles	Frequency
$2\frac{1}{4}$	15
3	7
$3\frac{1}{2}$	11
$4\frac{3}{4}$	3
$5\frac{1}{8}$	5
$5\frac{3}{4}$	1

4. Jake asked a group of friends he hikes with how many miles they hiked during their vacations. How many of Jake's friends hiked at least $2\frac{1}{4}$ miles during their vacations?

_____

5. How many more friends hiked 3 miles or less than friends who hiked $3\frac{1}{2}$ miles or more? Explain your answer.



_____

_____

_____

_____

6. Explain how you would find the number of Jake's friends who hiked between $2\frac{1}{4}$ and $4\frac{3}{4}$ miles.

_____

_____

Use the frequency table for Problems 7 and 8.

Number of T-Shirts Sold	
T-shirts	Frequency
15	7
20	8
25	14
30	21
35	3
40	5

7. During a fundraiser, students were asked to sell T-shirts. The school recorded the number of students who sold T-shirts in a frequency table. How many students sold more than 20 T-shirts?

_____

8. How many T-shirts did the most number of students sell? How many total T-shirts were sold by those students? Explain.

_____

_____

_____

Problem Solving · Applications

Fill in the bubble completely to show your answer.

9. Monica recorded the number of students and the length of time it took each to play a math game. How many more students took $\frac{1}{2}$ hour to play the game than students who took $\frac{3}{4}$ hour or 1 hour combined?

Ⓐ 17

Ⓑ 6

Ⓒ 20

Ⓓ 1

Time to Complete a Math Game (h)	
Hours	Frequency
$\frac{1}{4}$	11
$\frac{1}{2}$	18
$\frac{3}{4}$	8
1	9

Use the Age of Chorus Members frequency table for Problems 10 and 11.

10. There are half as many 12-year-old chorus members as there are 14-year-olds. How many 12-year-old chorus members are there?

Ⓐ 2

Ⓑ 10

Ⓒ 6

Ⓓ 8

11. How many fewer 13-year-olds are there in chorus than 10-year-olds and 14-year-olds combined?

Ⓐ 19

Ⓑ 9

Ⓒ 15

Ⓓ 16

Age of Chorus Members	
Age	Frequency
10	7
11	4
12	
13	10
14	12
15	1

12. Dafnie and her friends like to ride bikes. How many of Dafnie's friends combined rode their bikes either less than 1.1 miles or more than 2.0 miles?

Ⓐ 23

Ⓑ 24

Ⓒ 11

Ⓓ 12

Distance Biked (miles)	
Miles	Frequency
0.8	4
1.0	8
1.4	5
1.9	1
2.2	7
2.4	4

Name _____

Use Frequency Tables

Go Online
Interactive Examples

Use the frequency table for Problems 1–4.

Number of Boxes of Cookies Sold	
Boxes	Frequency
25	4
30	6
35	7
40	5
45	2
50	1

1. Tira is in charge of cookie sales for her scout troop. How many members sold more than 40 boxes of cookies?

2. How many members sold fewer than 40 boxes of cookies?

3. How many boxes of cookies did the most number of members sell?

4. How many members are represented in Tira's frequency table?

Problem Solving Real World

Use the frequency table for Problems 5–7.

Number of Absences	
Absences	Frequency
0	36
1	10
2	15
3	4
4	2

5. The table shows the number of absences in the fourth grade during the school year. How many students were absent either 1 or 2 times during the school year?

6. How many students were absent more than 2 times during the school year?

7. **Multi-Step** How many more students were absent 2 days or less than students who were absent 3 days or more? Explain your answer.

Lesson Check

Fill in the bubble completely to show your answer.

Use the Grade of Marching Band Members frequency table for Problems 8 and 9.

8. There are half as many 11^{th} grade students in the band as there are 9^{th} grade students. How many 11^{th} grade students are in the band?

Ⓐ 42

Ⓑ 84

Ⓒ 51

Ⓓ 17

Grade of Marching Band Members	
Grade	Frequency
9	84
10	51
11	
12	34

9. How many more 9^{th} grade students are in the band than 10^{th} grade students?

Ⓐ 50

Ⓑ 9

Ⓒ 33

Ⓓ 51

Spiral Review

10. Willa went surfing with her mother at 9:30 a.m. They surfed for 2 hours and 15 minutes. At what time did they stop surfing?

11. Kofi says that school will be out in 8 weeks and 3 days. How many days is this in all?

12. Lainey paid $2.47 for an item and gave the sales clerk a 5-dollar bill. How much change did Lainey get back?

Name _____

Determine Mode, Median, and Range

Florida's B.E.S.T.

- **Data Analysis & Probability** 4.DP.1.2, 4.DP.1.3
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.3.1, MTR.5.1

I Can describe a set of data using median, mode, and range.

UNLOCK the Problem Real World

You can use **median**, **mode**, and **range** to describe a set of data.

A group of students in Kenny's class wrote down the ages of their oldest relatives. The ages are shown in the table to the right. Describe the ages using the median, mode, and range.

Relative	Age
Kenny's great aunt	84
Susan's grandfather	72
Terry's grandmother	83
Max's great uncle	85
Trevor's great grandfather	92
Lucia's great aunt	85
Stephanie's grandmother	80
Harry's grandfather	83
Michelle's great uncle	85

Use median to describe the data.

The median is the middle number when the data is arranged in order. Write the ages in order from least to greatest. The age in the middle of the list will be in the circle.

_____ _____ _____ _____ ◯ _____ _____ _____ _____

The median is _____. So, four relatives are younger than _____, and four relatives are older than _____.

Use mode to describe the data.

The mode is the value found most often in a set of numbers. If no value occurs more than once, there is no mode. Look at your ordered list of the data. You can see that 85 occurs more often than any of the other ages.

The mode is _____. So, more of the relatives are _____ years old than any other age.

Use range to describe the data.

The range is the difference between the greatest value and least value in a data set.

The greatest age is _____. The least age is _____. Subtract to find the range: _____ − _____ = _____

The range is _____. So, the spread of the data is _____ years.

Describe data with more than one mode.

A set of data can have more than one mode. Look at the data in the table. What is the mode?

Month	Rainfall (in.)
April	$\frac{2}{8}$
May	$\frac{1}{8}$
June	$\frac{1}{8}$
July	$\frac{7}{8}$
August	$\frac{5}{8}$
September	$\frac{8}{8}$
October	$\frac{2}{8}$

List the data in order from least to greatest.

_____

Which numbers occur the most number of times?

_____

So, the modes of the data are _____.

Common Error

Remember to write the values in order before finding the mode or median.

Describe the median and range of the data set.

What is the median of the data set?

_____

How is the median related to the amount of rain measured?

_____

_____

_____

What is the range of the data set?

_____

Math Talk

MTR 2.1 Demonstrate understanding in multiple ways.

Describe a set of data that has no mode.

How is the range related to the amount of rainfall?

_____

_____

_____

Share and Show

Math Board

Find the median, mode, and range.

1. Miniature-golf scores: 69, 72, 74, 73, 73, 72, 75, 73, 70, 71, 90, 72, 91

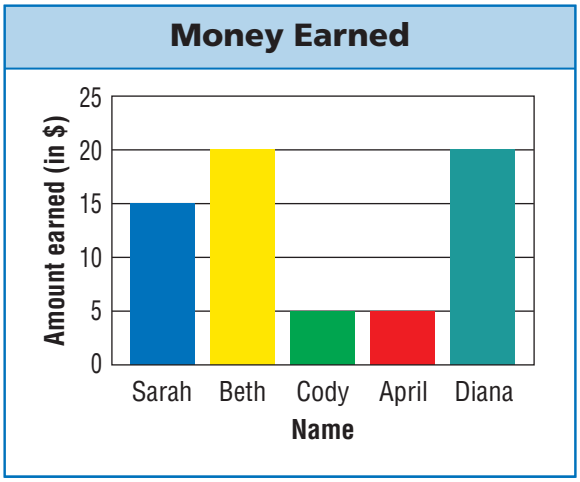
   median: _____ mode: _____ range: _____

2. Ages of Kara's aunts and uncles: 44, 41, 42, 45, 60, 41, 50, 33, 41

   median: _____ mode: _____ range: _____

Name _____

Use the data in the bar graph at the right for Problems 3 and 4.



3. Find the median. _____

Find the mode. _____

Find the range. _____

4. Is it reasonable to say that half the students earned $10 or less? Explain.

_____

_____

_____

_____

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Explain why writing the data values in order makes it easier to find the median, mode, and range.

On Your Own

Find the median, mode, and range.

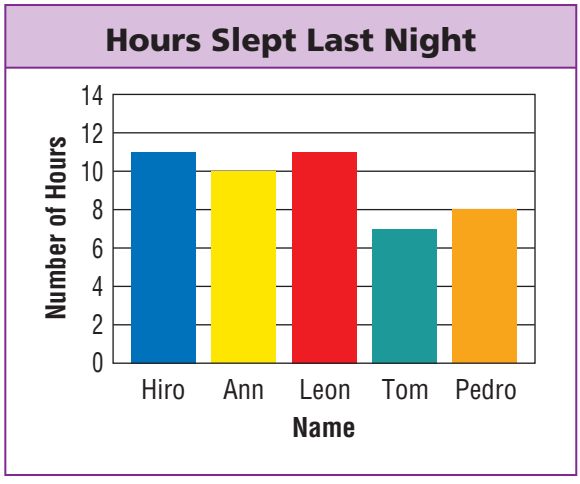
5. Nathan's math test scores: 84, 70, 84, 91, 91, 86, 100

median: _____ mode: _____ range: _____

6. Number of students in class: 22, 18, 24, 19, 20, 29, 20, 29, 20

median: _____ mode: _____ range: _____

Use the data in the bar graph at the right for Problems 7 and 8.



7. Find the median. _____

Find the mode. _____

Find the range. _____

8. Jarrod says the range of data is 11 hours. What is his error?

_____

_____

_____

Problem Solving Real World

Use the table for Problems 9–13.

Daily High Temperature (°F) This Week in Cincinnati, Ohio	
Day	**Temperature (°F)**
Monday	70
Tuesday	67
Wednesday	71
Thursday	71
Friday	72
Saturday	70
Sunday	76

9. What is the median daily high temperature?

_____

10. What is the mode of the temperatures?

_____

11. WRITE *Math* Fred said that 71° F was the daily high temperature more often than any other temperature in Cincinnati this week. Is his statement reasonable? Explain.

_____

_____

_____

12. What's the Question? It is 9° F.

_____

13. What is the difference between the median temperature for Monday, Tuesday, Wednesday and the median temperature for Thursday, Friday, Saturday?

_____

14. Chow wrote the equation below to find the range of the set of data, 6, 8, 9, 9, 5, 6, 8. Find the missing digits in her equation.

$\square - \square = 4$

15. The table shows the number of students in five different school districts.

School district	Number of students
Greenville	1,203
Madison	2,289
West Orange	1,203
Hudson Falls	3,998
Vollero	1,619

Which school district represents the median number of students?

Ⓐ Madison Ⓒ Hudson Falls

Ⓑ West Orange Ⓓ Vollero

Name _____

Determine Mode, Median, and Range

Go Online
Interactive Examples

Find the median, mode, and range.

1. Number of points scored in basketball games: 82, 74, 70, 81, 67, 83, 74

   List the data in order from least to greatest. 67, 70, 74, 74, 81, 82, 83

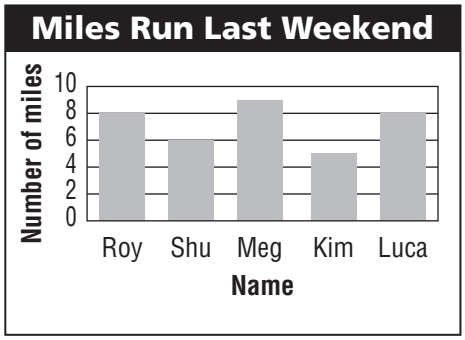
   67, 70, 74 74, 81, 82, 83 — 74 occurs twice. — $83 - 67 = 16$

   median: 74 mode: 74 range: 16

2. Number of hours worked per week: 25, 20, 16, 18, 20, 27, 26, 24, 26

   median: _____ mode: _____ range: _____

Use the data in the bar graph for Problems 3 and 4.



3. Find the median. _____

   Find the mode. _____

   Find the range. _____

4. Is it reasonable to say that about half the students ran 7 miles or more? Explain.

_____

_____

_____

_____

Problem Solving Real World

Use the table for Problems 5–7.

Class Attendance	
Day	Number of students
Mon	24
Tue	20
Wed	23
Thu	22
Fri	20

5. What is the median daily attendance? _____

6. What is the mode of the data? _____

7. Is it reasonable to say that most often 22 students attended class? Explain.

_____

_____

Lesson Check

Use the table for Problems 8 and 9.

Curl-Ups in One Minute	
Name	**Number of curl-ups**
Reed	35
Yashar	48
Jacob	46
Blanca	38
Elle	56
Leah	38

8. What value represents the range in the number of curl-ups that the students completed in one minute?

Ⓐ 18 Ⓒ 35

Ⓑ 21 Ⓓ 56

9. What value represents the mode number of curl-ups?

Ⓐ 21 Ⓒ 42

Ⓑ 38 Ⓓ 46

Spiral Review

10. Which is the best estimate for 36×313?

Ⓐ 1,200

Ⓑ 9,000

Ⓒ 12,000

Ⓓ 16,000

11. Mr. Marquez bought two of the same digital cameras for the school's photo club. He spent $378. How much money did he spend for each camera?

Ⓐ $139 Ⓒ $189

Ⓑ $184 Ⓓ $756

12. A toy store sold 1,523 new stuffed spiders the first week the toy was introduced. Each spider cost $8. How much money were the total sales of the stuffed spiders for the first week?

Ⓐ $8,164

Ⓑ $8,184

Ⓒ $12,164

Ⓓ $12,184

13. Which set of data is most appropriately displayed using a pictograph?

Ⓐ the weight per week of a baby seal

Ⓑ the total camp attendance each summer for ten years

Ⓒ the number of granola bars, packed in boxes of four bars, sold by three grocery stores

Ⓓ the amount of water used per day for one week

Name _____

Line Plots

Florida's B.E.S.T.
- **Data Analysis & Probability** 4.DP.1.1, 4.DP.1.3
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.3.1

I Can make a line plot to display a set of data with whole numbers and fractions.

UNLOCK the Problem

A **line plot,** also known as a dot plot, is a graph that shows the frequency of data along a number line.

Example 1

Scott is training to run a half-marathon. He recorded the distances he ran in a table. Use the data in the table to make a line plot.

Distance Scott Ran (miles)				
4	8	8	7	5
9	9	9	7	9
9	5	7	8	4

STEP 1

Order the data from the least to the greatest distance.

4, 4, _____, _____, _____, _____, _____, _____,

_____, _____, _____, _____, _____, _____, _____

Draw a number line. Label it with the distances. Write a title below the number line to describe the data.

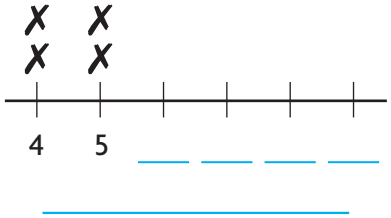
Label all distances on the number line that are in range from the least value to the greatest value. The data points for this line plot will be

_____, _____, _____, _____, _____, and _____.

STEP 2

To represent the data values, place two Xs above the 4 on the number line to show how many times Scott ran that distance.

Complete the line plot by placing the correct number of Xs above the distances on the number line.



_____

- Explain why a line plot is a useful way to organize and present data.

_____

_____

Example 2

Kristen practices her tennis serve every day. She records the amount of time she practices, in fractions of an hour. Use the data in the table to make a line plot to represent the data.

Time Spent Practicing Serving (hour)				
$\frac{1}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{1}{2}$
$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$
$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$

STEP 1

Order the data from the least to greatest fractional part of an hour. Draw a number line. Label it with the fractions. Write a title below it to describe the data.

The data points should start with the least fraction and end with the greatest fraction. The data points for this dot plot will be _____, _____, _____.

STEP 2

Place an X above each fraction on the number line to show how many times Kristen spent that amount of time practicing her serve.

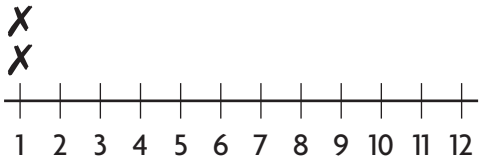
Time Spent Practicing Serving (h)

Share and Show

Math Board

1. Use the data in the Distance Biked table to complete the line plot.

Distance Biked (km)				
3	5	12	2	1
8	5	8	6	3
11	8	6	4	10
10	9	6	6	6
5	2	1	2	3



Distance Biked (km)

2. Make a line plot from the data in the table.

Number of Siblings				
2	2	1	1	3
4	0	1	1	0
2	2	1	3	4
1	0	0	2	0

Name _____

3. Make a line plot using the data in the table.

Size of Water Samples (gallons)				
$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{2}$
$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{2}$
$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$

4. Make a line plot using the data in the table.

Number of Cars Sold per Month				
11	14	12	12	11
14	16	11	10	14
10	10	11	13	10

Problem Solving Real World

MATH on the Spot

5. Martin wants to build some tool boxes for his friends. He plans to use wood that he already has. He listed the different lengths of the wood he has in a table. Use this data to create a line plot so Martin can easily visualize what lengths of wood he has.

Length of Wood Pieces (ft)			
$2\frac{5}{8}$	$2\frac{3}{8}$	$2\frac{1}{8}$	$2\frac{4}{8}$
$2\frac{2}{8}$	$2\frac{6}{8}$	$2\frac{3}{8}$	$2\frac{2}{8}$
$2\frac{6}{8}$	$2\frac{1}{8}$	$2\frac{5}{8}$	$2\frac{1}{8}$

6. Explain how you would use the data in the table to make a line plot. Then represent the data in a line plot.

Number of Playlists				
18	23	16	12	15
12	20	14	18	19
14	15	17	12	15

Problem Solving · Applications

Fill in the bubble completely to show your answer.

7. Some of the students in Jose's class counted the number of animals each of them saw during recess. Jose wants to make a line plot to represent the data. How many Xs will he place above the number 5?

Number of Animals Seen								
5	3	1	7	2	1	3	5	3

Ⓐ 1

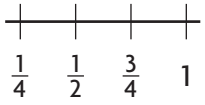
Ⓑ 3

Ⓒ 2

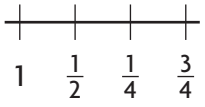
Ⓓ 5

8. Sara went to the beach for a week. She recorded the length of the shells she found each day in the table below. She wants to make a line plot to represent the lengths she recorded. Which shows the way Sara should label the fraction lengths on the number line?

Length of Seashells Found (in inches)								
$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{1}{4}$	$\frac{1}{4}$	1

Ⓐ 

Ⓒ 

Ⓑ 

Ⓓ 

9. The data in the table shows the lengths of some pieces of carpet that Justin has. He wants to make a line plot to show the data. How many Xs will Justin place above the $3\frac{1}{2}$?

Ⓐ 0

Ⓑ 1

Ⓒ 3

Ⓓ 4

Length of Carpet Pieces (ft)			
$3\frac{3}{4}$	$2\frac{3}{4}$	$2\frac{1}{2}$	$1\frac{1}{4}$
$2\frac{1}{4}$	$3\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{8}$
$3\frac{1}{4}$	$2\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$

Name

Line Plots

Go Online
Interactive Examples

1. Make a line plot using the data in the table.

Number of Vowels in First Name			
1	2	2	2
3	4	4	5
1	2	2	2
3	3	1	2
2	2	2	2

2. Make a line plot using the data in the table.

Time Spent Practicing Piano (in hours)			
$\frac{3}{4}$	1	$\frac{1}{2}$	$\frac{3}{4}$
$1\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1
1	$1\frac{1}{4}$	1	$\frac{1}{2}$
1	$\frac{1}{2}$	1	$\frac{1}{2}$

Problem Solving Real World

3. Rae took a walk through his neighborhood. He recorded the number of trees he saw in each yard. Use the data in the table to make a line plot to represent the data.

Number of Trees			
3	0	3	5
4	1	2	0
5	4	4	6
0	5	5	0
1	2	4	2
2	0	1	0

4. Kala recorded the amount of time it took her to walk to school each day. Use the data in the table to make a line plot to represent the data.

Time Spent Walking (in minutes)			
20	18	19	16
18	15	20	18
19	20	15	20
16	19	20	19

Lesson Check

Fill in the bubble completely to show your answer.

5. Mrs. Gopi counted the number of books that students in her class checked out from the library. She wants to make a line plot to represent the data. How many Xs will she place above the number 3?

Number of Books Checked Out								
2	5	4	5	2	3	2	3	2

Ⓐ 6

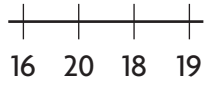
Ⓑ 3

Ⓒ 9

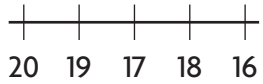
Ⓓ 2

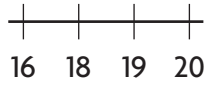
6. Anay recorded the time he spent watering his yard each day. He wants to make a line plot to represent the times he recorded. Which shows the way Anay should label the times on the number line?

Time Spent Watering (in minutes)							
16	20	16	18	16	20	19	18

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

Spiral Review

7. During summer camp registration children could choose either canoeing or yard games. 325 children registered for activities. If 178 children signed up for canoeing, how many more children signed up for canoeing than yard games?

_____

8. Lupe wants to rent a scooter. Scooter rentals cost $6.25 for every 15 minutes. If Lupe rents a scooter for one hour and fifteen minutes, how much will it cost her?

_____

9. One-hundredth less than 2.35 is _____

10. One-tenth more than 1.91 is _____

Name _____

Use Line Plots

Florida's B.E.S.T.

- **Data Analysis & Probability** 4.DP.1.1, 4.DP.1.2, 4.DP.1.3
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.3.1, MTR.6.1

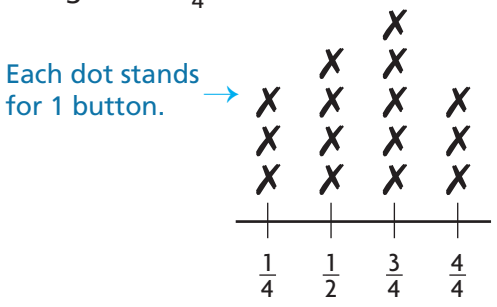
I Can use line plots to solve real-world problems involving whole numbers, fractions, and decimals.

UNLOCK the Problem

You can use a line plot to organize data to make the data visually easier to read.

Example 1

The line plot shows the lengths of the buttons in Jen's collection. For an art project, she wants to know how many buttons in her collection are longer than $\frac{1}{4}$ inch. How can she use a line plot to find the answer?



Button Length
(in inches)

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Explain how you answered question 3.

Count the number of dots above each of the button lengths on the line plot. There are _____ dots above $\frac{1}{4}$, _____ dots above $\frac{1}{2}$, _____ dots above $\frac{3}{4}$, and _____ dots above $\frac{4}{4}$.

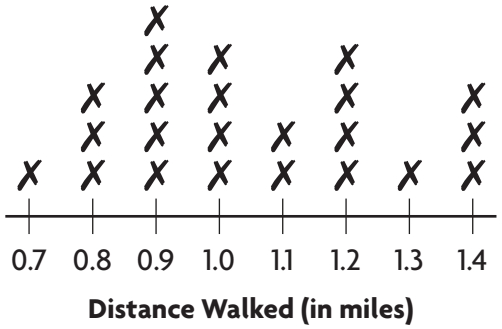
Since you are trying to find the number of buttons that have a length greater than _____, count the number of dots above the other fractions to find the answer.

So, _____ buttons in Jen's collection are longer than $\frac{1}{4}$ inch.

1. How many buttons does Jen have in her collection? _____
2. What is the mode of the data for the lengths of buttons? _____ How many buttons have this length? _____
3. Write and solve an equation to find the range. _____

Example 2 Use line plots to find the mode, range, and median.

Some of the students in Ms. Lee's class walk around the track during recess. The line plot shows the distances that the students walked. Find the mode, range, and median of the data.



STEP 1 Find the mode of the data set. How many people walked this distance?

_____ people walked _____ mile.

STEP 2 Find the range of the data. _____

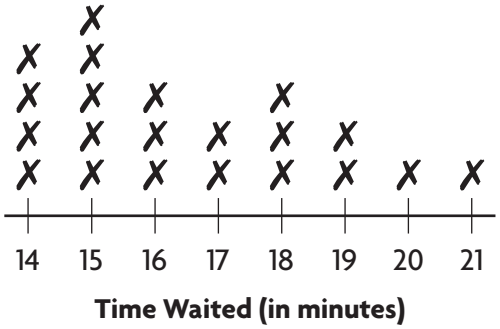
The range between the greatest and least distances walked is _____ mile.

STEP 3 Count the total number of students who walked around the track. What is the median distance walked?

_____ students walk around the class at recess. The median distance walked is _____ mile.

Share and Show Math Board

1. A restaurant manager collected data on the lengths of time customers waited for their food. He represents the data he collected in a line plot. What is the mode of the data values?



Think: Which number has the greatest number of Xs?

There are _____ Xs above the 15 on the dot plot.

So, more people waited for _____ minutes than any other time.

2. How many people did the restaurant manager collect data about?

_____

3. How many people waited 17 minutes or less for their food?

_____

4. Find the median.

_____

Math Talk

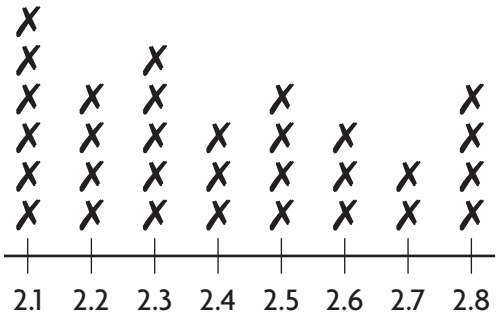
MTR 4.1 Engage in discussions on mathematical thinking.

A student said that there is more than one median for this data. Do you agree? Why or why not?

Name _____

Problem Solving Real World

Use the line plot for Problems 5 and 6.



Distance Lived from School (in miles)

5. A school collected data from some students about how far they live from the school. What is the range of distances that students live from school?

_____

6. Marlina wants to know how many more students live more than 2.0 and less than 2.4 miles from school than live more than 2.5 and less than 2.9 miles from school. Explain how Marlina will determine the answer.

_____

_____

UNLOCK the Problem

7. The line plot shows the distances in miles that some of the track team ran to practice for an upcoming track meet. Altogether, did the students run more or less than 5 miles?

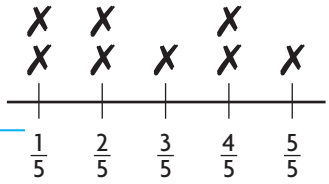
MATH on the Spot

a. What are you asked to find? _____

_____

b. What information do you need to use? _____

_____



Distance Track Team Ran (in miles)

c. How will the line plot help you solve the problem? _____

_____

d. Show the steps to solve the problem. _____

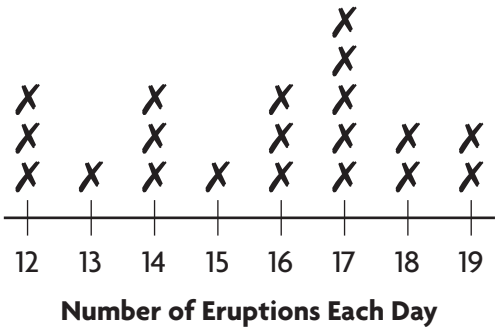
e. Complete the sentences. The team members ran a total of _____ miles.

Since _____ miles $<$ $>$ $=$ 5 miles, the students ran _____ than 5 miles.

Problem Solving · Applications

Fill in the bubble completely to show your answer.
Use the line plot for Problems 8–11.

Rae and his family took a trip to a national park. He made a line plot to show the number of eruptions made by a geyser each day for 20 days.



8. What value represents the mode in the number of eruptions that occur each day?

Ⓐ 18

Ⓑ 14

Ⓒ 17

Ⓓ 16

9. What is the least number of eruptions the geyser has in one day?

Ⓐ 18

Ⓑ 15

Ⓒ 13

Ⓓ 12

10. How many more times does the geyser have 17 daily eruptions than it has 15 and 16 eruptions combined?

Ⓐ 3

Ⓑ 1

Ⓒ 2

Ⓓ 5

11. What is the range of the number of geyser eruptions for the data?

Ⓐ 8

Ⓑ 9

Ⓒ 7

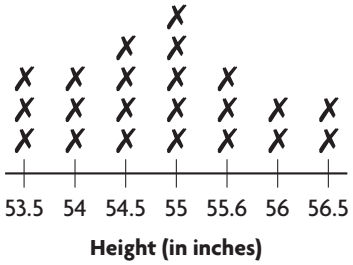
Ⓓ 12

Name _____

Use Line Plots

Go Online
Interactive Examples

Use the line plot for Problems 1-6.



1. Mr. Lennox collected data on the heights of the students in his class. He represents the data he collected in a line plot. How many students are 54.5 inches tall?

2. How many students did Mr. Lennox collect data about?

3. What is the mode of the class heights?

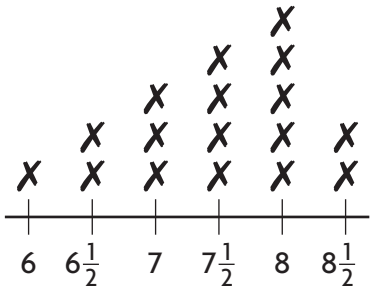
4. How many students are more than 55 inches tall?

5. What is the difference between the number of students who are 55 inches or less tall and the number of students who are more than 55 inches tall?

6. What is the range of heights?

Problem Solving Real World

Use the line plot for Problems 7-9.



7. Tajsa asked several people how many hours they slept each night. He represents the data he collected in a line plot. How many hours of sleep is most common?

8. What is the median number of hours slept?

9. How many more people sleep 8 or more hours than people who sleep 7 or less hours? Explain.

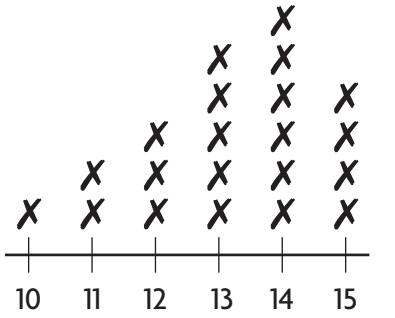
Lesson Check

Fill in the bubble completely to show your answer.
Use the line plot for Problems 10–12.

10. Mrs. Azuela gave her students a puzzle to solve. She made a line plot to show the number of minutes it took her students to solve the puzzle. How many students solved the puzzle in less than 15 minutes?

Ⓐ 21 Ⓒ 4

Ⓑ 11 Ⓓ 17



Time to Solve Puzzle (in minutes)

11. What is the mode of the times to solve the puzzle?

Ⓐ 12 minutes Ⓒ 14 minutes

Ⓑ 13 minutes Ⓓ 15 minutes

12. How many more students solved the puzzle in 14 or more minutes than solved the puzzle in 11 or less minutes?

Ⓐ 10 Ⓒ 8

Ⓑ 7 Ⓓ 3

Spiral Review

13. The number 4,297 is rounded to _____ when rounded to the nearest 100.

14. The number 7,539 is rounded to _____ when rounded to the nearest 1,000.

15. Write the number 562,139 in expanded form.

_____

_____

16. A group of 127 people are lined up to ride the new roller coaster. Only 12 people can fit on the ride at a time. How many times does the ride need to run to allow all the people waiting for it to ride?

_____

Name _____

Stem-and-Leaf Plots

I Can make stem-and-leaf plots with whole numbers.

Florida's B.E.S.T.
- **Data Analysis & Probability** 4.DP.1.1, 4.DP.1.3
- **Mathematical Thinking & Reasoning** MTR.3.1, MTR.6.1

UNLOCK the Problem

Henry kept track of the points of each of his words when he played a word game with his friend.

Word Game Score							
13	15	19	31	22	33	27	22

Then he used a stem-and-leaf plot to show the data.

A **stem-and-leaf plot** shows groups of data arranged by place value.

Make a stem-and-leaf plot.

STEP 1

Group the data by the tens digits.

10: 13, 15, _____

20: 22, _____, _____

_____: 31, _____

STEP 2

Order the tens digits from least to greatest. Draw a line.

1 | Each tens digit is called a stem.

2 |

3 |

STEP 3

Write each ones digit in order from least to greatest to the right of its tens digit.

1 | 3, _____, _____ Each ones digit is called a leaf.

2 | 2, _____, _____

3 | 1, _____

STEP 4

Include a title, labels, and a key.

Points Scored in Word Game

Stem	Leaves
1	3 _____
_____	_____
_____	_____

Key: 1 | 3 represents 13 points

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Explain how a stem-and-leaf plot uses place value.

Share and Show

1. Use the data in the table to make a stem-and-leaf plot.

Order the data in the table from _____

to _____.

The numbers _____, _____, _____ are stems.

The leaves for stem 2 are _____, _____, _____,

_____, _____.

Complete the stem-and-leaf plot.

Numbers of Floors of High-Rise Buildings							
31	37	48	26	33	34	43	38
38	30	27	32	40	45	38	39
27	29	30	33	28	45	43	43

Numbers of Floors of High-Rise Buildings

Stem	Leaves

Key: 2 | 6 represents 26 floors

2. Use the data in the Number of Jumps table to make a stem-and-leaf plot.

Number of Jumps							
10	22	12	11	20	25	31	26

3. Use the data in the Number of Different Beads table to make a stem-and-leaf plot.

Number of Different Beads							
12	33	10	14	24	26	31	37

Problem Solving

MATH on the Spot

4. Mike records his bowling scores and puts them in a table. He wants to easily see how many times he bowled a score in the 90s. Make a stem-and-leaf plot from the data in the table. Explain how Mike used the stem-and-leaf plot to determine how many times he bowled in the 90s.

_____

_____

Mike's Bowling Scores							
76	92	85	73	94	98	61	74
79	73	81	85	92	86	86	75
69	67	82	86	93	89	76	80

Name _____

5. Naomi conducted a science experiment where she recorded the high temperature each day for 24 days. She chose a stem-and-leaf plot to display her data. Make Naomi's stem-and-leaf plot.

High Temperature (°F)		
67	73	62
75	79	76
86	79	72
87	85	72
67	68	65
72	86	83
88	75	89
84	87	86

6. Bina was asked to make teams based on the height of the students in her class. She recorded each student's height, in inches, in a table. To more clearly see the different heights, she made a stem-and-leaf plot. Make Bina's stem-and-leaf plot.

Student's Height (in.)					
49	52	61	48	55	60
54	50	63	56	62	54
55	57	60	60	58	59

7. Explain the steps you would use to make the stem-and-leaf plot from the data in the table. Then make the stem-and-leaf plot.

Time Spent Reading (min)					
32	41	55	24	44	30
26	41	29	35	37	22
55	24	47	36	29	30

Problem Solving · Applications

Fill in the bubble completely to show your answer.

Use the table for Problems 8–11.

The data shows the number of jumping jacks completed by 15 students in one minute. Robert is making a stem-and-leaf plot to display the information.

Number of Jumping Jacks Completed in One Minute				
55	51	50	50	45
48	52	51	39	53
42	38	55	44	44

8. What are the stems for the stem-and-leaf plot?

Ⓐ 3, 5, 6

Ⓑ 0, 3, 4, 5, 9

Ⓒ 3, 4, 5

Ⓓ 0, 1, 2, 3, 5, 8, 9

9. How many leaves are in the stem-and-leaf plot?

Ⓐ 12

Ⓑ 10

Ⓒ 15

Ⓓ 3

10. Which could be a key for the stem-and-leaf plot?

Ⓐ 4 | 8 represents 84 jumping jacks.

Ⓑ 3 | 8 represents 38 jumping jacks.

Ⓒ 5 | 0 represents 5 jumping jacks.

Ⓓ 4 | 4 represents 4 jumping jacks.

11. In the stem-and-leaf plot that Robert is making, which stem would have the most leaves?

Ⓐ 3

Ⓑ 4

Ⓒ 5

Ⓓ 0

Name

Stem-and-Leaf Plots

Go Online
Interactive Examples

1. Use the data in the Daily Temperatures table to make a stem-and-leaf plot.

Daily Temperatures (°F)							
88	91	95	95	84	79	92	96

2. Use the data in the Minutes Spent Doing Homework table to make a stem-and-leaf plot.

Minutes Spent Doing Homework						
25	14	30	34	13	39	28

Problem Solving Real World

3. Atul recorded the number of points his team scored in ten basketball games and put them in a table. Make a stem-and-leaf plot from the data.

Points Scored in a Game				
24	34	25	28	28
25	26	30	32	32

4. The school librarian recorded the total number of books checked out from the library each day for two weeks. She put the data in a table. Make a stem-and-leaf plot from the data.

Number of Books Checked Out				
94	72	75	87	90
83	85	94	74	88

Lesson Check

Fill in the bubble completely to show your answer.

Use the table at right for Problems 5–7.

5. What are the stems for the stem-and-leaf plot?

Ⓐ 0, 1, 2, 4, 5, 6, 7, 8, 9,

Ⓑ 0, 1, 2, 3, 4

Ⓒ 1, 2, 3, 4

Ⓓ 2, 3, 4

6. Which stem has the most leaves?

Ⓐ 1

Ⓑ 2

Ⓒ 3

Ⓓ 4

7. How many more leaves are there for 2 than there are for 3 and 4 combined?

Ⓐ 5

Ⓑ 2

Ⓒ 3

Ⓓ 1

The data show the number of hours 16 students exercise in one month. Jen is making a stem-and-leaf plot to display the information.

Number of Hours Exercised in One Month			
18	28	22	20
34	30	19	25
42	19	27	41
25	38	26	28

Spiral Review

8. Mr. Martinez bought 4 new chess boards that each cost the same amount. He spent $51 total. How much money did he spend for each game board?

_____

9. Manolo biked from his house to the community center, a distance of $17\frac{3}{5}$ miles. Sim biked from her house to the school, a distance of $9\frac{1}{5}$ miles. How many miles less did Sim bike than Manolo?

_____

Name _____

Use Stem-and-Leaf Plots

I Can solve real-world problems using a stem-and-leaf plot.

Florida's B.E.S.T.

- **Data Analysis & Probability** 4.DP.1.1, 4.DP.1.2, 4.DP.1.3
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1

UNLOCK the Problem Real World

Example 1

While doing research for a project, Lila made a stem-and-leaf plot of the number of floors that different buildings in Chicago have. How many buildings have more than 40 floors?

Think: 41 is represented by 4 | 1 on the stem-and-leaf plot.

The number of floors in the buildings that have more than 40 floors are: _____

So, _____ buildings have more than 40 floors.

Number of Floors in Chicago Buildings

Stem	Leaves
1	2 2 5 7 7 7 7 9
2	5 6 7
3	4 6
4	1 4
5	0 1
6	0 4

Key: 1 | 2 represents 12 floors

- What is the median number of floors in the data set? _____ floors

Example 2

Each time Glenda practiced her free throws, she recorded the number of made baskets in a stem-and-leaf plot. How many times did Glenda make more than 20 free throws?

The number of times Glenda practiced her free throws and made more than 20 of them was: _____

Find the mode. _____ Find the range. _____

Number of Free Throws Made

Stem	Leaves
0	4 6 9 9
1	1 1 2 4 5 9
2	0 0 4 5 6 8 9
3	0 0 2 2 2 2 7

Key: 0 | 4 represents 4 free throws

- How many times did Glenda either make less than 10 free throws or more than 26 free throws? Explain.

_____

_____

Share and Show

Use the stem-and-leaf plot for Problems 1–3.

Time Spent Reading (min)

Stem	Leaves
1	3 5 5 5
2	0 0 0 5 8 8
3	0 0 3 3 5 9
4	0 0 2 5 5 5
5	0 2 3 5 5
6	3

Key: 1 | 3 represents 13 min

1. Martin kept track of the time he spent reading in a stem-and-leaf plot. How many times did Martin read for 40 or more minutes?

Think: Count the number of leaves that are after stems 4, 5, 6.

Martin read for 40 or more minutes _____ times.

2. What are the modes? Why is there is more than one mode?

_____

_____

3. How many more times did Martin read for less than 39 minutes than he read for more than 39 minutes?

_____

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Explain how you found the answer to Problem 3.

Problem Solving

Use the stem-and-leaf plot for Problems 4–7.

Minutes Spent Doing Chores

Stem	Leaves
2	2 2 4 6
3	0 5 5 8
4	0 6
5	5 8
6	2
7	1 4

Key: 2 | 2 represents 22 min

4. Stephanie asked her 23 classmates how much time they spent doing chores in a week. She recorded the data in a stem-and-leaf plot. How many classmates said that they spend some time doing chores in a week?

_____

5. How many classmates said that they spent more than 20 minutes and less than 40 minutes doing chores a week?

_____

6. How many classmates said they didn't do any chores? Explain.

_____

_____

7. Of the people who said they spent time doing chores, what was the median time spent?

_____

MATH on the Spot

Name _____

Use the stem-and-leaf plot for Problems 8–10.

Daily Low Temperature (°F)

Stem	Leaves
3	7 9 9
4	1 4 4 8
5	0 3 4 9 9
6	1 1 2

Key: 3 | 7 represents 37 °F

8. Tina records the daily low temperature for 15 days in the stem-and-leaf plot. What is the median temperature? What does the median temperature mean in this situation?

_____

_____

9. What is the range in daily low temperatures?

_____

10. Explain how to find how many more days the low temperature was greater than 53° F than less than 53° F.

_____

_____

_____

Use the stem-and-leaf plot for Problems 11–14.

Score of Basketball Games

Stem	Leaves
4	0 5 8
5	1 4 4 6 7
6	2 2 7 8 9 9
7	4 4 6 6
8	1
9	0

Key: 4 | 0 represents 40 points

11. Nick recorded the number of points his basketball team scored during its season in a stem-and-leaf plot. How many games did Nick's basketball team play?

_____

12. What are the modes of the basketball scores?

_____

13. During how many more games did Nick's team score less than 68 points than they scored more than 68 points?

_____

14. Explain how the stem-and-leaf plot would change if Nick's basketball team played 8 more games and it scored more than 65 points each game?

_____

_____

Problem Solving · Applications

Fill in the bubble completely to show your answer.

15. The stem-and-leaf plot at the right shows the number of programs that different vendors sold during a sporting event. How many vendors sold between 20 and 30 programs?

Ⓐ 1 Ⓒ 5

Ⓑ 4 Ⓓ 3

Programs Sold

Stem	Leaves
1	3
2	1 3 6 6 8
3	2 5 4
4	1 7 7

Key: 1 | 3 represents 13 programs sold

Use the stem-and-leaf plot for Problems 16 and 17.

The stem-and-leaf plot at the right shows the bowling scores for members of a bowling team.

16. What is the highest score that is bowled?

Ⓐ 69 Ⓒ 78

Ⓑ 99 Ⓓ 95

17. What is the range of the bowling scores?

Ⓐ 9 Ⓒ 69

Ⓑ 39 Ⓓ 99

Bowling Scores

Stem	Leaves
6	0 4 5 5 5 9
7	1 2
8	6 6 8 9
9	0 1 4 5 6 9

Key: 6 | 0 represents 60 points

18. The stem-and-leaf plot at the right shows the number of stuffed animals Sara and her friends have. How many of Sara's friends have more than 10 stuffed animals?

Ⓐ 12 Ⓒ 8

Ⓑ 6 Ⓓ 7

19. What value represents the median in the number of stuffed animals Sara and her friends have?

Ⓐ 5 Ⓒ 12

Ⓑ 8 Ⓓ 21

Number of Stuffed Animals Owned

Stem	Leaves
0	3 5 5 8 8
1	0 2 2 2 3
2	1 1 4

Key: 0 | 3 represents 3 stuffed animals

Name _____

Use Stem-and-Leaf Plots

Go Online
Interactive Examples

1. Wen used a stem-and-leaf plot to record the number of football cards that he and his friends have collected. How many friends have collected 50 or more cards?

_____

2. What is the range of the number of football cards collected?

_____

3. How many friends have collected between 30 and 50 cards?

_____

Number of Football Cards Collected

Stem	Leaves
1	9
2	3 5
3	6 8 9
4	2 2 4 8
5	1 3 5 6 9
6	1 4 7

Key: 1 | 9 represents 19 cards

4. How many more friends have collected more than 40 cards than have collected less than 40 cards?

_____

Problem Solving Real World

5. The girls on Yu's soccer team sold boxes of cards to raise money for new uniforms. Yu recorded data about their sales in a stem-and-leaf plot. How many girls sold more than 30 boxes of cards?

_____

6. What is the median number of boxes of cards sold?

_____

7. How many girls on the team sold cards? Explain.

_____

_____

_____

Boxes of Cards Sold

Stem	Leaves
2	2 2 4
3	1 3 4 5 5 9
4	5 8 9
5	1

Key: 2 | 2 represents 22 boxes

8. Explain how the stem-and-leaf plot would change if another girl on Yu's soccer team sold 60 boxes of cards.

_____

_____

Lesson Check

Fill in the bubble completely to show your answer.

Use the table at right for Problems 9–11.

9. The stem-and-leaf plot at the right shows the ages of people who attended a dog obedience class. What was their median age?

Ⓐ 9

Ⓑ 21

Ⓒ 23

Ⓓ 33

Ages of People Who Attended a Dog Obedience Class

Stem	Leaves
0	9
1	2 5 5 5 8 9
2	1 3 4 4 6
3	3 4
4	2

Key: 0 | 9 represents 9 years of age

10. Which age group was most widely represented at the class?

Ⓐ teens

Ⓑ twenties

Ⓒ thirties

Ⓓ forties

11. How many more people were over 20 years old than were under 20 years old?

Ⓐ 8

Ⓑ 1

Ⓒ 2

Ⓓ 7

Spiral Review

12. Anita is making a bookmark for her friend Estrella. She cuts the paper to be 3 inches by 7 inches. She realizes the paper is too long, so she cuts off 1 inch from the bottom. What is the area of her bookmark?

_____

13. $0.31 + 0.42 =$ _____

14. Alfred bought 2.9 pounds of peaches and 0.6 pound of blueberries at the farmers' market. What is the total weight of the fruit?

_____

Name _____

Chapter 17

Chapter Review

1. What is the median of the data set?

7, 3, 4, 6, 4, 6, 5, 5, 5

Ⓐ 4 Ⓑ 5 Ⓒ 6 Ⓓ 7

2. Janae and her classmates went to an apple orchard to pick apples. Janae recorded the number of apples some of her classmates picked.

Number of Apples Picked				
7	12	9	18	24
35	18	20	20	35
25	12	18	20	20

Part A

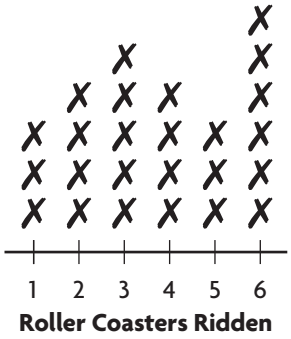
Make a stem-and-leaf plot of the data.

Part B

Make a frequency table of the data.

Use the Roller Coasters Ridden line plot for Problems 3–5.

The campers from a summer camp went on a field trip to an amusement park. During the trip, Vicki recorded how many roller coasters each camper went on. She recorded the data in a line plot.



3. What is the median number of roller coasters ridden?

Ⓐ 4 Ⓒ 6

Ⓑ 5 Ⓓ 25

4. How many campers rode 2 or more roller coasters?

Ⓐ 18 Ⓒ 19

Ⓑ 25 Ⓓ 21

5. Find and explain the mode for the data.

6. Several scientists went to a field to collect various leaves. When they got back to the lab, they measured each leaf, in feet. They recorded the data in a frequency table.

How many leaves were less than $\frac{3}{8}$ ft in length?

Ⓐ 19 Ⓒ 7

Ⓑ 30 Ⓓ 9

Length of Leaves (ft)	
Length	Frequency
$\frac{1}{8}$	11
$\frac{1}{4}$	19
$\frac{3}{8}$	7
$\frac{1}{2}$	3

Name _____

Use the Amount of Raisins Used table for Problems 7 and 8.

Berto and his classmates made trail mix. They each used different amounts of raisins. Berto recorded the amounts of raisins that the classmates used.

Amount of Raisins Used (cups)				
$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$
$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$

7. Berto wants to make a line plot with the data. How many totals Xs will go above $\frac{1}{4}$ and $\frac{3}{4}$?

_____

8. If Berto created a frequency table with this data, what number would be in the frequency column for $\frac{1}{2}$?

_____

9. Brandon borrowed a book from the library. The data show the lengths of time Brandon read the book each day until he finished it.

Time Reading Book (h)
$\frac{1}{4}, \frac{1}{4}, 1, \frac{1}{4}, \frac{1}{2}, \frac{3}{4}, \frac{1}{2}, \frac{1}{4}$

Part A Draw a line plot of the data.

Part B What is the difference between the longest time and shortest time Brandon spent reading the book? Explain.

_____

_____

10. Sasha asked her friends how many books they read during their two-week vacation. She recorded their responses in a frequency table.

Number of Books Read	
Books	Frequency
1	3
2	4
3	1
4	2
5	3

Part A

How many of Sasha's friends read 1 or more books during their vacation?

Ⓐ 8

Ⓑ 15

Ⓒ 13

Ⓓ 12

Part B

What is the median number of books Sasha's friends read during their vacation?

_____ books

Part C

How does the median number of books Sasha's friends read during their vacation compare to the mode and range? Explain.

Name _____

Use the Number of Goals Scored stem-and-leaf plot for Problems 11 and 12.

During the soccer season, Dora kept record of the number of goals scored by each team. At the end of the season, Dora made a stem-and-leaf plot to show the total number of goals scored by each team.

Number of Goals Scored

Stem	Leaf
1	1 4 6
2	0 4 7 8 9
3	1 2 3
4	4

Key: 1 | 1 represents 11 goals.

11. How many modes does the data have?

Ⓐ 1 Ⓒ 2

Ⓑ There is no mode. Ⓓ 33

12. How many more teams scored less than 30 goals than scored more than 30 goals during the season?

Ⓐ 3 Ⓒ 5

Ⓑ 8 Ⓓ 4

13. Tuan kept track of the time he spent on the computer in a frequency table. How many more times did Tuan spend 4 hours or less than he spent 5 hours or more using the computer?

Ⓐ 17 Ⓒ 19

Ⓑ 20 Ⓓ 23

Time Spent Using Computer (h)

Hours	Frequency
2	12
3	10
4	13
5	5
6	9
7	1

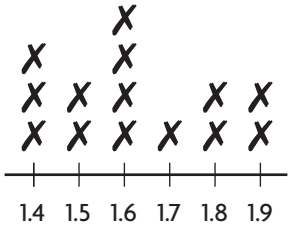
14. Edwige asked the 3rd-grade students to find the distance that they live from the school, in miles. Edwige recorded the students' answers in a frequency table. How many total students live less than 1 mile or more than 2 miles from the school?

Distance Lived from School (m)	
Distance	**Frequency**
0.4	4
0.8	8
1.1	3
1.4	6
1.8	6
2.1	2
2.2	1
2.5	4

_____ students

Use the Weight of Rocks line plot for Problems 14 and 15.

Frank wants to record the weights of the different rocks in his collection. He weighs each rock in pounds and records the data in a line plot.



14. What is the range of the data?

Ⓐ 0.5 lb

Ⓑ 1 lb

Ⓒ 1.5 lbs

Ⓓ 1.6 lbs

15. How many rocks does Frank have in his collection?

Ⓐ 10

Ⓑ 11

Ⓒ 13

Ⓓ 14