LESSON MAKER PRO

Data Detectives

Read, organize, and compare data values.

GRADE 4 · MA.4.DP.1.1

MA.4.DP.1.1 "Collect and represent numerical data, including fractional values, using tables, stem-and-leaf plots or line plots."

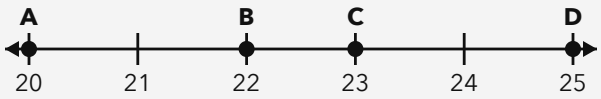
NAME _____ DATE _____

SHOW DATA CLEARLY

Use a table to list each value and its frequency. In a line plot, each mark stands for one data value, so you can count marks and compare values.

WORKED EXAMPLE

Each dot on the number line shows one jump distance. Find the range of the data.

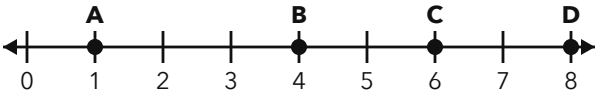


1. The smallest data value is 20.
2. The largest data value is 25.
3. Subtract: 25 - 20 = 5.

Answer: The range is 5.

PRACTICE 6 problems

1 The dots show the numbers of stickers on four cards. What are the least and greatest data values?



ANSWER _____

_____

2 These are lengths of five paper strips: 3/4, 1/2, 3/4, 1/4, 1/2. How many strips have a length of 1/2?

ANSWER _____

3 A game score was 1/4, 1/2, 1/4, 3/4, or 1/4. Make a frequency table for the three different scores.

ANSWER _____

_____

4 These are six library book numbers: 16, 18, 15, 16, 19, 17. Make a stem-and-leaf plot. Use the tens digit as the stem.

ANSWER _____

_____

5 The numbers of goals scored were 6, 8, 6, 7, 9, 6. What is the mode?

ANSWER _____

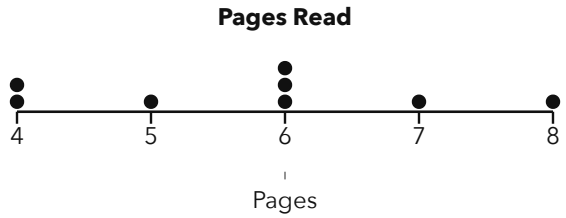
6 The dots show three hiking distances. What is the range?



ANSWER _____

APPLY IT Show your work

1 Apply 1. The dot plot shows pages read by students in a book club. How many students read 6 pages? What is the range of pages read?



ANSWER _____

2 Apply 2. Maya recorded her running distances for six days. Use the table to make a frequency table. Then name the mode.

MAYA'S RUNNING DISTANCES

Day	Distance (lap)
Mon.	1/2
Tue.	3/4
Wed.	1/2
Thu.	1
Fri.	3/4
Sat.	1/2

ANSWER _____

3 Collect your own data. Your teacher provides four paper strips, including at least one fractional-inch length, and a ruler marked in quarter inches. Measure each strip to the nearest quarter inch. Record all four lengths with inches. Make a frequency table of your measured lengths; its frequencies must total four.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Challenge. A set of data has these values: 1/4, 1/4, 1/2, 3/4, 3/4, 3/4, 1. Then two more values of 1 are added. Make a frequency table for all the data. Which value or values are the modes? Explain why.

WORK SPACE AND ANSWER

Data Detectives

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The dots show the numbers of stickers on four cards. What are the least and greatest data values?	**Least: 1; greatest: 8**
2	These are lengths of five paper strips: 3/4, 1/2, 3/4, 1/4, 1/2. How many strips have a length of 1/2?	**2**
3	A game score was 1/4, 1/2, 1/4, 3/4, or 1/4. Make a frequency table for the three different scores.	**1/4: 3; 1/2: 1; 3/4: 1**
4	These are six library book numbers: 16, 18, 15, 16, 19, 17. Make a stem-and-leaf plot. Use the tens digit as the stem.	**1 | 5 6 6 7 8 9**
5	The numbers of goals scored were 6, 8, 6, 7, 9, 6. What is the mode?	**6**
6	The dots show three hiking distances. What is the range?	**6**

PART 2 · APPLY IT

1. **3 students; 4 pages** Count the three marks above 6. Subtract the least value, 4, from the greatest value, 8.
2. **1/2: 3; 3/4: 2; 1: 1. Mode: 1/2** Count how often each distance appears in the table. The distance with the greatest frequency is the mode.
3. **Results vary. Four actual quarter-inch measurements, including fractional values, and a matching frequency table with total frequency four.** Teacher preparation: choose strips that fit the ruler and include at least one length ending in 1/4, 1/2, or 3/4 inch. Observe measurement from zero. Check the recorded units and each table frequency against the four actual readings.

CHALLENGE

1/4: 2; 1/2: 1; 3/4: 3; 1: 3. The modes are 3/4 and 1 because each appears 3 times, the greatest frequency.

Accept frequency tables in any clear order. For stem-and-leaf plots, accept an equivalent format if the stem and leaves are correctly organized.