

Data Bar Detectives

Group numbers into intervals and read histogram bars.

GRADE 7 • 7.PS.2.d

7.PS.2.d "Organize and represent numerical data using histograms with and without the use of technology."

NAME _____

DATE _____

BUILD THE BARS

A histogram groups numerical data into equal-width intervals. Put each value in exactly one interval, then make the bar height match the number of values in that interval.

WORKED EXAMPLE

Make a histogram for 51, 52, 52, 53, 55, 55, 55. Use intervals 50-52 and 53-55.

1. Write the intervals: 50-52 and 53-55.
2. Count 51, 52, and 52 in 50-52. The bar height is 3.
3. Count 53, 55, 55, and 55 in 53-55. The bar height is 4.

Answer: Bar heights: 50-52: 3; 53-55: 4.

PRACTICE 6 problems

- 1** Make a histogram for 1, 3, 3, 4, 7, 8, 8, 9. Use intervals 0-2, 3-5, 6-8, and 9-11. State the height of each bar.

ANSWER _____

- 2** A histogram has these bar heights: 26-29: 5, 30-33: 2, 34-37: 6, 38-41: 4. How many data values are represented?

ANSWER _____

- 3** A histogram has bar heights of 36-39: 2, 40-43: 5, and 44-47: 3. How many data values are from 40 through 47?

ANSWER _____

- 4** Data are whole-number distances. A histogram uses intervals 62-66, 67-71, and 72-76. In which interval does a distance of 67 belong?

ANSWER _____

- 5** Make a histogram for 70, 72, 74, 75, 78, 79, 80, 80, 83, 86. Use intervals 70-74, 75-79, 80-84, and 85-89. State the height of each bar.

ANSWER _____

- 6** Which set of intervals can label adjacent histogram bars for whole-number data without overlap? A. 0-4, 4-8, 8-12 B. 0-4, 5-9, 10-14

ANSWER _____

APPLY IT Show your work

- 1** Nine players record the number of minutes needed to finish a game level: 1, 5, 6, 9, 10, 12, 14, 15, 18. Draw a histogram using intervals 0-4, 5-9, 10-14, and 15-19. Then find how many players took 10 or more minutes.

WORK SPACE

ANSWER _____

- 2** A music club records minutes spent practicing a favorite song: 31, 32, 34, 35, 37, 38, 41, 44, 45, 46, 48. Draw a histogram using intervals 30-34, 35-39, 40-44, and 45-49. Then find how many students practiced from 40 through 49 minutes.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A class records whole-number numbers of pages read, and every value is from 0 through 14: 0, 1, 4, 5, 5, 7, 9, 10, 12, 14, 14. Make a histogram with intervals 0-4, 5-9, and 10-14. Explain why these intervals cover every possible value in the data.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Make a histogram for 1, 3, 3, 4, 7, 8, 8, 9. Use intervals 0-2, 3-5, 6-8, and 9-11. State the height of each bar.	0-2: 1; 3-5: 3; 6-8: 3; 9-11: 1.
2	A histogram has these bar heights: 26-29: 5, 30-33: 2, 34-37: 6, 38-41: 4. How many data values are represented?	17 data values.
3	A histogram has bar heights of 36-39: 2, 40-43: 5, and 44-47: 3. How many data values are from 40 through 47?	8 data values.
4	Data are whole-number distances. A histogram uses intervals 62-66, 67-71, and 72-76. In which interval does a distance of 67 belong?	67-71.
5	Make a histogram for 70, 72, 74, 75, 78, 79, 80, 80, 83, 86. Use intervals 70-74, 75-79, 80-84, and 85-89. State the height of each bar.	70-74: 3; 75-79: 3; 80-84: 3; 85-89: 1.
6	Which set of intervals can label adjacent histogram bars for whole-number data without overlap? A. 0-4, 4-8, 8-12 B. 0-4, 5-9, 10-14	B. 0-4, 5-9, 10-14.

PART 2 • APPLY IT

- Bar heights: 0-4: 1; 5-9: 3; 10-14: 3; 15-19: 2. Five players took 10 or more minutes.** Sort the nine times into the four intervals. Add the heights of the 10-14 and 15-19 bars: $3 + 2 = 5$.
- Bar heights: 30-34: 3; 35-39: 3; 40-44: 2; 45-49: 3. Five students practiced from 40 through 49 minutes.** Count the values in each interval. Add the last two bar heights: $2 + 3 = 5$.

CHALLENGE

Bar heights: 0-4: 3; 5-9: 4; 10-14: 4. The intervals cover all values from 0 through 14 with no gaps or overlap.

Accept a correctly drawn histogram or an equivalent labeled list of interval counts. Bar labels must use the stated intervals, and each value must be counted once.