LESSON MAKER PRO

Build the Bars

Sort numerical data into clear histogram intervals.

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 _____

HISTOGRAM BASICS

A histogram groups numerical data into equal-width intervals called bins. Tally the values in each bin, then make touching bars whose heights show the frequencies.

WORKED EXAMPLE

Find the histogram bar heights for 41, 43, 44, 46, 49, 50, 51, 54 using bins 40-44, 45-49, and 50-54.

1. Write the three equal-width bins: 40-44, 45-49, and 50-54.
2. Tally 41, 43, and 44 in the first bin, so its frequency is 3.
3. Tally 46 and 49 in the second bin, then 50, 51, and 54 in the third bin.

Answer: Bar heights: 40-44: 3; 45-49: 2; 50-54: 3.

PRACTICE 6 problems

1 For the data 1, 3, 6, 7, 9, 12, 14, find the frequency for each bin: 0-4, 5-9, and 10-14.

ANSWER _____

2 A data set has values 16, 18, 19, 22, 23, 24, 27, 29. What is the frequency of the bin 20-24?

ANSWER _____

3 Use bins 25-29, 30-34, and 35-39 for the data 26, 27, 28, 31, 32, 33, 34, 36. Which bin has the tallest bar?

ANSWER _____

4 A histogram has four bar heights: 2, 5, 4, and 3. How many data values are represented altogether?

ANSWER _____

5 A student uses the bins 0-9, 10-19, and 15-24. Explain why these bins should not be used in one histogram.

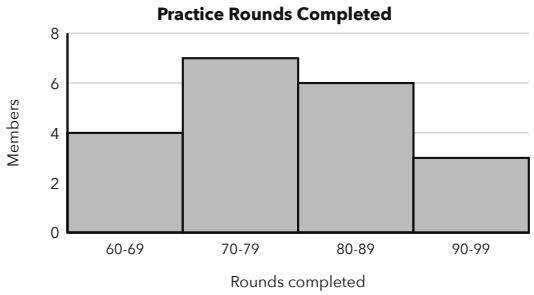
ANSWER _____

6 A histogram has these bin frequencies: 12-16: 6, 17-21: 2, 22-26: 8, 27-31: 5. Which bin has the tallest bar, and which bin has the shortest bar?

ANSWER _____

APPLY IT Show your work

1 The school esports club recorded the number of practice rounds completed by each member in one week. How many members completed 80 or more rounds?



ANSWER _____

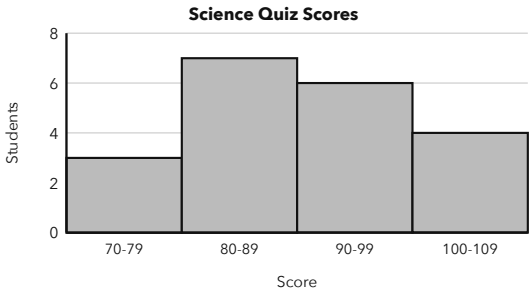
2 Maya recorded the minutes she practiced music on ten days: 11, 13, 14, 16, 18, 19, 21, 22, 24, 25. Use bins 10-14, 15-19, 20-24, and 25-29. List the four bar heights in order, then draw a histogram on your paper.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student says, "At least 2/3 of the students scored 90 or more." Is the student correct? Use the histogram to explain your reasoning.



WORK SPACE AND ANSWER

ANSWER KEY

Build the Bars

GRADE 7 · 7.PS.2.d

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	For the data 1, 3, 6, 7, 9, 12, 14, find the frequency for each bin: 0-4, 5-9, and 10-14.	**0-4: 2; 5-9: 3; 10-14: 2.**
2	A data set has values 16, 18, 19, 22, 23, 24, 27, 29. What is the frequency of the bin 20-24?	**3**
3	Use bins 25-29, 30-34, and 35-39 for the data 26, 27, 28, 31, 32, 33, 34, 36. Which bin has the tallest bar?	**30-34**
4	A histogram has four bar heights: 2, 5, 4, and 3. How many data values are represented altogether?	**14**
5	A student uses the bins 0-9, 10-19, and 15-24. Explain why these bins should not be used in one histogram.	**The bins overlap because values from 15 through 19 could be placed in either the 10-19 bin or the 15-24 bin.**
6	A histogram has these bin frequencies: 12-16: 6, 17-21: 2, 22-26: 8, 27-31: 5. Which bin has the tallest bar, and which bin has the shortest bar?	**Tallest: 22-26. Shortest: 17-21.**

PART 2 · APPLY IT

1. **9 members** Add the frequencies for the 80-89 and 90-99 bins. 6 + 3 = 9.
2. **10-14: 3; 15-19: 3; 20-24: 3; 25-29: 1.** Tally the ten practice times into the four given bins. The first three bins each contain 3 values, and the last bin contains 1 value.

CHALLENGE

No. 10 students scored 90 or more out of 20 students total. 10/20 = 1/2, which is less than 2/3.

Accept equivalent frequency lists when the bin labels and counts are matched correctly. For the challenge, accept any correct comparison showing that 1/2 is less than 2/3.