LESSON MAKER PRO

Spot the Pattern

Use grouped data to find clusters, gaps, and typical ranges.

GRADE 7 · 7.PS.2.g

7.PS.2.g "Analyze data represented in histograms by making observations and drawing conclusions. Determine how histograms reveal patterns in data that cannot be easily seen by looking at the corresponding given data set."

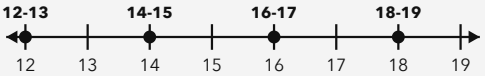
NAME _____ DATE _____

READ THE SHAPE

A histogram groups data into equal intervals. The tallest bar shows a common range, while a missing or short bar can show a gap or an unusual range.

WORKED EXAMPLE

The data are 12, 13, 13, 14, 16, 16, 17, 18. Group them into 12-13, 14-15, 16-17, and 18-19. Which interval or intervals would be tallest?



1. Count each interval: 3, 1, 3, 1.
2. Find the greatest frequency, 3.
3. Two intervals have that frequency.

Answer: 12-13 and 16-17 would tie for tallest. The data have two common ranges.

PRACTICE 4 problems

1 The data are 41, 42, 42, 43, 45, 46. Use intervals 40-42, 43-45, and 46-48. Which interval would be tallest?

ANSWER _____

2 The data are 51, 52, 52, 53, 56, 57, 58, 58. Use intervals 50-54 and 55-59. What pattern would the histogram show?

ANSWER _____

3 The data are 61, 62, 63, 67, 68, 69. Use intervals 60-63, 64-66, and 67-70. Which interval is empty, and what does it show?

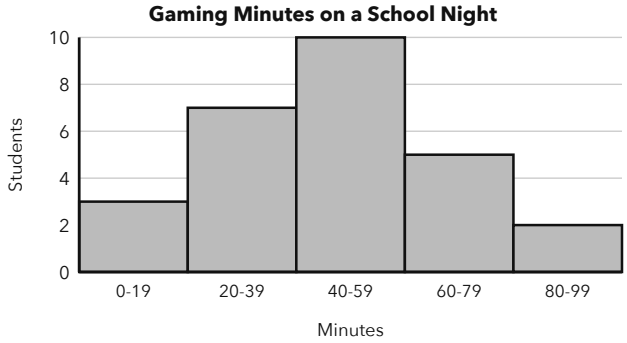
ANSWER _____

4 A histogram has these frequencies: 70-74: 2, 75-79: 7, 80-84: 3. What conclusion can you make?

ANSWER _____

APPLY IT Show your work

1 A student council surveys students about minutes spent gaming on a school night. Which interval has the most students?



ANSWER _____

2 Using the gaming histogram, a council member says, "Most students game for at least 60 minutes." Is the claim supported?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Two groups record minutes spent reading. Group A: 21, 22, 22, 23, 23, 24, 24, 25, 26, 27, 28, 29. Group B: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32. Use intervals 20-22, 23-25, 26-28, 29-31, and 32-34. Which group has a stronger cluster in 23-25? Explain how the grouped counts reveal it.

WORK SPACE AND ANSWER

ANSWER KEY

Spot the Pattern

GRADE 7 · 7.PS.2.g

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The data are 41, 42, 42, 43, 45, 46. Use intervals 40-42, 43-45, and 46-48. Which interval would be tallest?	**40-42**
2	The data are 51, 52, 52, 53, 56, 57, 58, 58. Use intervals 50-54 and 55-59. What pattern would the histogram show?	**The intervals 50-54 and 55-59 would be equally tall, with 4 data values each.**
3	The data are 61, 62, 63, 67, 68, 69. Use intervals 60-63, 64-66, and 67-70. Which interval is empty, and what does it show?	**64-66; it shows a gap in the data.**
4	A histogram has these frequencies: 70-74: 2, 75-79: 7, 80-84: 3. What conclusion can you make?	**The data cluster in 75-79. That interval has 7 values, the greatest frequency.**

PART 2 · APPLY IT

1. **40-59 minutes** The 40-59 bar has height 10, which is the greatest frequency.
2. **No. Only 7 of 27 students game for at least 60 minutes, so it is not most.** Add the 60-79 and 80-99 frequencies: 5 + 2 = 7. The total is 27, and 7 is less than half of 27.

CHALLENGE

Group A. Its interval counts are 3, 5, 3, 1, 0, so 23-25 is clearly the highest. Group B has counts 2, 3, 3, 3, 1, so its data are more spread out.

Accept equivalent wording for cluster, peak, gap, and spread out. For the challenge, accept correct interval counts and a conclusion that Group A has the clearer cluster.