

Histogram Detectives

Ask questions that create number data.

GRADE 7 • 7.PS.2.a

7.PS.2.a "Formulate questions that require the collection or acquisition of data with a focus on histograms."

NAME _____

DATE _____

PART 1: ASK IT

A histogram uses numerical data sorted into equal intervals. Ask about one measurement for a group, then collect one number from each person.

WORKED EXAMPLE

Could this question lead to a histogram: "How many minutes did 18 students read last night?"

1. Measure minutes read.
2. Collect one number from each student.
3. Sort the numbers into equal intervals, such as 0-9 and 10-19 minutes.

Answer: Yes. The data are numbers that can be grouped into intervals.

PRACTICE 5 problems

- 1** Which question could make a histogram? A. Which way do you travel to school? B. How many minutes does your trip to school take?

ANSWER _____

- 2** The question is, "What is each student's arm span in centimeters?" What data should be collected?

ANSWER _____

- 3** Rewrite this as a histogram question: "What is your favorite lunch?"

ANSWER _____

- 4** A survey asks, "How many pages did each student read this week?" Give two equal-width intervals for page totals from 20 through 39.

ANSWER _____

- 5** Can a histogram answer, "Which pet is most common?" Explain.

ANSWER _____

APPLY IT Show your work

- 1** APPLY 1: The skate club wants to learn about practice time. Write a histogram question. Include who will answer and the unit.

WORK SPACE

ANSWER _____

- 2** APPLY 2: Maya asks, "Do students like multiplayer games?" Change her question so the answers could make a histogram. State what data to collect.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

CHALLENGE: A student council wants a histogram of grade 7 commute times. Which question is better? A. How do you get to school? B. How many minutes does your usual one-way trip to school take? Explain.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Which question could make a histogram? A. Which way do you travel to school? B. How many minutes does your trip to school take?	B. How many minutes does your trip to school take?
2	The question is, "What is each student's arm span in centimeters?" What data should be collected?	One arm-span measurement in centimeters from each student.
3	Rewrite this as a histogram question: "What is your favorite lunch?"	How many minutes does each student spend eating lunch?
4	A survey asks, "How many pages did each student read this week?" Give two equal-width intervals for page totals from 20 through 39.	20-29 pages and 30-39 pages.
5	Can a histogram answer, "Which pet is most common?" Explain.	No. Pet type is categorical, not numerical data grouped into intervals.

PART 2 • APPLY IT

- 1. How many minutes did each skate club member practice this week?** Collect each club member's weekly practice time in minutes, then sort the times into equal intervals.
- 2. How many minutes did each student play multiplayer games yesterday? Collect each student's number of minutes.** The revised question asks for a numerical time measurement from each student.

CHALLENGE

B. It collects a numerical travel time that can be sorted into equal intervals. Question A collects categories of transportation.

Accept equivalent histogram questions that name a group, one numerical measurement, and a unit when needed. Accept any sensible equal-width intervals that cover 20 through 39 without gaps or overlap.