

Graph Matchup

Choose the graph that makes the data clearest.

GRADE 8 • 8.PS.2.i

8.PS.2.i "Given a contextual situation, justify which graphical representation (e.g., pictographs, bar graphs, line graphs, line plots/dot plots, stem-and-leaf plots, circle graphs, histograms, and boxplots) best represents the data."

NAME _____

DATE _____

CHOOSE FOR A PURPOSE

A graph should make the important feature easy to see. Ask whether you need to compare categories, show change in order, show parts of a whole, or study a number distribution.

WORKED EXAMPLE

A weather station records noon temperatures of 61, 64, 67, and 70 degrees on consecutive days. Which graph best represents the data?

1. The temperatures are recorded in time order.
2. The important feature is how temperature changes.
3. A line graph shows change across ordered days.

Answer: Line graph, because it shows the temperature trend over time.

PRACTICE 5 problems

- 1** A cafeteria wants to compare how many students chose each favorite fruit. Which graph is best?

ANSWER _____

- 2** A runner's lap counts are 1, 1, 2, 3, 3, 3, 5. Which graph is best for showing each exact count and how often it occurred?

ANSWER _____

- 3** A club makes a poster showing small whole-number vote counts, using one symbol for each vote. Which graph is best?

ANSWER _____

- 4** A school groups hundreds of bus-ride times into time intervals to study the overall distribution. Which graph is best?

ANSWER _____

- 5** The numbers of books read by students are 11, 14, 16, 19, 21, and 24. Which graph is best for keeping the exact values while showing the pattern?

ANSWER _____

APPLY IT Show your work

- 1** Jordan tracks reading minutes each day for a month. Jordan wants to see whether the minutes generally rose, fell, or stayed steady. Which graph should Jordan use? Justify your choice.

WORK SPACE

ANSWER _____

- 2** The student council divides fundraiser money among supplies, music, snacks, and prizes. It wants to show each category's share of all the money. Which graph should it use? Justify your choice.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Two robotics teams record completion times for many trials. Their adviser wants to compare typical time, spread, and possible outliers while keeping the teams separate. Which graph is best? Explain.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A cafeteria wants to compare how many students chose each favorite fruit. Which graph is best?	Bar graph, because it compares counts across categories.
2	A runner's lap counts are 1, 1, 2, 3, 3, 3, 5. Which graph is best for showing each exact count and how often it occurred?	Line plot (dot plot), because it shows each exact value and its frequency.
3	A club makes a poster showing small whole-number vote counts, using one symbol for each vote. Which graph is best?	Pictograph, because symbols can represent the vote counts.
4	A school groups hundreds of bus-ride times into time intervals to study the overall distribution. Which graph is best?	Histogram, because it shows frequencies in numerical intervals.
5	The numbers of books read by students are 11, 14, 16, 19, 21, and 24. Which graph is best for keeping the exact values while showing the pattern?	Stem-and-leaf plot, because it keeps the exact values and shows the distribution.

PART 2 • APPLY IT

1. **Line graph, because it shows how reading minutes change over time.** The data are recorded in time order, so connecting the values makes the trend visible.
2. **Circle graph, because it shows each category as part of the total.** The categories divide one total amount, so a circle graph clearly shows the shares.

CHALLENGE

Side-by-side boxplots, because they compare the medians, spreads, and outliers of two data sets.

Accept equivalent names, such as dot plot for line plot. Accept any justification that correctly connects the graph type to the data purpose.