

# Pick the Plot

Match each data set to its best display.

**HIGH SCHOOL • MA.912.DP.1.1**

**MA.912.DP.1.1** "Given a set of data, select an appropriate method to represent the data, depending on whether it is numerical or categorical data and on whether it is univariate or bivariate."

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## CHOOSE BY TYPE

First decide whether the data are numerical or categorical, and whether there is one variable or two. Use a dot plot or histogram for one numerical variable, a bar graph for one categorical variable, a scatter plot for two numerical variables, and a two-way table for two categorical variables.

## WORKED EXAMPLE

A library logs books borrowed by five volunteers: 14, 17, 17, 19, 22.  
Choose the best representation.

1. The values are numerical.
2. There is one variable, books borrowed.
3. A dot plot shows each value and the repeated 17.

**Answer: Dot plot**

## PRACTICE 5 problems

- 1** A student records shoe sizes for eight classmates. Choose the best representation.

**ANSWER** \_\_\_\_\_

- 2** A survey asks 50 students for their preferred school lunch. Choose the best representation.

**ANSWER** \_\_\_\_\_

- 3** A weather station records the daily high temperature for 60 days. Choose the best representation.

**ANSWER** \_\_\_\_\_

- 4** A coach records each player's height and arm span. Choose the best representation.

**ANSWER** \_\_\_\_\_

- 5** A counselor records each student's grade level and whether the student has a part-time job. Choose the best representation.

**ANSWER** \_\_\_\_\_

## APPLY IT Show your work

- 1** At a game-design club, six students report weekly practice hours and project scores: (1, 62), (2, 68), (3, 71), (4, 79), (5, 83), (6, 86). Which representation best shows whether practice time and score are related?

WORK SPACE

ANSWER \_\_\_\_\_

- 2** Student council records each student's grade, 9, 10, 11, or 12, and preferred spirit-week theme, music, sports, art, or gaming. Which representation is the best first choice?

WORK SPACE

ANSWER \_\_\_\_\_

## CHALLENGE One step up

### CHALLENGE

Jordan has paired data for playlists made and listening hours: (1, 25), (2, 31), (3, 36), (4, 45). Jordan chooses a bar graph. Choose a better representation and explain why.

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## PART 1 • PRACTICE

| # | PROBLEM                                                                                                                     | ANSWER                         |
|---|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 1 | A student records shoe sizes for eight classmates. Choose the best representation.                                          | <b>Dot plot</b>                |
| 2 | A survey asks 50 students for their preferred school lunch. Choose the best representation.                                 | <b>Bar graph</b>               |
| 3 | A weather station records the daily high temperature for 60 days. Choose the best representation.                           | <b>Histogram</b>               |
| 4 | A coach records each player's height and arm span. Choose the best representation.                                          | <b>Scatter plot</b>            |
| 5 | A counselor records each student's grade level and whether the student has a part-time job. Choose the best representation. | <b>Two-way frequency table</b> |

## PART 2 • APPLY IT

1. **Scatter plot** Both variables are numerical, and each practice time is paired with one score. Plot each ordered pair as a point.
2. **Two-way frequency table** Grade and theme are both categorical variables. A two-way frequency table organizes the counts for every category pair.

## CHALLENGE

**Use a scatter plot because both variables are numerical and paired, so each point shows one pair and the pattern between the variables.**

Accept “scatterplot” for “scatter plot” and “two-way table” for “two-way frequency table.” A grouped or segmented bar graph may also be accepted for two categorical variables if the student explains that it compares category counts.