

# Data Detective

*Choose the right data and a way to collect it.*

**GRADE 6 • 6.PS.1.b**

**6.PS.1.b** "Determine the data needed to answer a formulated question and collect the data (or acquire existing data) using various methods (e.g., observations, measurement, surveys, experiments)."

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## PLAN BEFORE YOU COLLECT

Start with the question. Decide exactly what information will answer it, then choose a method such as a survey, observation, measurement, experiment, or existing record.

## WORKED EXAMPLE

A class of 18 wants to know how many minutes students read on a typical school night. What data and method are needed?

1. Data needed: each student's reading time in minutes.
2. Method: survey all 18 students.
3. Record each response in a list.

**Answer: Collect each student's reading time in minutes by surveying all 18 students.**

## PRACTICE 5 problems

- 1** Which lunch choice is most popular at school? Name the data and method.

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

- 2** Does water temperature change how fast sugar dissolves? Name the data and method.

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

- 3** How crowded is the basketball court at recess? Name the data and method.

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

- 4** What is the mass of students' backpacks? Name the data and method.

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

- 5** Which book genre is borrowed most from the library? Name the data and method.

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

## APPLY IT Show your work

- 1** The student council wants to know whether students would use a quiet study room after school. What data should it collect, and how should it collect the data?

WORK SPACE

ANSWER \_\_\_\_\_

- 2** A teacher wants to test whether music affects scores on a short practice task. What data should be collected, and what method makes this a fair experiment?

WORK SPACE

ANSWER \_\_\_\_\_

## CHALLENGE One step up

### CHALLENGE

A student asks, "Which school sport do students most want to play?" The student counts only people entering the gym one afternoon. Explain why this does not answer the question. State a better data plan.

---

---

## PART 1 • PRACTICE

| # | PROBLEM                                                                           | ANSWER                                                                          |
|---|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1 | Which lunch choice is most popular at school? Name the data and method.           | <b>Data: each student's lunch choice. Method: survey.</b>                       |
| 2 | Does water temperature change how fast sugar dissolves? Name the data and method. | <b>Data: water temperature and dissolving time. Method: experiment.</b>         |
| 3 | How crowded is the basketball court at recess? Name the data and method.          | <b>Data: number of players on the court at recess. Method: observation.</b>     |
| 4 | What is the mass of students' backpacks? Name the data and method.                | <b>Data: each backpack's mass. Method: measurement.</b>                         |
| 5 | Which book genre is borrowed most from the library? Name the data and method.     | <b>Data: genre of each borrowed book. Method: use library checkout records.</b> |

## PART 2 • APPLY IT

1. **Collect each student's response about using the study room. Use an anonymous survey of students.** The needed data are students' responses, such as yes or no. A survey directly asks students about their interest.
2. **Collect each student's music condition and practice-task score. Give the same task and time, then randomly assign students to work with music or without music.** The data must include the condition and score for each student. Keeping the task and time the same helps make music the variable being tested.

## CHALLENGE

**Gym counts show who entered the gym, not which sport students want to play. Survey students or a representative sample by asking which sport they most want to play.**

Accept equivalent descriptions of the needed variable and a suitable collection method. For the experiment, accept another fair plan that compares music and no-music conditions while keeping the task and time the same.