

Data Detectives

Choose the data and a way to collect it.

GRADE 5 • 5.PS.1.b

5.PS.1.b "Determine the data needed to answer a formulated question and collect or acquire existing data (limited to 30 or fewer data points) using various methods (e.g., polls, observations, measurements, experiments)."

NAME _____

DATE _____

PLAN BEFORE YOU COLLECT

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

WORKED EXAMPLE

A class asks, "Which fruit should we offer at snack?" Plan data collection for 18 students.

1. Data needed: one fruit choice from each student.
2. Method: give every student the same short poll.
3. Collect 18 choices and tally each fruit.

Answer: Poll all 18 students and tally their fruit choices.

PRACTICE 5 problems

- 1** Question: "How many pages did each student read last night?" What data is needed?

ANSWER _____

- 2** Question: "Which of 14 students prefers drawing, music, or coding?" What method should be used?

ANSWER _____

- 3** Question: "Do bean plants grow taller by a window or under a lamp?" What data is needed?

ANSWER _____

- 4** A librarian wants to know which of 20 comics was checked out most this month. What existing data is needed?

ANSWER _____

- 5** A student asks, "Are buses late in the morning?" What should be recorded during 24 bus arrivals?

ANSWER _____

APPLY IT Show your work

- 1** A gaming club has 25 members. It wants to know whether members prefer cooperative games or competitive games. Write a data-collection plan.

WORK SPACE

ANSWER _____

- 2** The school garden has 12 similar radish pots. Students want to test whether daily watering or every-other-day watering grows taller radishes after 3 weeks. Write a data-collection plan.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A student asks which school lunch is liked best. They poll 8 friends from one class. Write exactly two sentences explaining whether this plan answers the question and how to improve it.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Question: "How many pages did each student read last night?" What data is needed?	The number of pages each student read last night.
2	Question: "Which of 14 students prefers drawing, music, or coding?" What method should be used?	Poll each of the 14 students and record one choice.
3	Question: "Do bean plants grow taller by a window or under a lamp?" What data is needed?	The starting and final heights of plants in each light condition.
4	A librarian wants to know which of 20 comics was checked out most this month. What existing data is needed?	The checkout count for each of the 20 comics this month.
5	A student asks, "Are buses late in the morning?" What should be recorded during 24 bus arrivals?	The scheduled time and actual arrival time for each bus.

PART 2 • APPLY IT

1. **Poll all 25 members. Record each member's choice, cooperative or competitive, and tally the choices.** The needed data is one game-type preference from each member. A poll of all 25 members gives 25 data points.
2. **Give 6 pots daily watering and 6 pots every-other-day watering. After 3 weeks, measure and record the height of each radish plant.** This experiment collects 12 height measurements. Keep other conditions, such as soil and light, the same.

CHALLENGE

No, 8 friends from one class may not represent the whole school. Poll a mix of up to 30 students from several grades and tally each student's lunch choice.

Accept equivalent descriptions of the needed data and valid collection methods. For the challenge, accept any two-sentence response that identifies the limited sample and proposes a broader sample of 30 or fewer students.