

Data Detective Plan

Choose useful data and a smart way to get it.

GRADE 8 • 8.PS.3.b

8.PS.3.b "Determine the data needed to answer a formulated question and collect the data (or acquire existing data) of no more than 20 items using various methods (e.g., observations, measurement, surveys, experiments)."

NAME _____

DATE _____

PLAN BEFORE YOU COLLECT

Start with a question that data can answer. Decide what value or category to record for each item, then choose a method such as a survey, observation, measurement, experiment, or an existing record. Collect no more than 20 items.

WORKED EXAMPLE

Question: "What is the usual number of pages 11 students read in a week?" Plan the data collection.

1. Identify the data: each student's pages read during one week.
2. Choose a method: survey the 11 students with the same question.
3. Record each student's page total.

Answer: Survey 11 students and record each student's pages read in one week.

PRACTICE 5 problems

- 1** A club sponsor asks, "Which after-school club is most popular among 15 students?" What data is needed, and what method should be used?

ANSWER _____

- 2** A student asks, "How far does a paper airplane fly?" What data is needed, and what method should be used for 6 launches?

ANSWER _____

- 3** A librarian asks, "What genres are the 18 new books?" What data is needed, and what existing source could be used?

ANSWER _____

- 4** A principal asks, "Which of 3 hallways is busiest during passing time?" What data is needed, and what method should be used?

ANSWER _____

- 5** Maya has 24 survey responses. She may use no more than 20 items. How many responses may she use?

ANSWER _____

APPLY IT Show your work

- 1** Keon asks, "Which day did I practice basketball the longest this week?" Use the practice log. What data did he need, what existing source did he use, and what is the answer?

KEON'S PRACTICE LOG

Day	Minutes
Monday	25
Tuesday	35
Wednesday	20
Thursday	40
Friday	30

ANSWER _____

- 2** Nia asks, "Which lunch choice would eighth graders pick most often: tacos, pizza, salad, or sandwiches?" She can ask only 16 students. What data should she collect, and what method should she use?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Leo asks, "Does instrumental music help eighth graders finish a short concentration task faster?" State the data he should collect, the method he should use, and why the test is fair. Use no more than 20 data values.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A club sponsor asks, "Which after-school club is most popular among 15 students?" What data is needed, and what method should be used?	Each student's club choice; survey 15 students.
2	A student asks, "How far does a paper airplane fly?" What data is needed, and what method should be used for 6 launches?	The flight distance for each launch; measure the distance in an experiment with 6 launches.
3	A librarian asks, "What genres are the 18 new books?" What data is needed, and what existing source could be used?	The genre of each new book; use the library catalog records.
4	A principal asks, "Which of 3 hallways is busiest during passing time?" What data is needed, and what method should be used?	The number of students in each hallway during the same passing time; observe and count students.
5	Maya has 24 survey responses. She may use no more than 20 items. How many responses may she use?	20 responses

PART 2 • APPLY IT

1. **He needed daily practice minutes. He used his practice log. Thursday, 40 minutes.** Read the daily minute values from the existing practice log. The greatest value is 40 on Thursday.
2. **Collect one lunch choice from each of 16 randomly selected eighth graders. Use a survey.** The needed data are students' lunch choices. A survey of 16 randomly selected eighth graders stays within the item limit and reduces bias.

CHALLENGE

Randomly choose 8 eighth graders. Give each student 2 comparable concentration tasks, one with instrumental music and one in silence, and randomize which condition comes first. Record 16 completion times and compare each student's two times; random order and comparable tasks make the test fair.

Accept equivalent descriptions of the needed data and method when they match the question and use 20 or fewer items. For the challenge, accept other fair experiments with 20 or fewer recorded data values, comparable tasks, and a controlled comparison.