



Select an appropriate data collection method

1

Researchers have one group exercise three days per week and another group exercise five days per week, then compare improvements in fitness.

A
Observational study

B
Experiment

2

Experiment

A
Researchers randomly choose teenagers and compare the amount of screen time they report with the number of hours they sleep.

B
Volunteers drink either regular coffee or decaffeinated coffee before completing a reaction-time test, and the results are compared.

3

Population: All books in a public library system
Sample: 800 books randomly selected from all library branches

A
No, it is not representative of the population

B
Yes, it is representative of the population

4

Sample: 1,500 licensed drivers randomly selected from provincial records

A
Drivers whose licences are due for renewal

B
All licensed drivers in Ontario

5

Population: All homes in a province

A
1,000 homes built within the past five years

B
1,000 homes randomly selected from municipal property records

6

Goal: Percentage of residents who use public parks
Sampling approach: Survey people currently walking in a park

A
Measurement bias

B
Selection bias

C
Response bias

D
Voluntary response bias

7

Goal: Public opinion on a new city bike lane
Sampling approach: Post an online poll on a cycling advocacy website

A
Readers of the website may answer surveys more quickly because they are familiar with online polls.

B
People with strong opinions about cycling are more likely to respond.

8

Goal: Average traffic speed on a city road

A
Survey nearby pedestrians about traffic conditions.

B
Count the number of vehicles passing the location.

C
Ask drivers to estimate how fast they were travelling during their trip and compare the responses across different neighbourhoods.

D
Measure vehicle speeds using radar at several times of day.



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Goal: Average reaction time of video game players

- A Measure reaction times using the same computerized test.
- B Ask players how fast they believe they react and compare their answers across different skill levels.
- C Observe professional players during competitions.
- D Compare players from different skill levels only.

10

Goal: Which social media platform students use most often

- A Survey a representative sample of students about their usage.
- B Count the school's social media posts.
- C Post the survey on a single social media platform and compare the responses received throughout the week.
- D Survey only students in a media studies class.

11

Goal: Average number of books read by adults in a year

- A Ask bookstore employees what people usually read.
- B Survey members of a local book club and compare how many books they typically read during a year.
- C Count books displayed on library shelves.
- D Survey a representative sample of adults using a consistent time period.

12

Goal: Percentage of students who walk to school

- A Survey students on a day with unusually poor weather.
- B Count students entering through the front entrance over several mornings and assume they represent the entire student body.
- C Survey a representative sample of students about their usual travel method.
- D Ask teachers how most students travel to school.