LESSON MAKER PRO

Study Method Match

Tell how data were collected and what the results can show.

HIGH SCHOOL · MA.912.DP.5.7

MA.912.DP.5.7 "Compare and contrast surveys, experiments and observational studies."

NAME _____ **DATE** _____

CHOOSE THE METHOD

A survey asks people questions. An observational study records what people already do, without assigning a treatment. An experiment assigns treatments, so a well-designed experiment can test whether a treatment causes a change.

WORKED EXAMPLE

A researcher randomly assigns 120 cyclists to use either a new bike light or a standard light for two weeks. What method is this?

1. The researcher assigns which light each cyclist uses.
2. Assigning a treatment means this is an experiment.

Answer: Experiment

PRACTICE 5 problems

1 Students answer a form about how often they buy school lunch. Name the method.

ANSWER _____

2 A researcher records how many buses arrive late each morning without changing any routes. Name the method.

ANSWER _____

3 Players are randomly assigned either a new stretching routine or their usual routine before practice. Name the method.

ANSWER _____

4 Which method can best test whether a new study app causes higher quiz scores?

ANSWER _____

5 A counselor asks students whether they prefer digital or paper planners. Name the method.

ANSWER _____

APPLY IT Show your work

1 The student council wants to know what percent of students support adding more charging stations. It sends a question to a random sample of students. What method is this, and what can the council estimate?

WORK SPACE

ANSWER _____

2 A school records students' reported sleep time and their math test scores. Students choose their own sleep schedules. What method is this, and can the school conclude that more sleep causes higher scores?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A club wants to compare three plans: ask students whether they would attend a Friday event, record attendance at current Friday events, and randomly assign members different event reminder messages. Name each method in order. Which plan can best test whether reminder messages cause attendance to change? Explain briefly.

WORK SPACE AND ANSWER

ANSWER KEY

Study Method Match

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Students answer a form about how often they buy school lunch. Name the method.	**Survey**
2	A researcher records how many buses arrive late each morning without changing any routes. Name the method.	**Observational study**
3	Players are randomly assigned either a new stretching routine or their usual routine before practice. Name the method.	**Experiment**
4	Which method can best test whether a new study app causes higher quiz scores?	**Experiment**
5	A counselor asks students whether they prefer digital or paper planners. Name the method.	**Survey**

PART 2 · APPLY IT

1. **Survey. The council can estimate the percent of students who support more charging stations.** Students answer a question, so the data come from a survey. A random sample can be used to estimate the school population's opinion.
2. **Observational study. No, it can show an association but not prove that more sleep causes higher scores.** The school does not assign sleep time, so this is observational. Other differences between students could affect scores.

CHALLENGE

Survey, observational study, experiment. The experiment can best test cause and effect because it assigns the reminder messages.

Accept "randomized experiment" for experiment and "observational research" for observational study. For causal claims, require that students identify assignment of a treatment as the key feature.