

11-1 Skills Practice

Designing a Study

Determine whether each situation calls for a *survey*, an *experiment*, or an *observational study*. Explain your reasoning.

1. You want to find opinions on the best computer game to buy.
2. You want to see if students who have a 4.0 grade point average study more than those who do not.

Determine whether each survey question is *biased* or *unbiased*. If biased, explain your reasoning.

3. Don't you agree that teachers should be paid more?
 4. Do you pay too much for car insurance?
 5. Which would you rather use to learn in your classroom, a cell phone or a laptop?
 6. Do you ever watch movies online?
7. Identify any flaws in the experiment design, and describe how they could be corrected.

Experiment:	A research company wants to test the claim that pretreating grass-stained clothes with Brand A Stainstick eliminates grass stains. The experimental group consists of grass-stained clothes pretreated with Brand A Stainstick and then washed with Brand A Detergent in warm water, and the control group consists of clothes with grass stains washed with Brand A Detergent in cold water.
Results:	The grass stains on the pretreated clothes were eliminated, while the grass stains on clothes that were not pretreated were not eliminated. The company concluded that pretreating clothes with Brand A Stainstick eliminates grass stains.

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Determine whether each situation calls for a *survey*, an *experiment*, or an *observational study*. Explain your reasoning.

1. You want to compare the health of students who walk to school to the health of students who ride the bus.
2. You want to find out if people who eat a candy bar immediately before a math test get higher scores than people who do not.

Determine whether each survey question is *biased* or *unbiased*. If biased, explain your reasoning.

3. What is your current age?
4. Do you think teachers should be required to attend all home and away football games?
5. Do you agree or disagree with the following statement?
Teachers should not be required to not supervise students during lunch.
6. Most teenagers text message during class. Are you one of them?
7. A research group wants to conduct an experiment to test the claim that student who use laptops in class have higher standardized test scores. State the objective of the experiment, suggest a population, determine the experimental and control groups, and describe a sample procedure.