



**Identify the population and classify the sampling method.**

1. The manager of a music store wants to evaluate how customers rate the selection of music the store has in stock. Customers are given comment cards with their receipts.
2. Your school's administrators want to know if students are satisfied with the choices of activities for activity period. In each grade, every seventh student in alphabetical order is surveyed.

**In Exercises 3 and 4, tell whether the survey method used is likely to result in a *representative sample* or a *biased sample*. Explain.**

3. A bicycling club wants to gather information about biking conditions throughout a city. A survey for bicycle riders is posted on the club's website.
4. A management company that owns several apartment buildings wants to gather information about tenant satisfaction with the condition of the apartments. They survey 30 random tenants in each of the buildings.

5. **Error Analysis** The Student Council wants to produce an unbiased sample to find out if students prefer to attend sporting events or performances such as school plays and concerts. *Describe* and correct the error in the sampling method.

Student Council members survey the students at a drama club meeting after school.



**Tell whether the question is potentially biased. Explain your answer.**

6. Don't you think that the lunch menu should include grilled chicken rather than pizza because grilled chicken is healthier for you?
7. Do you think that the city's excess revenue should be spent on road repairs or building a new sports stadium?

**In Exercises 8 and 9, explain why the question is biased. Then rewrite it so that it is not.**

8. Don't you agree that it is better to offer an accounting class as an elective rather than a computer programming class?
9. Would you pay even higher taxes to fund a new highway?
10. **Bus Stop Conditions** A newspaper does a report on the condition of the bus stops in a large city. Part of the report includes a survey of people living in the area. The survey is done by asking people at a local mall what they think of the condition of the bus stops. Is the sample likely to be representative or biased? *Explain*.
11. **Afterschool Activities** You plan a report on the participation of students at your school in afterschool activities for your school's website. *Describe* how you could choose a representative sample. *Justify* your sampling method.



**In Exercises 1 and 2, identify the population and classify the sampling method.**

1. Your school's administrators want to know where students want to go on the class trip at the end of the year. The administrators randomly survey 30 freshmen, 30 sophomores, 30 juniors, and 30 seniors.
2. The manager at a local bookstore is selecting authors for readings at the bookstore. The bookstore surveys every other person who buys books at the store to determine which authors will bring in the biggest audience.

**In Exercises 3 and 4, tell whether the survey method used is likely to result in a *representative sample* or a *biased sample*. Explain.**

3. The owners of an ice cream shop want to determine whether or not they should keep their stores open an hour later. They survey the customers in one of their stores at random.
4. A group of students at your school wants to gather information about the need for additional funding for the school library. They survey every third person in the library.

**In Exercises 5 and 6, tell whether the question is potentially biased. Explain your answer.**

5. Do you think that the city bus schedule should run later in the day?
6. Don't you agree that a new baseball stadium should be built because baseball is America's favorite sport?

**In Exercises 7 and 8, explain why the question is biased. Then rewrite it so that it is not.**

7. Don't you agree that it is better to offer two hot lunches on the menu rather than a cold lunch and a hot lunch?
8. Don't you agree that a moped is more fun to ride than a bicycle?
9. **School Sports** You plan to report for your school newspaper on which sport students would like added to the athletic program. *Describe* how you could choose a representative sample. *Justify* your sampling method. Then write at least one unbiased question you could use to collect information. *Explain* why your question is unbiased.
10. **Stratified Random Sample** A stratified random sample of a population is used for a survey that contains unbiased questions. *Explain* how it is possible for the survey to be biased. *Describe* a situation in which this might occur.