

8-8**Study Guide and Intervention*****Using Sampling to Predict***

In an **unbiased sample** the whole population is represented. In a **biased sample** one or more parts of the population are favored over the others.

Example 1

Look at the following table to determine the favorite sport of middle school students.

Favorite Sports of Middle School Students			
Basketball	Baseball	Football	Soccer
10	5	17	52

Based on the table, it would appear that soccer is the favorite sport of middle school students. However, suppose the data collected for this survey was taken at a World Cup soccer match. It can then be concluded that our sample is **biased** because students who are at a soccer match may be more likely to choose soccer as their favorite sport.

To receive an **unbiased** sample of middle school students, the sports survey could be completed at randomly selected middle schools throughout the country.

Exercises

Determine whether the given situations represent a *biased* or *unbiased* sample. Then tell the type of sample.

- Writers of a popular teen magazine want to write a story about which movies their readers like. The writers decide to interview the first 50 people that walk out of a movie theater.
Biased; convenience sample
- The student council wanted to raise money for their school by selling homemade cookies during lunch time. To find out the favorite kind of cookie for the majority of their school, they conducted a survey. They gave the survey to 20 randomly selected students from each grade level.
Unbiased; simple random sample
- To determine the most frequently used gas station, a researcher randomly selected every 10th person from a drive-through fast food restaurant and asked them where they last filled up with gas.
Unbiased; simple random sample