**Populations and Samples**

**Population-**The entire group of objects or individuals considered for a survey

**Sample-** A part of the population

**Random Sample-** A sample in which each individual or object in the entire population has an equal chance of being selected.

**Biased Sample-** A sample that does not fairly represent the population

**Bias in Survey Questions**- Once there is a representative sample of the population- make sure the data is not gathered without bias- The survey questions themselves should not sway people to respond a certain way.

**Identify the population. Determine whether each sample is a random sample or a biased sample. Explain your reasoning.**

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| Roberto wants to know the favorite sport of adults in his hometown. He survey 50 adults at a baseball game. | Paula wants to know the favorite type of music for students in her class. She puts the names of all students in a hat, draws 8 names, and surveys those students. |
| For a survey, a company manager assigned a number to each of the company’s 500 employees, and put the number in a bag. The manager chose 20 numbers and surveyed the employees with those numbers. | Gino wants to know how most people in his neighborhood get to work. He surveys 100 people getting off the bus at a bus stop near his house. |
| Raylene wants to know the favorite ice cream flavor of the employees at her company. She surveys 150 employees chosen at random from a list of all employees. | Carlos chooses 50 movies at random from a list of all his movies to determine the average runtime of the movies in his collection. |
| Lisa asks 75 people at a neighborhood fast food restaurant about the last meal they ate, in order to find the eating habits of people in her neighborhood. | To determine the favorite subject of students at his school, Jason surveys 30 students who ride his bus about their favorite subject. |
| Every tenth student who walked into the cafeteria was surveyed to determine his or her favorite lunch. Out of 40 Students, 19 students stated that they like burgers best. The cafeteria staff concluded that about 50% of the students like burgers best. | Janet surveyed the student athletes on the girls’ field hockey team to determine which sports teenagers like best. Of these 65% said that they like field hockey best. Janet concluded that over half of teenagers like field hockey best. |

Bias in Survey Questions

Make sure that the survey question themselves do not sway people to respond in a certain way.

**In Madison County, residents were surveyed about a new skateboard park. Determine whether each question might be biased. Explain.**

1. Would you like to waste the taxpayers’ money to build a frivolous skateboard park?

2. Do you favor a new skateboard park?  
3. Studies have shown that having a safe place to go keeps kids out of trouble. Would you like to invest taxpayers’ money to build a skateboard park?

**Local residents were surveyed about adding stoplights at the corner of Main Street and Parry Avenue. Determine whether each survey question may be biased. Explain.**

1. Are Stoplights needed at the intersection of Main and Perry?

2. Fewer accidents occur at intersections with stoplights than at intersections that do not have them. Would you be in favor of having stoplights installed to make the intersection at Main and Perry safer?

3. Installing a new stoplight will require detours that will decrease traffic to local businesses for up to a month. Should stoplights be installed at the corner of Main and Perry?

4. Should stoplights be installed at the corner of Main and Perry?

**Determine whether each survey question may be biased. Explain.**

1. When it comes to pets, do you prefer cats?

2. What is your favorite season?

3. Would a theme park with expensive ticket prices be a good place for a field trip?

4. What is your favorite horror movie?