# 11.2 Collecting Data

Prescribed Learning Outcomes (PLO’S):

* Identifying the difference between a population and a sample
* Identifying different types of samples
* Justifying using a population or a sample for given situations
* Determining whether results from a sample can be applied to a population

**Terminology**

Population: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ individuals in the group being studied.
Example: all eligible voters in B.C. for the provincial election

Sample: Any \_\_\_\_\_\_\_\_\_\_\_\_\_ of individuals selected from the population.

Example: a sample could be 50 eligible voters from each city in B.C.

There are several types of samples

**Convenience**: Creating a sample by choosing individuals from the population that are easy to access.

**Random**: Creating a sample by choosing a specific number of individuals randomly from the whole population.

* **Stratified sample**: Dividing the population into groups and choosing the same number of members from each group
* **Systematic sample**: Choosing individuals at fixed intervals from an ordered list of the whole population

**Voluntary Response**: Creating a sample by inviting the whole population to participate.

Thinking of the three types of samples. Which could create the least amount of bias? Which could create the most amount of bias? Why?

**Example 1**. Suppose you wanted to change the structure of RAP. You create a survey describing the different options available.

1. Who would you want to survey?
2. What type of sample would create the least amount of bias?

**Example 2**. In each case, identify the population then state whether you would survey the population or a sample. Explain your reasoning.

1. The NHL wants to know which team hockey fans want to win the Stanley cup.
2. Global News wants to know which political party is favourite among voters in B.C.

**Example 3**. Describe a scenario where you would not want to use a convenience sample.

**Example 4**. Describe how the sample could be selected. Identify the type of sample.

1. A teacher wishes to get feedback from her class about the school dance. She plans to survey 5 students out of 30.
2. A telephone company wants to determine whether a fitness centre would be well used by its 3000 employees. The company plans to survey 300 employees.
3. A marketing company mails surveys to all the adult residents in a town. The residents are asked to mail their responses in a prepaid envelope.

**Individual Task:**

Create a new Edublog Post. Title it: Thoughts on Data Analysis 2017

On your edublog:

1. explain what role you think statistics have in our society. Then read the following article:

<http://www.truthpizza.org/logic/stats.htm>

After you have read the article

1. explain anything new that you have learned about the importance of statistics in our society.
2. describe the different types of problems with statistics

You can give a typed response or create an audio recording of your response.

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