

1.5 Sampling Techniques

What do we have to think about when conducting a survey (gather data/information)?

- ★ What is the info for?
- ★ Who do you want the info from?
- ★ How can we get accurate results?



In order to make a survey fair we must consider:

- Population: all individuals or items in the group being studied → Who? ★
- Sample: group of individuals or items that represent the population → How many? How chosen? ★
- Structure of survey → What data? How collected? ★

Feb 24-8:48 AM

Ex 1: Identify the **population** about which information is being sought:

a) The management team at a shopping mall in Ottawa wants to know how to attract more people between the ages of 18 and 25 to the mall

👉 **People from Ottawa between the ages of 18 and 25**

b) A soft drink bottler wants to determine the actual volume of pop in 1 litre bottles.

👉 **All 1 Litre bottles of pop bottled by this company**

c) A polling company wishes to determine which political party is expected to win the next Federal election

👉 **All Canadians aged 18 or over who are eligible to vote**

Oct 5-1:51 PM

A **Census** is a survey of the ENTIRE population

Why would we only survey a sample of the population?



- time
- cost
- physical constraints

Ex 2: In each situation explain why you would collect data from a sample instead of the population:

- To find the average age when Canadian drivers got their licences
- To find the number of hours a AAA battery from Duracel will last.

*too many*  
*cost, time*

Oct 6-1:46 PM

### Types of Sampling

**Simple Random Sample:** Each member of the population has an equal chance of being selected

**Stratified Random Sample:** Population is divided into subgroups and a random sample from each is taken in proportion to its size in the population

**Cluster Sample:** Population is divided into clusters and all members of a cluster participate

**Systematic Sample:** Every ' $n$ '<sup>th</sup> member of the population is selected

**Voluntary-Response Sample:** Sample has only members of the population who choose to respond

**Convenience Sample:** Sample is members who were easiest to sample

Feb 24-9:25 AM

Ex 3: Identify the type of sample used in each of the following surveys

1. What time do you eat dinner? *Systematic*

Choosing every 6th student after selecting a random starting place on the class list

2. Do Grade 10 students like West? *Cluster*

Choose one class of Gr 10's from west to survey

3. Do you eat the caf food? *Stratified*

24% of Gr 9's, 28% of Gr 10's, 22% of Gr 11's and 26% of Gr 12's were asked

4. Does Dunrobin need another traffic light?

Ask all of your friends who live in Dunrobin *Convenience*

5. Do red cars look cooler? *Voluntary*

Only people who replied by email were included

6. Which hockey team do you cheer for? *Simple random*

Names of all participants drawn from a hat

May 12-10:02 AM

Ex 4: Class discussion Choose a Sampling Technique

a) Determine the best sampling technique for each survey.

b) Describe one method of selecting the sample.

c) Identify any problems with using the sampling technique.

1. The school newspaper wants to determine which presidential candidate in the upcoming student council elections is supported by the majority of students.

*Stratified Random / Cluster*

2. A light bulb manufacturer wants to determine the lifespan of a certain type of light bulb, in hours.

*Systematic Random*

3. The Parent-Teacher Association wants to determine the average number of hours per week that students spend on homework.

*- Stratified*

*- Simple Random*

Oct 5-2:17 PM

**Practice:**

**pg 106-109 # 2-4, 8, 9, 11**

Make sure you know all 6 types of sampling  
for next class!!!

Feb 26-8:48 AM