

Section 3.1 Sampling Techniques

- Choose the best sampling technique for each survey. Explain your choice.
 - A bolt manufacturer wants to determine the average length of bolt being made by a machine.
 - The president of a company wants to know which of two potential vice-presidents the employees prefer.
 - A music store wants to know what type of music they should stock for an upcoming sale.
- Identify the population and the sample in each situation.
 - You ask every student in your class about their favourite snack to recommend the type of snacks the cafeteria should sell.
 - All the dentists in the greater Toronto area are asked if they would recommend a new toothpaste designed to whiten teeth, so the manufacturer can indicate the percent of dentists who recommend the product on the box.
 - A new sandwich shop will open soon. The owners offer samples to people passing by on a busy Saturday afternoon to help them decide on their final menu.
- Explain how a random number generator can be used to pick a sample of 25 people from a group of 400.
- The government of Ontario wants to know how many college students find work right after they graduate.
 - Identify the population.
 - Is it practical to survey the entire population? Explain.
 - How could the whole population be surveyed effectively?
 - What would be a good sampling technique for the survey? Explain.
- Can you make accurate conclusions based on a sample of 10% of a population? Explain.
- Renee works as a quality control officer at a lumber yard. She selects every 200th two-by-four that is cut and measures its dimensions.
 - What type of sampling technique is she using?
 - Why is it not practical to measure every two-by-four?
 - How could Renee improve her sampling technique?
- The parent-teacher council wanted to determine the number of hours students spend on homework each night. They surveyed 15 grade 9s, 20 grade 10s, 25 grade 11s, and 10 grade 12s. The school has 225 grade 9s, 250 grade 10s, 310 grade 11s, and 125 grade 12s.
 - Is the sample representative of the population? Explain.
 - What type of sampling technique was used?
 - Is this an appropriate technique? Explain.
- Lucy wants to collect data about how well Canadian businesses are running one year after they opened. Explain how she can use each technique to choose a sample for her survey.
 - simple random sampling
 - cluster sampling
 - stratified random sampling
 - convenience sampling