

## 3

## Review

3.1 Sampling Techniques,  
pages 102–109

- In each situation, identify the sampling technique.
  - Kuljit went to the local music store to ask what people thought of the “Canadian Idol” winner’s debut CD.
  - The school council has set up a booth at the front of the school on Parents’ Night to ask about changing the school uniform.
  - Sherry asks 20 girls and 20 boys on the school sports teams if the sports council should spend the fundraising money on new football equipment.
- Cary plans to survey 100 people. Describe how Cary can choose a stratified sample if her survey population contains 1200 people, and 60% are female.
- Describe how a graphing calculator can be used to choose a random sample of 15 people from a population of 200 people.

3.2 Collect and Analyse Data,  
pages 110–117

- Rewrite the survey question so that it does not contain bias.  
*Most schools hold a carnival during their Spirit Week, which is usually a great success. Do you think that having a carnival would be a good idea for this year’s Spirit Week?*

- Identify the type of bias in each survey.
  - A survey to determine the effectiveness of a government’s social services is conducted at a homeless shelter.
  - A survey sent via the Internet asks people to answer a questionnaire and email it to a central processing station.
  - When asked to circle their favourite candidate in the student council, the choices were:  
*The President*  
*The secretary*  
*The treasurer*  
*Other: \_\_\_\_\_*
- Randy decides to hand out a survey to every fifth person entering the school. He asks them to fill it out and hand it in at the office when they are done.
  - What type of sampling technique is Randy using?
  - How could this sampling technique lead to inaccurate results?

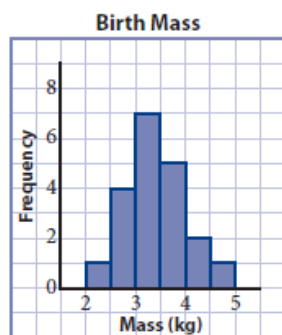
## 3.3 Display Data, pages 118–129

- The table shows the approximate amount of time Le Hing spent on various activities in one week.

Activity	Time (h)
doing homework	8.0
watching television	6.0
making phone calls and text messaging	8.0
playing volleyball	3.0
practising guitar	6.0

- Which two types of graphs could Le Hing use to display the information?
- Display the data using each type of graph.

8. The histogram shows the birth masses, in kilograms, of babies born at a hospital in one week.



- How many babies were born with a mass of at least 4.0 kg?
- What percent of the babies born were at least 2.0 kg but less than 3.5 kg?
- Explain why birth mass can be displayed in a histogram.

### 3.4 Measures of Central Tendency, pages 130–139

9. Find the mean, the median, and the mode for each set of data.
- 21, 45, 53, 47, 82, 21, 64, 77, 54, 92, 91, 72
  - 4, 7, 11, 8, 6, 6, 5, 3, 5, 7, 8, 14, 17, 18, 6, 4, 2, 2
  - 77, 78, 67, 54, 82, 91, 71, 73, 64, 68, 53, 87, 79
10. A gallery has these items for sale.
- 12 bronze statues for \$500 each
  - 50 paintings for \$100 each
  - 100 hand-painted tiles for \$25 each
- Find the mean, the median, and the mode of the prices.
  - Which measure of central tendency best represents the price of an item at the gallery? Explain.

### 3.5 Measures of Spread, pages 140–147

11. Find the range, the variance, and the standard deviation for each set of data.
- 28, 51, 91, 47, 56, 77, 64, 52, 71, 63
  - 202, 205, 213, 197, 200, 190, 198, 195
12. If you were the general manager for an NBA basketball team, would you prefer a larger or smaller standard deviation for player heights on your team? Explain.

### 3.6 Common Distributions, pages 148–155

13. Describe the characteristics of each distribution and give an example of each.
- a skewed distribution
  - a bimodal distribution
  - a normal distribution
14. The table shows the results of a test out of 100.

Mark Interval	Tally	Frequency
[30–40)		
[40–50)		
[50–60)		
[60–70)		
[70–80)		
[80–90)		
[90–100]		

- Copy and complete the table. Use the data to create a histogram.
- Do the data appear to be normally distributed? Explain.