MathLinks 8 Practice and Homework Book
Chapter 1 Answers

① Get Ready

1. Answers may vary. Example: The location of the axes will change. The number of books will be along the *x*-axis; the type of books will be along the y-axis. The number of books for each bar will stay the same.
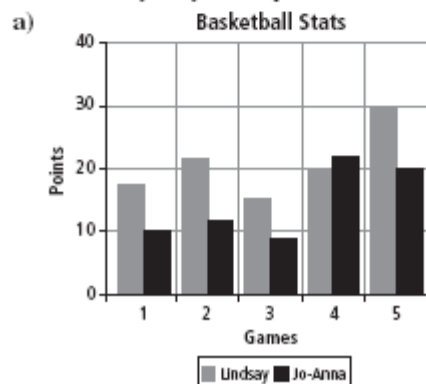
Zoe's Books

2. a) 10
   b) Answers may vary. Example: Who has the most books in total? They have the same number of books.

3. a) Chat Lines, 10 h
   b) No. Answers will vary. Example: Because there is no legend, the reader would not know what each sector of the graph represents.

4. a) Between April and May
   b) Answers may vary. Example: Yes, the trend will continue because of the seasons.

5. a) 40
   b) Answers may vary. Example: I added the total of full T-shirts and multiplied that by 10. Then, I added the half shirts and multiplied that by 5. I then added the two figures together.

1.1 Advantages and Disadvantages of Different Graphs

1. d) Circle graphs
2. b) Line graphs
3. e) Double bar graphs

4. c) Pictographs
5. a) Bar graphs
6. a) 30 more Grade 9s attended the dance. Answers may vary. Example: This is shown easily on the pictograph by multiplying the number of symbols times 12.
   b) Answers may vary. Example: You can easily calculate the number using the pictograph. Using the circle graph, you would have to calculate 12% of 300.
   c) Answers may vary. Example: Circle graph: You can see at a glance the largest group that attended. Pictograph: This graph lets you calculate actual numbers easily.

7. a) 16 more in November than September. Answers may vary. Example: The pictograph showed this clearly. The line graph has a large scale, so the exact number for each month is not clear—you would have to estimate.
   b) Between October and November.
   c) Answers may vary. Example: Line graph: The exact amounts are not clear, based on the scale used. Pictograph: You have to multiply to determine the number for each month.
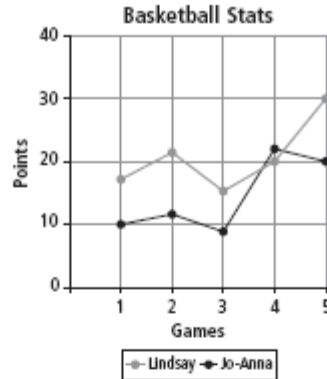
8. Answers may vary. Example:
   a)

Basketball Stats

b) Because Graph A uses values in 10s and the bars look shorter, people might think Graph A shows less precipitation than Graph B shows.

c) I think the director should choose Graph A, because it looks like there is less rainfall when the amounts are shown in centimetres.

4. a) Tigers, by 6%

Answers may vary. Example:

b) The larger graphic and the title suggest that the difference in the number of fans supporting each team was significantly greater than it actually was.

c) You could draw a circle graph to show the difference in attendance.

5. a) 2 km

b) Answers may vary. Example: I would redraw the graph using bars the same width, and change the scale to show the difference more accurately.

6. Answers will vary. Example:

Keisha's Practice Time

I used a bar graph with a large interval on the vertical axis to make the bars seem really large. I reversed the weeks on the horizontal axis to make it appear as though the band is practising longer each week.

1.3 Critiquing Data Presentation

1. c) usefulness

2. b) format

3. a) type

4. Answers may vary. Example:

a) It shows the comparison of all the snacks and makes it easier to see which are the most popular.

Basketball Stats

b) Answers may vary. Example: They both show the data given. To compare growth over time, the line graph is better. To look at the total number of points, the bar graph is better.

9. Answers may vary. Example:

a) I would draw a bar graph to show the comparison of each type of game. This would easily display the most popular and least popular type of game.

b) No, a line graph is best used for showing change over time. These data show the amount sold; they do not include any length of time.
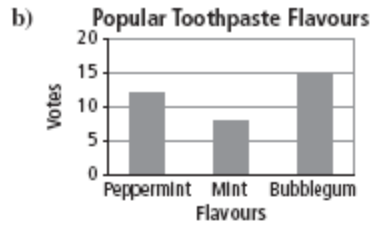
1.2 Misrepresenting Data

1. a) data, false **b)** scale, visuals

2. a) Answers may vary. Example: Because of the break in the y-axis, this graph leads you to believe that Tina sold significantly more than Tim or Ty. The title also suggests that.

b) $500

c) Answers may vary. Example: The graph should be drawn using a proper scale and the title should be Employee Sales.

3. Answers may vary. Example:

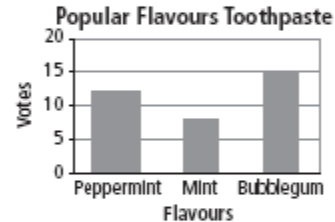**a)** Graph A shows rainfall by centimetres and Graph B by millimetres, but the amounts work out to be the same.

b) This graph does not show the other snacks that may be in the vending machine already, so there is no comparison and we do not know why the snacks should be changed.

5. Answers may vary. Example:
   a) The conclusions are that one park has three activities and the other has one.
   b) No, this is not the best graph, maybe use separate bar graphs showing all the types of activities in each park.

6. Answers may vary. Example:
   a) The bar graph shows the number of positions available for each job each month, and the circle graph shows the percent of students working in each type of job.
   b) The bar graph shows more information about job availability throughout the months; there is more of a chance to get a job in June or July with baseball, but delivering flyers remains steady.
   c) The circle graph shows that about the same percent of students work at each job.

7. Answers may vary. Example:
   a) This graph shows that Stephanie had five main interests that week: sports, computer, visiting, shopping, and reading. It also shows how she divided her spare time that week.
   b) This graph shows that Stephanie has several interests. She appears to share her time among her five main interests, with a little more time spent playing sports. There is no indication of how long Stephanie spends doing each activity.

1 Link It Together

1. Answers may vary. Example:
   a) I believe the best way to show the data would be a bar graph because a bar graph will clearly compare the student preferences across flavours.

b)

Popular Toothpaste Flavours

c) One advantage of a bar graph is that you can clearly see the comparison between all three flavours, which one has the most votes, and which one the least votes. One disadvantage is that, depending on the scale, the exact number of votes could be difficult to identify.

2. a) Answers may vary. Example: You can mislead the reader by making the peppermint bar wider, which may make it appear more popular.

Popular Flavours Toothpaste

b) You could use a circle graph or a pictograph to show the same information. A circle graph would show the fraction of votes each flavour received. A pictograph would show the number of votes each flavour received.

1 Vocabulary Link

1. double bar graph
2. bar graph
3. trend
4. line graph
5. distort
6. circle graph
7. pictograph
8. interval
9. double line graph