Get Ready

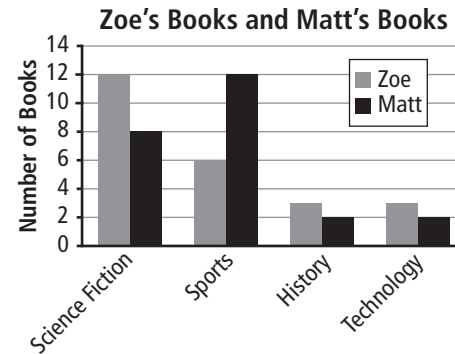**Name:** _____   **Date:** _____

Bar Graphs and Double Bar Graphs

The **bar graph** shows that Zoe has twice as many science fiction books as books about sports.

Zoe's Books

The **double bar graph** shows that Matt has twice as many sports books as Zoe has.
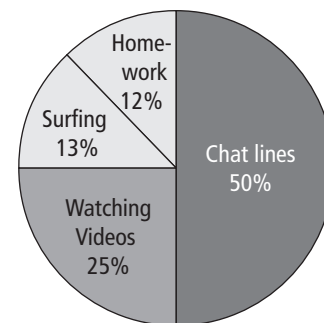
Zoe's Books and Matt's Books

The bars in bar graphs can be vertical or horizontal. Bar graphs leave space between each data category.

1. Use the bar graph about Zoe's books to answer the question: If the bars were drawn horizontally, what would change on the graph? What would stay the same? Redraw the bar graph using horizontal bars.

2. Use the double bar graph to answer these questions.

a) How many more sports books does Matt have than history books?

b) Write another question you could ask about the graph. Develop an answer for your question.

Circle Graphs

The **circle graph** shows the different activities that Akira does online.

Akira's Week on Internet (20 h)

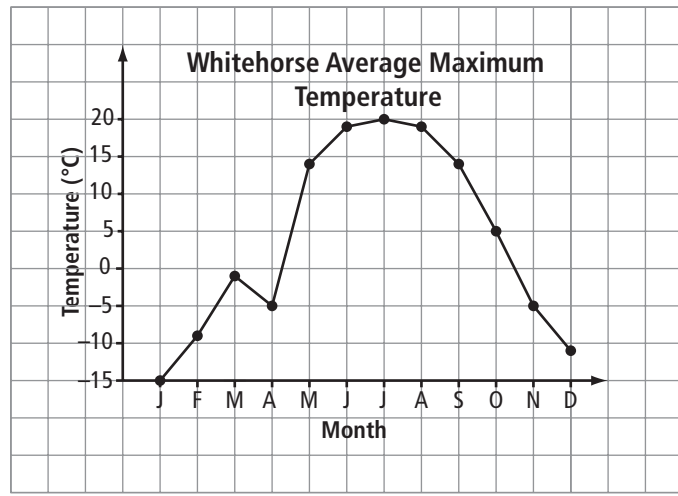**PDF Proof**   ◀ aptara

3. Use the circle graph to answer these
   questions.
   a) What activity did Akira spend the
   most time on? How many hours
   did she spend?

b) Would this circle graph make
   sense if the titles or labels were
   missing? Explain.

Line Graphs

The **line graph** shows changes
in average maximum temperature
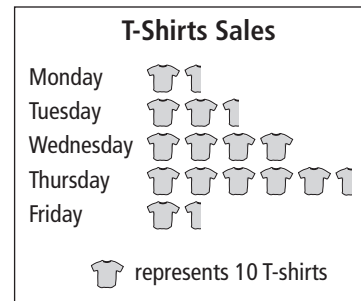for each month in Whitehorse,
Yukon Territory.

Whitehorse Average Maximum Temperature

4. Use the line graph to answer these
   questions.
   a) When did the greatest
   temperature change happen?

b) Do you think the trend of rising
   and falling temperatures will
   continue? Explain.

Pictographs

The **pictograph** shows that more T-shirts were
sold on Thursday than on any other day that week.

T-Shirts Sales

Monday
Tuesday
Wednesday
Thursday
Friday

represents 10 T-shirts

5. Use the pictograph to answer these
   questions.
   a) How many more T-shirts were sold
   on Thursday than on Friday?

b) Explain how you used the
   pictograph to answer part a).

Name: _____   **Date:** _____

1.1 Advantages and Disadvantages of Different Graphs
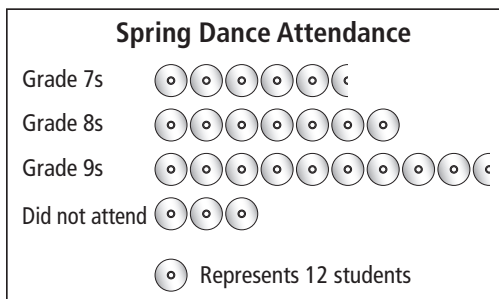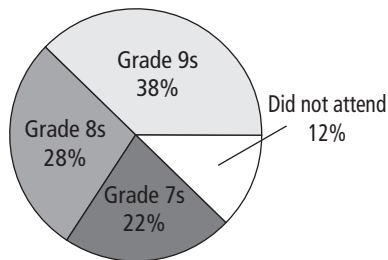
MathLinks 8, **pages 6–17**

Key Ideas Review

Column B lists several types of graphs. Write the type of graph from column B that best matches the description in column A.

A	B
1. _____ are best for comparing categories to the whole using percents.	**a)** Bar graphs
2. _____ are best for showing changes in data over time.	**b)** Line graphs
3. _____ are best for comparing two sets of data across categories.	**c)** Pictographs
4. _____ are best for comparing data that can be easily counted and represented using symbols.	**d)** Circle graphs
5. _____ are best for comparing data across categories.	**e)** Double bar graphs

Practise and Apply

6. The student council recorded the number of grade 7, 8, and 9 students who attended the spring dance.

Spring Dance Attendance (300 students)

Grade 9s 38%
Did not attend 12%
Grade 8s 28%
Grade 7s 22%

Spring Dance Attendance

Grade 7s
Grade 8s
Grade 9s
Did not attend

⊙ Represents 12 students

a) How many more grade 9 students attended the dance compared to the number of grade 8 students? Which graph shows this more clearly? Explain.
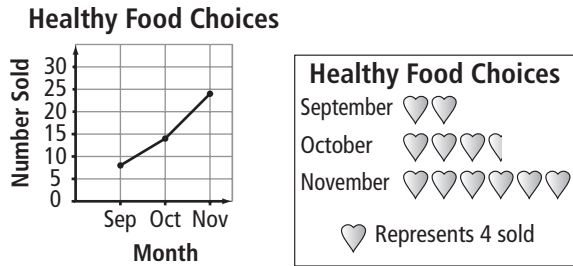
b) Which graph better shows the number of students who did not attend the dance? Justify your answer.

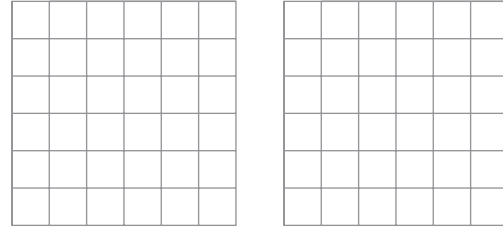**c)** Describe one advantage of using each graph.

Name: _____   **Date:** _____

7. The graphs show the popularity of healthy food choices, such as mixes of nuts and dried fruit, sold in a school vending machine during the first three months of school.

Healthy Food Choices

a) How many more healthy items were sold in November compared to sales in September? Which graph displays this more clearly? Explain your answer.

b) Between which two months was the greatest increase in sales of healthy items?

c) Describe one disadvantage of using each graph.

8. These tables show the points scored during the first five games of the girls' basketball season.

Lindsay	
Game	Points
1	18
2	22
3	16
4	20
5	30

Jo-Anna	
Game	Points
1	10
2	12
3	8
4	22
5	20

a) Draw a double bar graph and a double line graph to display these data.

b) Compare the two graphs you drew. Does one present the data more clearly? Explain your answer.

9. The table shows the number of games Leah sold at the Village Games Shop in July.

Type of Game	Number Sold
Puzzle	7
Board	13
Computer	10
Video	5

a) Choose one type of graph to display these data. Explain your choice.

b) Would a line graph be a good choice to display these data? Justify your answer.

Name: _____   **Date:** _____

1.2 Misrepresenting Data

MathLinks 8, pages 18–27

Key Ideas Review

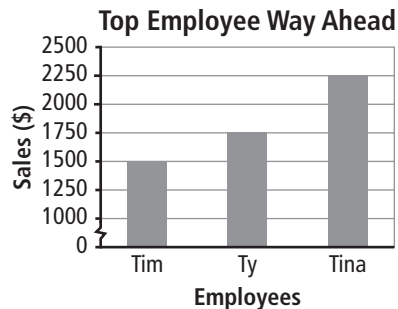*Choose from the following terms to complete #1.*

data	false	scale	visuals

1. a) People may misinterpret _____ and draw _____ conclusions when graphs are misleading.

b) Misleading features of graphs may include the following:

• Distorting the _____.

• Distorting the information by using _____ of different sizes.

Practise and Apply

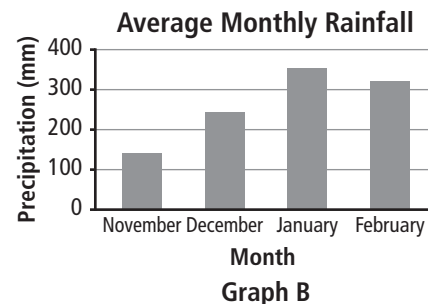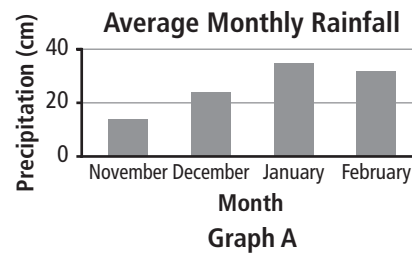**2.** Three employees' sales for one week are shown in the following graph.

Top Employee Way Ahead

a) Explain how this graph could be misleading.

b) How much more did Tina sell compared to Ty?

c) How should the graph be drawn to make it clearer?

3. A tropical destination wants to increase the number of travellers to its resort. The marketing director is trying to decide which graph about rainfall should be included in the new brochure.
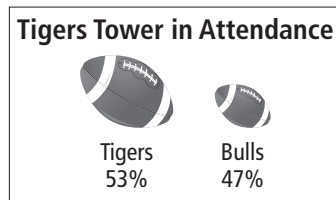
Average Monthly Rainfall

Graph A

Average Monthly Rainfall

Graph B

Name: _____   **Date:** _____

a) How are the two graphs different?

b) Explain how Graph A could be misleading.

c) Which graph do you think the director should choose? Explain your answer.

4. The fans at a football game were asked which team they were supporting. This graph shows the results of the survey.
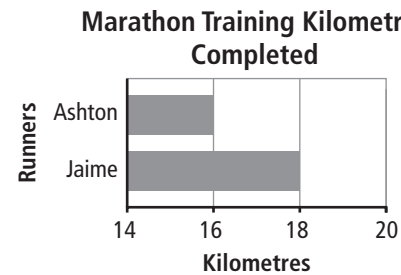
Tigers Tower in Attendance

Tigers   Bulls
53%   47%

a) Which team had more supporters at the game, and by how much?

b) How is this graph misleading?

c) How could you draw a graph to show the data more accurately?

5. Jaime and Ashton are training for the marathon. The graph below shows how many kilometres they have completed in their training so far.

Marathon Training Kilometres Completed

a) How many more kilometres has Jaime completed?

b) Describe how to redraw the graph to represent the data more accurately.

6. The information below shows Keisha's practice times for band. She wants to make her practice times look better than they are. Draw the graph she might create. Explain how your graph distorts the data.

Week	1	2	3	4
Practice Time (minutes)	40	25	30	10

Name: _____   **Date:** _____

1.3 Critiquing Data Presentation
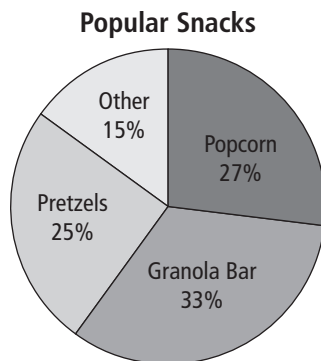
MathLinks 8, pages 28–35

Key Ideas Review

There are several important factors to consider when critiquing a graph. Write the factor from column B that best matches the analysis question in column A.

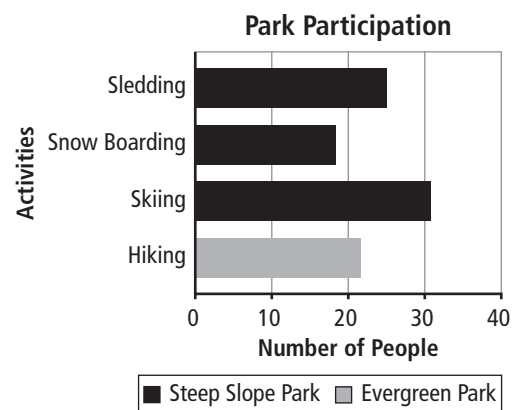| A	B
1. Consider the graph _____ when determining whether the graph is informative.	**a)** type
2. Consider the graph _____ when determining whether the graph is designed in a way that represents the data accurately.	**b)** format
3. Consider the graph _____ when determining whether the graph is the best choice for the data.	**c)** usefulness

Practise and Apply

4. Milo is writing to ask the school board to change the snacks in the school vending machines. Before writing the letter, he completes a survey of the snack foods students prefer and displays the results in the graph below.

Popular Snacks

Other 15%
Popcorn 27%
Pretzels 25%
Granola Bar 33%

a) Why do you think Milo used a circle graph to display the data?

b) Does this graph argue his point to change the snacks in the vending machine?

5. The following graph shows activities participated in at two different recreational parks.

Park Participation

Activities: Sledding, Snow Boarding, Skiing, Hiking
Number of People: 0 10 20 30 40

■ Steep Slope Park   ▨ Evergreen Park

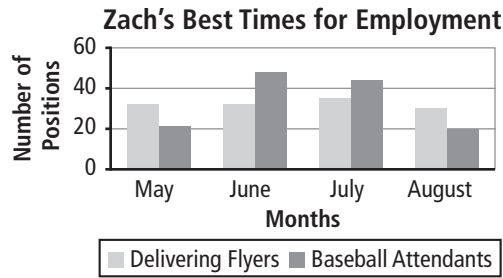**a)** What conclusions can you make about the graph?
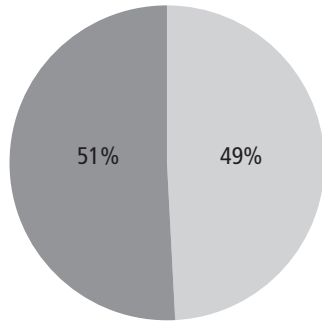
Name: _____   **Date:** _____

b) Is this graph the best choice for the data? Explain.

c) Using the graph that you did not choose for part b), what could this graph be used to describe?

6. Zach and Jessie must pick a summer job. They have narrowed their options down to two choices. Each one makes a graph.
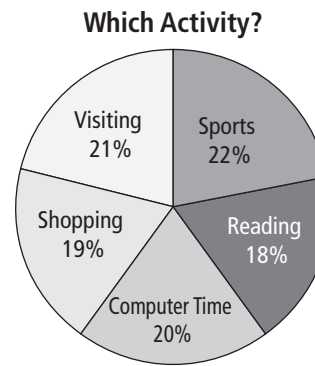
Zach's Best Times for Employment

Delivering Flyers ■ Baseball Attendants

Jessie's Summer Employment Available

51%   49%

■ Delivering Flyers ■ Baseball Attendants

a) What information does each graph show?

b) Which graph best displays the information Zach and Jessie need to make a decision? Explain.

7. Stephanie recorded how many times she chose to do each activity in one week to make a favourite activity list.

Which Activity?

Visiting 21%
Sports 22%
Shopping 19%
Reading 18%
Computer Time 20%

a) What does this graph show about Stephanie's interests?

b) What conclusion could be drawn from this graph?

1.3 Critiquing Data Presentation • MHR   **9**

Name: _____   **Date:** _____

Link It Together

Matt and Anu are doing a science experiment where they make their own toothpaste. They survey their peers to find the most popular flavours of toothpaste.
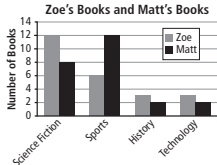
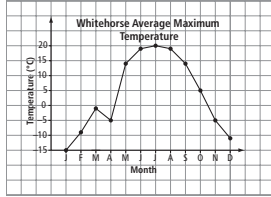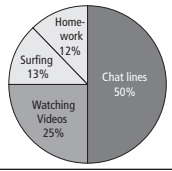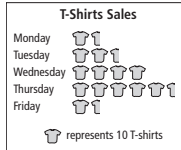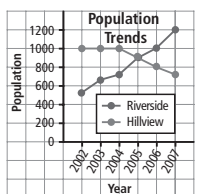| Toothpaste Flavours	Votes
Peppermint	12
Mint	8
Bubblegum	15

1. a) Which type of graph provides the best way to display the data? Justify your choice.

b) Draw the graph you have chosen.

c) Name one advantage and one disadvantage of using the type of graph you chose.

2. a) Peppermint is the easiest flavour to add to toothpaste. Create a graph that is misleading to show that peppermint is just as popular as bubblegum. Explain.

b) Is any other type of graph just as informative, or more informative than the one you chose? Explain.

Name: _____　　**Date:** _____

Vocabulary Link

Unscramble the letters of each term. The terms are one to three words long. Use the clues to help you solve the puzzles.

A	B
1. Zoe's Books and Matt's Books _____	RABGPLEHBOUDRA
2. Zoe's Books _____	ARHGPABR
3. general direction in which a line graph is going _____	DETNR
4. Whitehorse Average Maximum Temperature _____	RAEPIHNLG
5. change the appearance or twist the meaning of something in a way that is misleading _____	SDITOTR
6. Akira's Week on Internet (20 h) _____	RCPIACREHLG
7. T-Shirts Sales _____	PPAOCGTHRI
8. spread between the smallest and largest numbers in a range of numbers _____	ALNRVTEI
9. Population Trends _____	BPHEIDAUNEOLRLG