

Misrepresenting Data

Mathlinks 8, pages 18-27

Key Ideas Review

Choose from the following terms to complete #1.

- data
- false
- scale
- visuals

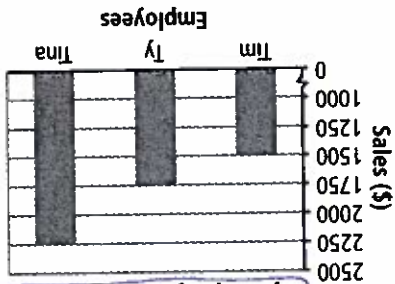
1. a) People may misinterpret data and draw false conclusions when graphs are misleading.

b) Misleading features of graphs may include the following:

- Distorting the scale
- Distorting the information by using visuals, bars, drawings of different sizes.

Practise and Apply

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



are shown in the following graph.

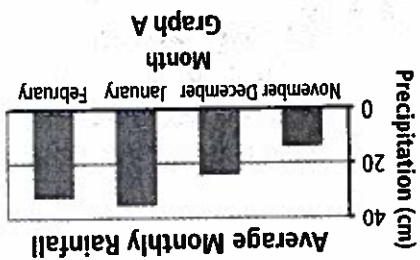
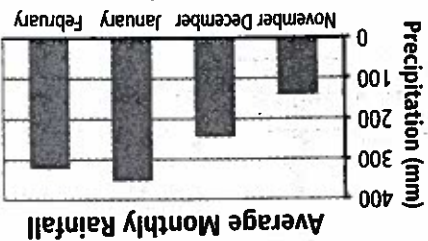
a) Explain how this graph could be misleading.

The title leads you to believe Tina is way ahead in sales.

The break in the graph distorts the graph giving longer bars.

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

$$\begin{array}{r} 2250 \\ - 1750 \\ \hline 500 \end{array}$$



new brochure.

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

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

The title should be Sales - Remove the break in the graph.

Date: _____

Name: _____

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B:

a) How are the two graphs different?
 - The y-axis scale is in cm and mm.

b) Explain how Graph A could be misleading.

- The smaller numbers on the y-axis produce shorter bars which leads you to believe there is less rain.
 - Which graph do you think the director should choose? Explain your answer.

They should choose Graph A because it shows less overall rain which would draw tourists.

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



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

The tigers by 6%.

$$\frac{53\%}{47\%} = 6\%$$

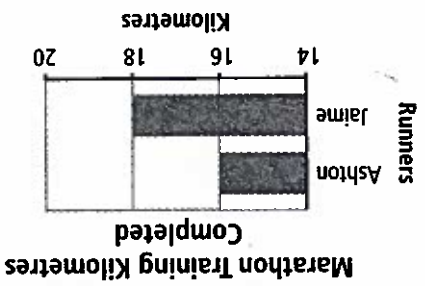
b) How is this graph misleading?

The title and the size of tigers football lead you to believe that have way more fans.
 c) How could you draw a graph to show the data more accurately?

- The title should be: Football Attendance.

- Both footballs should be roughly the same size.

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



a) How many more kilometres has Jaime completed?

$$16 - 14 = 2 \text{ km}$$

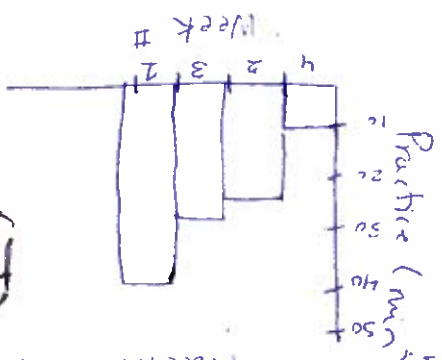
b) Describe how to redraw the graph to represent the data more accurately.

- Change the x-axis scale to go from 0 to 20.

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

Keisha's increasing practice time



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