

Section Overview

Line Graphs, Choosing an Appropriate Display

Lessons 7-6, 7-7

Why? Line graphs can show change over time. Choosing an appropriate data display depends on the purpose and the data.

You can use a bar graph to display and compare data.	You can use a circle graph to show how a set of data is divided into parts.	You can use a Venn diagram to show relationships between two or more data sets.
You can use a line plot to show the frequency of values.	You can use a line graph to show how data change over a period of time.	You can use a stem-and-leaf plot to show how often data values occur and how they are distributed.

Populations and Samples

Lesson 7-8

Why? Usually, it is not possible to collect data from every member of a **population**. Instead, a sample is drawn from the population.

A **sample** needs to be representative of the entire population. This is why a sample should be *random*. If the sample is not random, the information collected could inaccurately represent the population and reflect a bias.

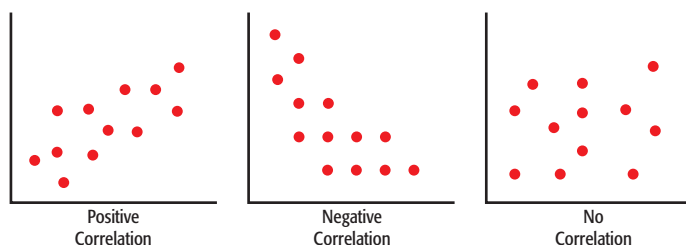
This is **not a random sample** because only those readers willing to mail in the responses will be included.

A magazine conducts a reader survey in which readers mail in responses.

Scatter Plots

Lesson 7-9

Why? Scatter plots are used to analyze how closely two sets of data are related. A relationship may be suggested by the plot; however, no cause and effect are implied.



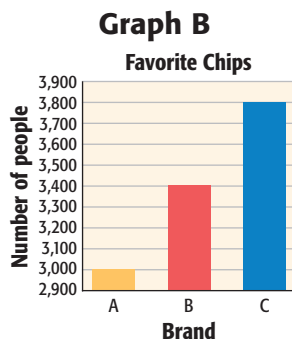
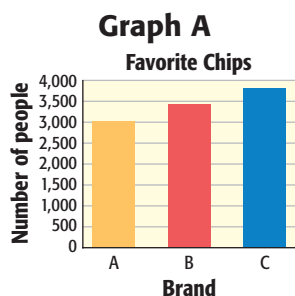
Correlation is used to describe an association between two sets of data.

Misleading Graphs

Lesson 7-10

Why? It is easy to use graphs to cause a misleading impression.

Graph A is a more accurate display of this survey data.



Look for size differences in pictorial graphs or bar graphs that compare two sets of data.

Sometimes, a break in one of the axes, or an axis that does not start at 0, or irregular intervals can result in a misleading graph.