

CHAPTER 1

Section 1.1 What are Data?

Write the vocabulary terms in this section on 3 x 5 cards and study them. Important terms include **variation, data, data analysis.**

Be sure to read and study the “Key Points,” highlighted in boxes in the text.

Be able to

- Name and explain the two major concepts in statistics
 - Explain the purpose for analyzing data
 - What is data?
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Section 1.2 Classifying and Storing Data

Write the vocabulary terms in this section on 3 x 5 cards and study them. Important terms include **variables, data set, sample, population, numerical variables, categorical variables, stacked data, unstacked data.**

Be sure to read and study the key points, highlighted in blue boxes in the text..

Be able to:

- determine if a given variable is numerical or categorical
 - explain what coding is (p. 7) and interpret the meaning of coded data (like Table 1.2) on p. 7
 - explain the advantages of using stacked data
 - determine whether a given data set is stacked or unstacked
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Section 1.3 Investigating Data

Become familiar with the Data Cycle, knowing the stages and being able to describe what happens at each stage of the cycle. Be sure you can

- Ask good questions and know what we mean by a good statistical question;
 - Determine which data are available to answer your question and be critical of the source of data;
 - Identify the first step to analyze data;
 - Explain what is meant by interpreting the data.
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Section 1.4 Organizing Categorical Data

Write the vocabulary terms in this section on 3 x 5 cards and study them. Important terms include **two-way tables, frequency, rates**.

Be sure to read and study the Key Points, highlighted in boxes in the text.

Be able to:

- Read a two-way table:
 - Determine percentages of data falling into certain categories or combination of categories
 - Determine the rate per unit (or per 1000) of a certain occurrence
 - Explain why rates are more useful than counts for describing and comparing groups
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Section 1.5 Collecting Data to Understand Causality

Write the vocabulary terms in this section on 3 x 5 cards and study them. Important terms include **causality, treatment variable, outcome variable, response variable, treatment group, control group, anecdote, placebo effect, observational study, association, confounding variable, controlled experiment, random assignment, bias, blind, double-blind**.

Be sure to read and study the key points, highlighted in blue boxes in the text.

Be able to:

- Determine if a given study is an observational study or a controlled experiment
- Discuss the difference between association and causation. When can causation be inferred?
- List the qualities of the “gold standard” for experiments (p. 23)