Data and Distributions and the Graphing Calculator

How often do people wash their hands after using a public restroom? Are men or women more likely to wash their hands? Are people in some parts of the country, or in some types of public places, more likely to wash their hands than others? These might not be life-or-death issues, but they have been analyzed in an extensive national study. A more serious issue is whether states can encourage drivers to wear seatbelts by passing laws to require seatbelt use. Are people in states with stricter laws more likely to buckle up than those in states with less strict laws? You will investigate these issues in this topic, as you begin to learn about comparing distributions of data across groups.

Overview

This topic continues your study of the ideas of variable and variability, as you begin to explore the notion of the distribution of a set of data measuring a particular variable. One way to examine the distribution of a set of data is to create a graph, which also leads you to a fundamental principle of data analysis: Start any analysis by looking at a graph of the data. By examining graphs and comparing distributions, you will discover the idea of a statistical tendency, which will arise throughout the course. As in Topic 1, you will find that context is crucial in statistics and that data can address interesting research questions.

Preliminaries

1. Take a guess for the percentage of people who wash their hands after using a public restroom.

2. Do you suspect that men or women are more likely to wash their hands after using a public restroom?

3. Guess the percentage of adult Americans who regularly wear a seatbelt in a car.

4. If the decision were entirely up to you, would you favor abolishing the penny, making the nickel the lowest denomination coin?