Table 2-6 Frequency Distribution Showing a Normal Distribution

Score	Frequency	Normal Distribution
50–69	1	← Frequencies start low, . . .
70–89	10	
90–109	56	← Increase to a maximum, . . .
110–129	10	
130–149	1	← Decrease to become low again.

The following examples illustrate how frequency distributions are used to describe, explore, and compare data sets.

Example 3 **Describing Data: How Were the Weights Obtained in California?**

When collecting weights of people, it's better to actually weigh people than to ask them what they weigh. People often tend to round *way* down, so that a weight of 196 lb might be reported as 170 lb. Table 2-7 summarizes the *last digits* of the weights of 100 people used in the California Health Interview Survey. If people are actually weighed on a scale, the last digits of weights tend to have frequencies that are approximately the same, but Table 2-6 shows that the vast majority of weights have last digits of 0 or 5, and this is strong evidence that people reported their weights and were not physically weighed. (Also, the word "interview" in the title of the California Health Interview Survey reveals that people were interviewed and were not physically measured.)

Table 2-7 Last Digits of Weights from the California Health Interview Survey

Last Digit of Weight	Frequency
0	46
1	1
2	2
3	3
4	3
5	30
6	4
7	0
8	8
9	3

Example 4 **Exploring Data: What Does a Gap Tell Us?**

Table 2-8 is a frequency distribution of the weights (grams) of randomly selected pennies. Examination of the frequencies reveals a large *gap* between the lightest pennies and the heaviest pennies. This suggests that we have two different populations: Pennies made before 1983 are 95% copper and 5% zinc, but pennies made