

Displaying and Interpreting Data

(Pages 38–43)

Graphs are a good way to display and analyze data. A **line graph** shows trends or changes over time. To construct a line graph, include a title, a label on each axis describing the variable it represents, and equal intervals on each axis. A **histogram** uses data from a frequency table and displays it over equal intervals. It includes the same three items as the line graph. All the bars should be the same width with no space between them. In a **stem-and-leaf plot**, the greatest common place value for each data item is used to form the *stem*. The *leaves* are formed by the next greatest place value.

EXAMPLE

Organize the following test scores into a stem-and-leaf plot.

72, 69, 98, 77, 92, 85, 79, 86, 90, 98, 83, 100, 77, 98, 91

Since the data range from 69 to 100, the stems range from 6 to 10. Plot each number by placing the units digit (leaf) to the right of its correct stem.

Stem	Leaf
6	9
7	2 7 7 9
8	3 5 6
9	0 1 2 8 8 8
10	0

813 = 83

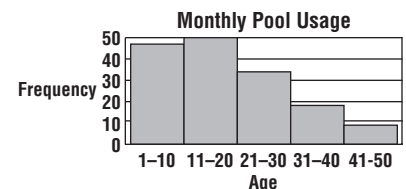
PRACTICE

1. The table at the right shows the mean SAT scores in math for both males and females.

Year	Mean SAT Score in Math
1995	506
1996	508
1997	511
1998	512

- Make a line graph of the data.
- Describe the general trend in scores.
- Predict the math score in the year 2000.

2. Refer to the histogram at the right.



- Which age group is least likely to be at the pool at any given time?
- The pool manager thinks he should hire a lifeguard. Is this a good idea?

3. **Geology** The stem-and-leaf plot at the right gives data about earthquakes of Richter scale magnitude 5.0 or greater in southern California over the past 30 years.

Stem	Leaf
5	2 2 2 2 2 2 2 3 3 3 3 3 6 7
6	1 1 1 2 2 2 3 3 3 4 4 4 7 7
7	1 1 1 1 1 2 2 2
8	1 2

812 = 8.2

- What was the most frequent magnitude of the earthquakes?
- What was the lowest Richter scale magnitude recorded?



4. **Standardized Test Practice** Write the stems that would be used for a plot of the following set of data. 112, 132, 115, 155, 143, 129, 128

- | | |
|---------------------------------|-----------------------------|
| A 10, 11, 12, 13, 14, 15 | B 11, 20, 30, 40, 50 |
| C 10, 20, 30, 40, 50 | D 11, 12, 13, 14, 15 |

Answers: 1a. See Answer Key. 1b. Scores are increasing slightly. 1c. Sample Answer: Between 5.13 and 5.17 2a. 4.1–5.0 2b. Yes. Those most frequently using the pool are 1–20. 3a. 5.2 3b. 5.2 4. D