11.5 Choosing a Data Display
For use with Exploration 11.5

Essential Question  How can you display data in a way that helps you make decisions?

EXPLORATION: Displaying Data

Work with a partner. Analyze the data and then create a display that best represents the data. Explain your choice of data display.

a. A group of schools in New England participated in a 2-month study and reported 3962 animals found dead along roads.

   birds: 307  
   mammals: 2746  
   amphibians: 145  
   reptiles: 75  
   unknown: 689

b. The data below show the numbers of black bears killed on a state’s roads from 1993 to 2012.

   1993: 30  2003: 74  
   1995: 46  2005: 82  
   1998: 35  2008: 129  
   1999: 43  2009: 111  
   2000: 47  2010: 127  
   2001: 49  2011: 141  
   2002: 61  2012: 135

c. A 1-week study along a 4-mile section of road found the following weights (in pounds) of raccoons that had been killed by vehicles.

   13.4  14.8  17.0  12.9  21.3  21.5  16.8  14.8  
   15.2  18.7  18.6  17.2  18.5  9.4  19.4  15.7  
   14.5  9.5  25.4  21.5  17.3  19.1  11.0  12.4  
   20.4  13.6  17.5  18.5  21.5  14.0  13.9  19.0
11.5 Choosing a Data Display (continued)

EXPLORATION: Displaying Data (continued)

d. A yearlong study by volunteers in California reported the following numbers of animals killed by motor vehicles.

- raccoons: 1693
- skunks: 1372
- ground squirrels: 845
- opossum: 763
- deer: 761
- gray squirrels: 715
- cottontail rabbits: 629
- barn owls: 486
- jackrabbits: 466
- gopher snakes: 363

Communicate Your Answer

2. How can you display data in a way that helps you make decisions?

3. Use the Internet or some other reference to find examples of the following types of data displays.

- bar graph
- circle graph
- scatter plot
- stem-and-leaf plot
- pictograph
- line graph
- box-and-whisker plot
- histogram
- dot plot
In your own words, write the meaning of each vocabulary term.

qualitative (categorical) data

quantitative data

misleading graph

Core Concepts

Types of Data

Qualitative data, or categorical data, consist of labels or nonnumerical entries that can be separated into different categories. When using qualitative data, operations such as adding or finding a mean do not make sense.

Quantitative data consist of numbers that represent counts or measurements.

Notes:
Extra Practice

In Exercises 1–4, tell whether the data are qualitative or quantitative. Explain your reasoning.

1. bookmarks in your web browser

2. heights of players on a basketball team

3. the number of kilobytes in a downloaded file

4. FM radio station numbers

In Exercises 5 and 6, analyze the data and then create a display that best represents the data. Explain your reasoning.

5. | Home Runs Each Year |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Babe Ruth</strong></td>
</tr>
<tr>
<td>0 4 3 2 11 29</td>
</tr>
<tr>
<td>54 59 35 41 46 25</td>
</tr>
<tr>
<td>47 60 54 46 49 46</td>
</tr>
<tr>
<td>41 34 22 6</td>
</tr>
</tbody>
</table>
6. **Total Points Scored by a Basketball Team for Each Game**

<table>
<thead>
<tr>
<th></th>
<th>48</th>
<th>56</th>
<th>49</th>
<th>52</th>
<th>40</th>
<th>65</th>
</tr>
</thead>
<tbody>
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<td>59</td>
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</tr>
<tr>
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<td>41</td>
<td>44</td>
<td>33</td>
<td>44</td>
<td>30</td>
</tr>
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</table>

In Exercises 7 and 8, describe how the graph is misleading. Then explain how someone might misinterpret the graph.

7. **Walking**

<table>
<thead>
<tr>
<th>Minutes</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>0–59</td>
<td>24</td>
</tr>
<tr>
<td>60–89</td>
<td>16</td>
</tr>
<tr>
<td>90–119</td>
<td>4</td>
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</table>

8. **Test Score**

<table>
<thead>
<tr>
<th>Student</th>
<th>Score</th>
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<tbody>
<tr>
<td>Ann</td>
<td>80</td>
</tr>
<tr>
<td>Bob</td>
<td>90</td>
</tr>
<tr>
<td>Carol</td>
<td>65</td>
</tr>
<tr>
<td>Don</td>
<td>85</td>
</tr>
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