

## ANALYZING, GRAPHING AND DISPLAYING DATA

Graphs are used to display data in different ways. There are many types of graphs such as, bar graphs, histograms and line graphs.

- A **bar graph** compares data in categories and uses bars, either vertical or horizontal, to display the data.
- A **histogram** is used to graph frequency tables. It is similar to a bar graph, but with histograms the bars touch each other where with bar graphs the bars do not touch each other.
- A **line graph** is useful for graphing how data changes over time. With a line graph, data is plotted as points and lines are drawn to connect the points to show how the data changes.



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- When using a **bar graph**, **histogram**, and **line graph**, it is important that the graph starts at 0. This ensures that the data will be properly displayed. With a vertical bar graph, the categories are on the x-axis and the scale is on the y-axis.
- With a **line graph**, the line shows how the data changes over a period of time. If the line goes up, it means the data increased. If the line goes down, it means that the data decreased. If the line is flat from one point to another, it means that the data stayed the same.

- **Frequency tables** are used to display intervals or categories, and how many times that interval or category is picked. The frequency table below shows the intervals of hours of sleep a group of twenty-seven people get per night.

Hours of Sleep	Frequency
0-2	
2-4	
4-6	
6-8	
8-10	



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as follows with the key being  $1|3 = 13$  with a stem-and-leaf plot:

```

1 | 5, 6, 8
2 | 2, 5
3 | 1, 2, 6
  
```

## Try This!

1. Make a **bar graph** for the data that shows the number of acres in national forest:

Yellowstone- 2,200,000  
 Adirondack- 6,000,000  
 Glacier- 999,200

2. Make a **line graph** and a **scatter plot** for the data that shows how the price of sneakers has risen:

1970- \$5.00  
 1980- \$7.50

3. M



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40-50	6
50-60	4

4. Make a **stem-and-leaf plot** for the data about number of hours worked at a factory:

35, 40, 42, 38, 25, 20, 33, 28, 41, 40