

## Activity 4: Grouped Data

- PURPOSE** Display data using grouped frequency tables and stem-and-leaf plots.
- GROUPING** Work individually or in pairs.
- GETTING STARTED** In many situations, there may be so much data, or the data may be so spread out, that it becomes difficult to construct a line plot or a frequency table for individual items. In such cases, it may be more convenient to group the data.

President	Political Party <sup>1</sup>	Age at Inauguration	President	Political Party <sup>1</sup>	Age at Inauguration
Washington	F	57	Cleveland	D	47
J. Adams	F	61	B. Harrison	R	55
Jefferson	DR	57	Cleveland	D	55
Madison	DR	57	McKinley	R	54
Monroe	DR	58	T. Roosevelt	R	42
J. Q. Adams	DR	57	Taft	R	51
Jackson	D	61	Wilson	D	56
Van Buren	D	54	Harding	R	55
W. H. Harrison	W	68	Coolidge	R	51
Tyler	W	51	Hoover	R	54
Polk	D	49	F. D. Roosevelt	D	51
Taylor	W	64	Truman	D	60
Fillmore	W	50	Eisenhower	R	62
Pierce	D	48	Kennedy	D	43
Buchanan	D	65	L. B. Johnson	D	55
Lincoln	R	52	Nixon	R	56
A. Johnson	U	56	Ford	R	61
Grant	R	46	Carter	D	52
Hayes	R	54	Reagan	R	69
Garfield	R	49	Bush	R	64
Arthur	R	51	Clinton	D	46

<sup>1</sup>F = Federalist, DR = Democratic-Republican, D = Democrat, W = Whig, R = Republican, U = Unionist  
 SOURCE: *The World Almanac and Book of Facts 1992.*

### GROUPED FREQUENCY TABLES

Complete the *grouped frequency table* for the presidents' ages at inauguration.

How many different ages can fall within an interval in the table?

Can you determine the range, median, and mode of the ages from the information in the table? Explain why or why not for each statistic.

Age at Inauguration		
Interval	Tally	Frequency
40-44		
45-49		
50-54		
55-59		
60-64		
65-69		

## STEM-AND-LEAF PLOTS

*Stem-and-leaf plots* provide a natural way to group data in intervals. To construct a stem-and-leaf plot, first find the smallest and the largest data points.

What is the youngest age at inauguration for the presidents? \_\_\_\_\_ the oldest age? \_\_\_\_\_

Next, decide on the stems. Since the presidents were inaugurated in their 40s, 50s, and 60s, use the tens digits of the ages as the stems. Write the stem digits in a column from least to greatest on the left side of a vertical line, as shown.

Stem	Leaf
4	
5	
6	

For each age at inauguration, record a leaf by writing the units digit of the age on the right side of the vertical line in the row that contains its stem. The leaves for Washington and J. Adams have been done for you.

Stem	Leaf
4	
5	7
6	1

After all the leaves have been recorded, rearrange the leaves in increasing order.

Use the stem-and-leaf plot to find the range, median, and mode of the ages at inauguration.

How are a stem-and-leaf plot and a grouped frequency table alike? How do they differ?

Stem	Leaf
4	
5	
6	

On the grid, list the stems for the age at inauguration in the center column. Construct a stem-and-leaf plot for the age at inauguration of the Democratic (D) presidents to the left of the stems and one for the Republican (R) presidents to the right of the stems.

How do the ages at inauguration of Democratic presidents compare to those of Republican presidents?

Democratic		Republican
	Stem	