

Stem-and-Leaf Plots

In a stem-and-leaf plot, numerical data are listed in ascending or descending order. The digits in the greatest place value of the data are used for the stems. The digits in the next greatest place value form the leaves.

Real-World EXAMPLE Draw a Stem-and-Leaf Plot

1 OLYMPICS The table shows the total points scored in the first beach volleyball match played by each team in the 2004 Olympics. Display the data for the men's teams in a stem-and-leaf plot.

Beach Volleyball Scores		
Country	Men	Women
Greece	52	47
United States	61	42
Brazil	42	42
Canada	44	42
South Africa	60	17
Cuba	50	54
Germany	55	52
Australia	42	42
Switzerland	49	29
Norway	46	37

Source: Athens 2004

Step 1 Find the least and the greatest number. Then identify the greatest place value digit in each number.

- The least number, 42, has 4 in the tens place.
- The greatest number, 61, has 6 in the tens place.

Step 2 Draw a vertical line and write the stems from 4 to 6 to the left of the line.

Stem	Leaf
4	
5	
6	

Step 3 Write the leaves to the right of the corresponding stem on the *other* side of the line. For example, for 42, write 2 to the right of 4.

Stem	Leaf
4	2 4 2 9 6
5	2 0 5
6	1 0

Step 4 Rearrange the leaves so they are ordered from least to greatest. Repeat a leaf as often as it occurs. Then include a key to explain how to interpret the data.

Beach Volleyball Scores	
Stem	Leaf
4	2 2 4 6 9
5	0 2 5
6	0 1

$5|2 = 52$ points

Refer to the stem-and-leaf plot in Example 1.

- In which interval(s) do most of the scores occur?
- What is the range of the data?
- What is the median score?

Two sets of data can be compared using a **back-to-back stem-and-leaf plot**. The back-to-back stem-and-leaf plot below shows the scores of two basketball teams for the games in one season.

The leaves for one set of data are on one side of the stem.

Points Scored		
Falcons	Stem	Cardinals
7 6 5 5 4 2 2 2	6	2 4
8 8 8 5 4	7	0 2 2 5 7 9
1 0 0	8	1 3 4 6 8 9 9

$1|8 = 81$ points

$8|6 = 86$ points

The leaves for the other set of data are on the other side of the stem.