1.4 Displaying Quantitative Data: Stemplots Part 1

Another simple type of graph for displaying quantitative data is a stemplot (often called a *stem-and-leaf plot*).

A **stemplot** shows each data value separated into two parts: a *stem*, which consists of all but the final digit, and a *leaf*, the final digit.

The stems are ordered from least to greatest and arranged in a vertical column. The leaves are arranged in increasing order out from the appropriate stems.

Steps in Making a Stem-and-Leaf Plot:

Step #1: Find the least and the greatest item of data.

Step #2: Find the stem (the greatest place value of the data) and place on the left side.

Step #3: Put the leaves (the digit that pairs with the stem) on the right side.

Step #4: Arrange the leaves so they are ordered from least to greatest.

Step #5: Include an explanation of the data.

We can get a better picture of data by

splitting stems.
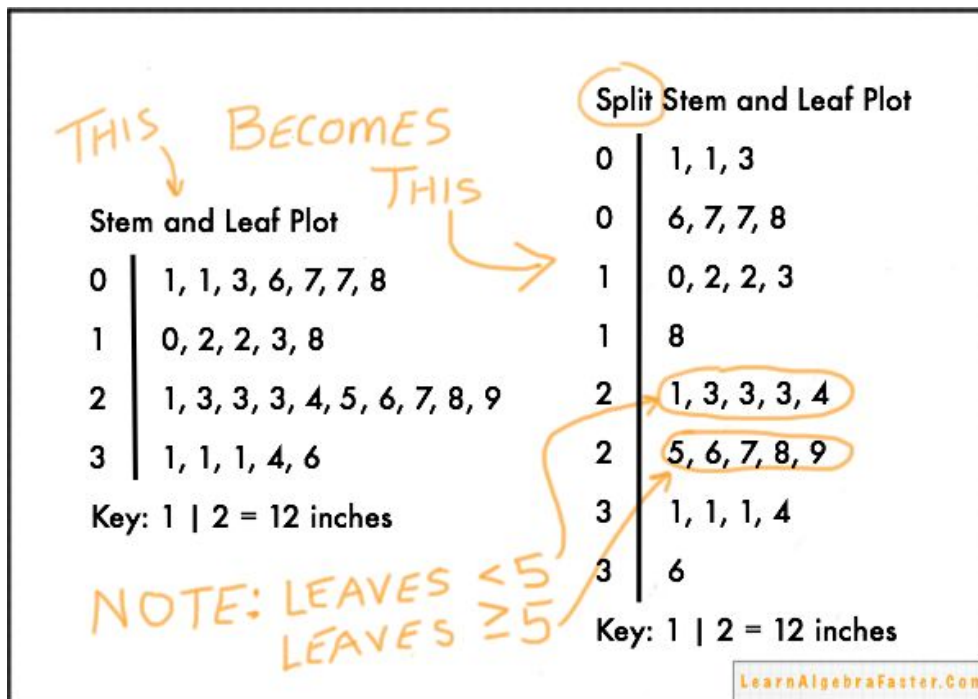
Here are a few tips to consider before making a stemplot:

1. There is no magic number of stems to use. Too few or too many stems will make it difficult to see the distribution's shape. Five stems is a good minimum.

2. If you split stems, be sure that each stem is assigned an equal number of possible leaf digits.

3. When the data have too many digits, you can get more flexibility by rounding or truncating (shortening) the data.
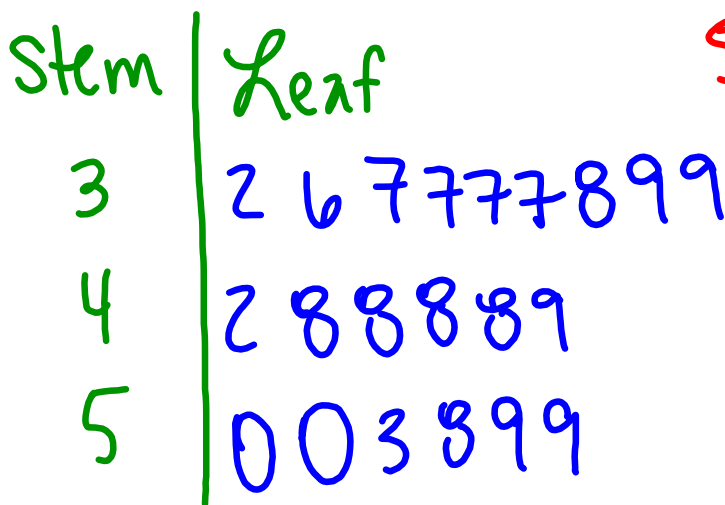
Example: Make a stem-and-leaf plot of the data.

27, 52, 31, 22, 42, 43, 37, 52, 44, 36, 28, 35, 57, 36,
41, 34, 49, 28, 36, 40

Stem	Leaf
2	2 7 8 8
3	1 4 5 6 6 6 7
4	0 1 2 3 4 9
5	2 2 7
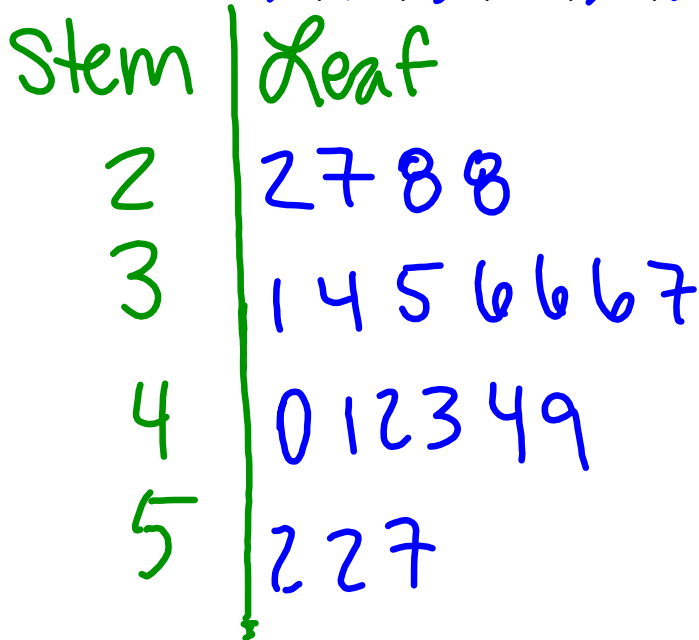
5|2 means 52.

Example: Make a stem-and-leaf plot of the data.

53, 42, 49, 38, 39, 48, 37, 48, 37, 39, 58, 59, 32, 50,
59, 37, 36, 48, 37, 48, 50

Stem	Leaf
3	2 6 7 7 7 7 8 9 9
4	2 8 8 8 8 9
5	0 0 3 8 9 9

5|0 means 50.

Example: Make a stem-and-leaf plot of the data.

27, 25, 5, 23, 7, 18, 23, 13, 14, 8, 10, 17, 12, 19, 19,
30, 18, 19, 14, 23, 9, 15, 23, 13, 29, 16, 27, 19, 22, 15,
16, 33

Stem	Leaf
0	5 7 8 9
1	0 2 3 3 4 4 5 5 6 6 7 8 8 9 9 9 9
2	2 3 3 3 3 5 7 7 9
3	0 3

2|2 means 22.
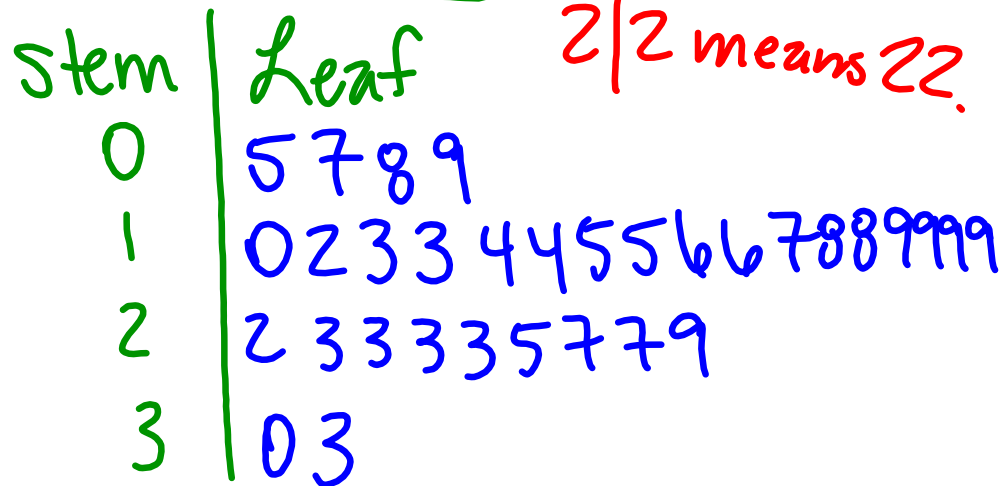
Example: Make a stem-and-leaf plot of the data.

157, 164, 174, 203, 150, 166, 153, 180, 162, 156, 163

Stem	Leaf
15	0 3 6 7
16	2 3 4 6
17	4
18	0
19	
20	3

16|2 means 162.