

STATISTICS - the science of collecting, analyzing,  
 + reporting information about  
 a set of data

Heights of U.S. Mountains

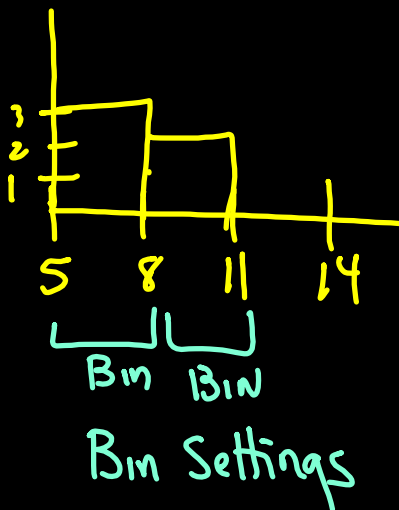
15,705	17,440	15,015
15,320	16,277	16,286
16,390	20,320	16,550
18,008	15,658	

Stem-and-Leaf Plot

<u>Truncated</u>			<u>Rounded</u>		
7	6	3 0	15	0	3 7 7
5	3	2 2	16	3	3 4 6
		4	17	4	
		0	18	0	
			19		
		3	20	3	

$$3|20 = 20,300 - 20,399 \quad 20/3 = 20,250 - 20,349$$

HISTOGRAM - displays how many pieces of data fall in each range.



To create a Histogram:

- 1) Type data in a spreadsheet
- 2) Add a Data & Statistics page.
- 3) Select the data to be graphed on the x-axis.
- 4) Select Menu--Plot Type--Histogram
- 5) Select Menu--Plot Properties--Histogram Properties--Bin Settings.  
Set the Bin Width AND the alignment.
- 6) Scale the x- and y-axis using Window Settings.

# MEASURES OF CENTRAL TENDENCY

- describe the "center" of the data

Mean - "average" =  $\frac{\text{Sum of data}}{\# \text{ items}} = \frac{\sum x}{n}$

$\swarrow$  sum  
 $\searrow$  data

sample                      population

$\bar{x}$

$\frac{8+12}{2} = 12.5$        $\mu$   
 $\uparrow$  mu

~~1~~ ~~2~~ ~~5~~ ~~8~~ **17** ~~29~~ ~~30~~ ~~56~~       $\bar{x} = \frac{147}{7} = 21$

Median = the middle value

Data set: 200 values

Data set: 75 values

$\frac{200}{2} = 100^{\text{th}} + 101^{\text{st}}$        $\frac{7}{2} = 3.5 \approx 4^{\text{th}}$

$\frac{75}{2} = 37.5 \approx 38^{\text{th}}$

Data must be in order

Mode - most frequent value

2 partners	\$100,000	=	200,000	<u>Mean</u> $\frac{989,000}{50} = 19,780$ <hr/> <u>Median</u>
23 earn	\$12,000	=	276,000	
9 earn	\$25,000	=	225,000	
16 earn	\$18,000	=	$\frac{288,000}{989,000}$	
<u>50</u>				

2	100,000
9	25,000
$25 \rightarrow 26$	18,000
$23 \rightarrow 23$	12,000

$$\text{Median} = \frac{50}{2} = 25^{\text{th}} + 26^{\text{th}}$$

$$= 18,000$$

$$\text{Mode} = \$12,000$$

### Calculating Statistics on the TI-Nspire

- 1) Enter data in a spreadsheet. Be sure to name the column.
- 2) Add a Data & Statistics page. Label the x-axis with the data to be graphed.
- 3) Select Menu--Statistics--Stat Calculations--1-Variable Stats  
Scroll down the list of stats to find the ones you need.

#### To find Mode:

- 1) On the spreadsheet page, click on the column you want to sort in order.
- 2) Arrow upward until the entire columns turns blue.
- 3) Select Menu--Actions--Sort
- 4) The data will be in numerical order. Search through the data to find the mode.