

**Section 17.1: Descriptive Statistics (Day 1)**

Essential Question: What are 3 measures of central tendency, also known as averages?

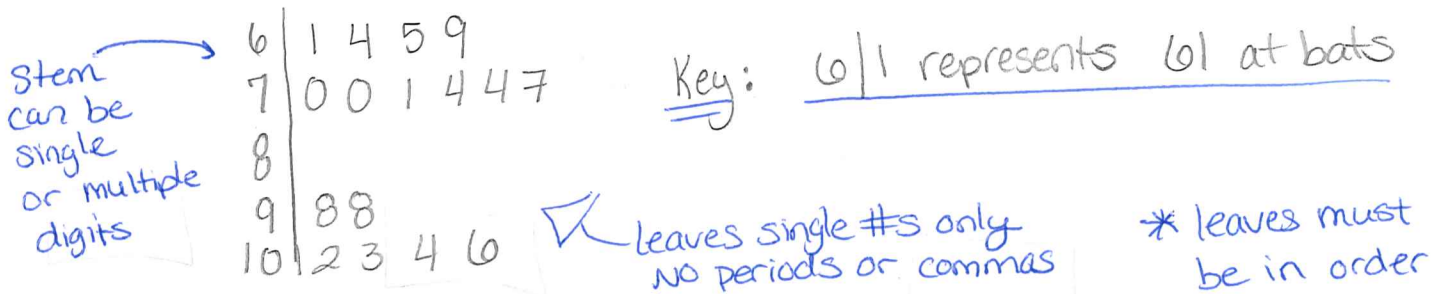
**Descriptive Statistics** Involves collecting, organizing and summarizing numerical facts (data) about some group

**Inferential Statistics** Involves making suggestions or decisions based on the data

**STEM-and-LEAF PLOT**

TEAM	Padres	Cubs	Brewers	Astros	Dodgers	Cardinals	Diamondbacks	Reds
At Bats (AB)	103	61	98	102	71	74	98	70
Team	Pirates	Phillies	Mets	Braves	Rockies	Nationals	Giants	Marlins
AB	69	74	65	64	104	70	106	77

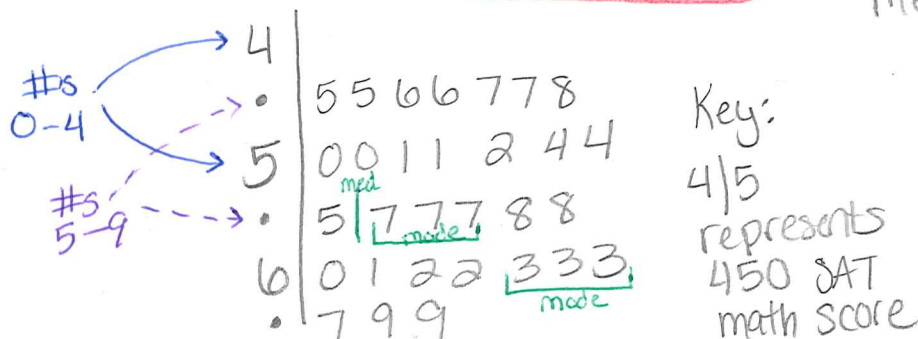
Ex 1: Summarize data in a stem-and-leaf plot.



**SAT mathematics scores for 30 seniors**

480	570	670	580	500	570	600	540	690	500
520	450	570	540	620	450	460	690	580	610
550	630	460	470	510	630	510	620	470	630

Ex 2: Summarize data in a stem-and-leaf plot.



Mean =  $\frac{16,670}{30} = 555.67$

Median =  $\frac{550 + 570}{2} = 560$

Mode = 570 & 630  
 (Bimodal)

## AVERAGES – MEASURES of CENTRAL TENDENCY

Mean of a set of data is the sum of the data divided by the number of items of data; denoted  $\bar{X}$  "X bar"

Median of a set of data is the middle number of the data in arranged order

$$\text{mean} = \frac{\text{sum}}{\text{\#items}}$$

Mode of a set of data is the item that occurs most often

If there are two modes Bimodal

If there are three modes Trimodal

If there are more than 3 Multimodal

Ex 3: Find the mean, median, and mode for the following set of data.

Minutes to read a History test

1	22
2	0 0 0 8
3	0 2 2 3 8 8 9
4	0 0 2 2 4 8
5	2 2 4 4 9

$$\text{Mean} = \frac{901}{25} = 36.04$$

$$\text{Median} = 38$$

$$\text{mode} = 20$$

1 | 2 represents 12 minutes

key

Ex 4:

a) Find the mean, median, and mode for the following set of data.

2	37	41	44	45	46
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$$\text{mean} = \frac{215}{6} = 35.83$$

$$\text{Median} = \frac{41+44}{2} = 42.5$$

$$\text{Mode} = \text{None}$$

b) Does the mean represent the data well? Explain.

NO, the mean does not fall within the interval where most data is.

c) Which measure of central tendency is the best for this set of data?

Median

### Section 17.1 Summary (day 1):

- ① Mean = the sum of all data  $\div$  # of items
  - ② Median = the middle value, once all data is in order
  - ③ Mode = most reoccurring data item  $\rightarrow$  2 modes = bimodal  
 $\rightarrow$  3 modes = trimodal  
 $\rightarrow$  4 or more = multimodal
- \* No mode if nothing repeats