

AGENDA
Warm-Up

Cornell Notes:
Measures of
Central Tendency
and Variability

Practice, Practice,
Practice

Warm Up # 25

Complete all 5 in your notebook.

1) $7 \frac{7}{8} \div 2 \frac{1}{4} =$

7.NS.3

2) Solve the equation.

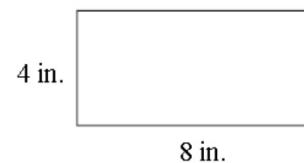
$$15x + 8 = 53$$

7.EE.4a

3) In a survey 60 out of 80 students were in favor of the new school logo design. If 1,200 students attend the school, how many would be expected to favor the new logo?

7.SP.2

4) Find the actual area of the rectangle shown in the scale drawing below. Use the scale 1 inch = 3 feet.



7.G.1

5) Rizzo's Pizza Parlor sold 127 individual slices of pizza on Tuesday and 159 slices on Wednesday. If each slice is $\frac{1}{8}$ of a pizza, how many pizzas did they sell from individual slices on these two days?

<p><u>Topic:</u> Measures of Data</p>	<p><u>Lesson Essential Question:</u> How can we use the properties of distributions to describe the variability in a given data set?</p>
<p>Measures of center</p>	<p>measures that describe a data set by identifying the "center" or middlemost value by a single number. (most common types are: mean, median, and mode)</p>
<p>Measures of variability</p>	<p>measures that describe how spread out or scattered the values are in a data set. (the most common types are: range, quartiles, and standard deviation)</p>
<p>distribution</p>	<p>describes the spread of data in a set or the shape of a data set when graphed</p>

<p>Topic: Measures of Central Tendency</p>	<p><u>Lesson Essential Question:</u> How can we use the properties of distributions to describe the variability in a given data set?</p>
<p>Range (variation)</p>	<p>the difference between the greatest value and the least value in a data set.</p>
<p>Median</p>	<p>the middle term, or the mean of two middle terms, in a data set that is numerically ordered.</p>
<p>Mean</p>	<p>the sum of the terms in a data set divided by the number of terms in the set. Notation: \bar{x}</p>
<p>Mean Absolute Deviation (MAD)</p>	<p>the average of the absolute deviations from the mean. Notation: $x - \bar{x}$</p>

FIND the MAD

**Calculate the MAD of this data set:
5, 8, 9, 11, 12**

1. Find the mean, \bar{x}

$$\bar{x} = \frac{5+8+9+11+12}{5} = \frac{45}{5} = 9$$

2. Use a table to find the absolute deviation of each data point from the mean.

Data Point, x	Deviation from Mean, $x - \bar{x}$	Absolute Deviation from Mean, $ x - \bar{x} $
5	$5 - 9 = -4$	$ -4 = 4$
8	$8 - 9 = -1$	$ -1 = 1$
9	$9 - 9 = 0$	$ 0 = 0$
11	$11 - 9 = 2$	$ 2 = 2$
12	$12 - 9 = 3$	$ 3 = 3$

3. Find the MAD

$$\text{MAD} = \frac{4+1+0+2+3}{5} = \frac{10}{5} = 2$$

**FIND the
MAD**

**Calculate the MAD of this data set:
6, 10, -5, 14, 10**

1. Find the mean, \bar{x}

2. Use a
table to find

3. Find $\frac{1+3+12+7+3}{5} = \frac{26}{5} = 5.2$

Example for Measures of variability

Temperature

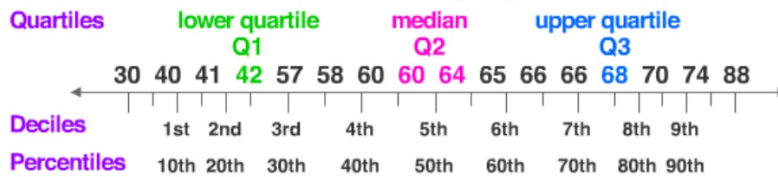
M	T	W	T	F	S	S
35°	30°	32°	29°	27°	37°	34°

Range = 37 - 27 = 10

quartiles, deciles, percentiles

These are three common measures used in statistics to divide an ordered data set into equal parts.

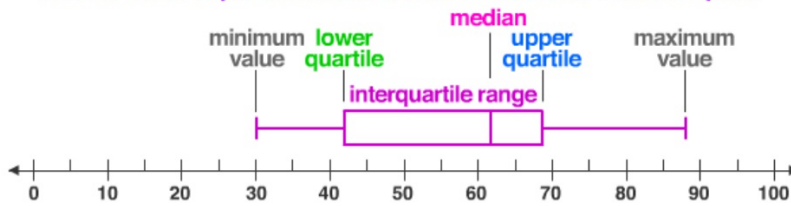
Quartiles = 4 equal parts, Deciles = 10 equal parts, Percentiles = 100 equal parts.



five number summary

The five number summary gives the minimum value, lower quartile, median, upper quartile, and the maximum value.

This is often represented in a box or box-and-whisker plot.



Create the five number summary for the temperatures listed on the previous page. They were:
35°, 30°, 32°, 29°, 27°, 37°, and 34°