



Math Virtual Learning

# Math 7/Pre-Algebra

Measures of Center

April 23, 2020



Grade 7/Measures of Center  
Lesson: April 23, 2020

**Objective/Learning Target:** Students will find and interpret measures of center (mean, median, and mode).

# Watch the first video!

W: Wordfast translation - (94996) Page 4/5 (2/2/2017)

7th Grade Math - Remote Learning Lesson 25:  
Mean

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Example

Mrs. Jordan has four children aged 5 years, 7 years, 10 years, and 10 years.  
Find the mean age of the four children.


Total age =  $5 + 7 + 10 + 10$   
 $= 32$  yr

Mean age =  $\frac{\text{total age}}{\text{total number of children}}$   
 $= \frac{32}{4}$   
 $= 8$  yr

The mean age of the four children is 8 years.

*Handwritten notes:* "Add then divide"

*Speech bubble:* "To find the mean age, you should divide the total age by the number of children."



ScreenShare - Green House Recorder is sharing your screen and audio. Stop sharing

Type here to search

10:04 AM 3/20/2017

# Watch the second video!

The screenshot shows a video player with a lesson on statistics. The main content is a worksheet titled "Median" with the word "middle" written in green. The worksheet contains the following text and calculations:

**Median** middle

The data set shows the weights of some cats in a shelter.  
14 lb, 9 lb, 12 lb, 8 lb, 11 lb, 7 lb, 10 lb

Order from least to greatest:  $7, 8, 9, 10, 11, 12, 14$

To find the median, arrange the numbers in ascending order to find the middle value.

The median weight of the cats is 10 pounds.

15, 3, 15, 14

Dot Plot

Number of Children in Family

$\frac{14+15}{2} = \frac{29}{2} = 14.5$

The video player interface includes a Windows taskbar at the bottom with the search bar, taskbar icons, and system tray showing the time as 2:07 PM on 3/13/2020. A small video inset in the bottom right corner shows two women in a classroom setting.

# Watch the third video!

7th Grade Math - Remote Learning Lesson 29: Mode

Example

Nicole recorded the lengths of twelve sticks that she found in a garden. The data set shows the lengths of the sticks that she recorded.

3 cm, 8 cm, 6 cm, 8 cm, 10 cm, 7 cm, 5 cm, 6 cm, 8 cm, 8 cm, 10 cm, 9 cm, 10 cm, 9 cm, 8 cm

Length (cm)	Number of Sticks
3	2
4	2
7	1
8	5
9	2
10	3

From the table, the length of most of the sticks is 8 centimeters. The mode of this data set is 8 centimeters.

Family Size

Number of Children in Family

# Warm-Up

The **RANGE** of a data set is the distance between the highest value and the lowest value.

Suggestion → Put your data in order first.

Highest value - Lowest Value = Range  
(how far the data spreads)



Highest value - Lowest Value = Range

$$45 - 2 = 43$$

Find the range for each set of numbers.

1) 36, 17, 22, 43, 11, 56, 17, 71

Range : \_\_\_\_\_

2) 84, 75, 9, 28, 57, 64, 42

Range : \_\_\_\_\_

3) 83, 78, 99, 56, 48, 74, 68, 55, 85

Range : \_\_\_\_\_

# Warm-Up - Answer Key

Find the range for each set of numbers.

1) 36, 17, 22, 43, 11, 56, 17, 71

Range : 60

11, 17, 17, 22, 36, 43, 56, 71

$$71 - 11 = 60$$

2) 84, 75, 9, 28, 57, 64, 42

Range : 75

9, 28, 42, 57, 64, 75, 84

$$84 - 9 = 75$$

3) 83, 78, 99, 56, 48, 74, 68, 55, 85

Range : 51

48, 55, 56, 68, 74, 78, 83, 85, 99

$$99 - 48 = 51$$

# Guided Practice

## Examples

Measures of Center are values that attempt to describe a set of data.

There are different values to use for different purposes.

The most commonly used are Mean, Median, Mode, and Range.

**MEDIAN** is the **MIDDLE**

- Put your data in order.
- Work from the outside toward the middle to find the exact middle of the data.
- If there are two values in the middle, average those two by adding them together and dividing by 2.

**MODE** is the **MOST OFTEN**

- Put your data in order.
- Find the value that happens the most often.
- It is OK to have more than one mode.
- If there is no mode, just say "No Mode".

**MEAN** means **AVERAGE**

(add, then divide)

- Add your data together.
- Divide by the number of data pieces you have.

Data Set: Median: ~~1, 2, 3, 6, 8~~

1, 6, 3, 8, 2

**3**

Mode: 1, 2, 3, 6, 8

**No Mode**

Mean:  $\frac{1 + 2 + 3 + 6 + 8}{5} = \frac{20}{5} = \mathbf{4}$

Data Set: Median: ~~3, 5, 8, 8~~

5, 8, 3, 8

$\frac{5 + 8}{2} = \frac{13}{2} = \mathbf{6.5}$

Mode: 3, 5, ~~8, 8~~

**8**

Mean:  $\frac{3 + 5 + 8 + 8}{4} = \frac{24}{4} = \mathbf{6}$



## Guided Practice:

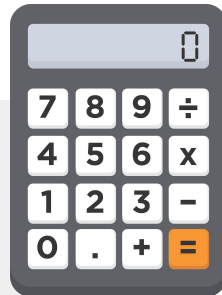
For each set of numbers, find the mean, median, and mode.

1. 16 , 14 , 14 , 13

mean=      median=      mode=

2. 2 , 19 , 4 , 1 , 4

mean=      median=      mode=



You may  
want a  
calculator!

## Guided Practice Answers

1. 16 , 13 , 14 , 13      13, 13, 14, 16

**mean:**  $56 \div 4 = 14$     **median:**  $27 \div 2 = 13.5$     **mode:** 13

2. 2 , 19 , 4 , 1 , 4      1, 2, 4, 4, 19

**mean:**  $30 \div 5 = 6$     **median:** 4    **mode:** 4

## Additional Practice

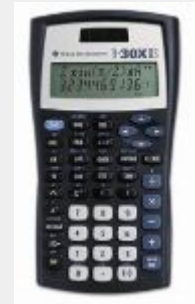
# Practicing Mean, Median, & Mode

Click on the link.

Answer the 7 questions.

If you get stuck, watch the video provided OR use the hint provided.

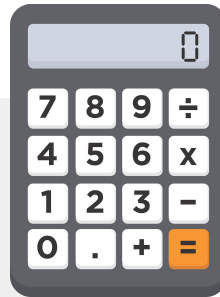
You may need to use paper, pencil, and a calculator.



## Practice:

Answer the questions on a piece of paper.

You may  
want a  
calculator!



1. Find the mean, median, and mode for each set of numbers:
  - a. 3 , 6 , 10 , 5 , 16 , 3 , 6
  - b. 9 , 12 , 20 , 16 , 7 , 20
  - c. 18 , 11 , 10 , 8 , 9 , 5 , 9 , 10
2. At Oliver's Pizza Palace, in the 6 hours they were open, they sold the following number of pizzas: 55 pepperoni, 57 sausage, 50 cheese, 51 mushroom, 61 anchovies and 50 pineapple. Determine the mean (rounded to the nearest tenth), median, and mode of the number of pizzas sold.

# Practice Answers

1. Find the mean, median, and mode for each set of numbers:

a. 3, 6, 10, 5, 16, 3, 6      **3, 3, 5, 6, 6, 10, 16**

**mean:**  $49 \div 7 = 7$     **median:** 6    **mode:** 3 and 6

b. 9, 12, 20, 16, 7, 20      **7, 9, 12, 16, 20, 20**

**mean:**  $84 \div 6 = 14$     **median:** 14    **mode:** 20

c. 18, 11, 10, 8, 9, 5, 9, 10      **5, 8, 9, 9, 10, 10, 11, 18**

**mean:**  $80 \div 8 = 10$     **median:** 9.5    **mode:** 9 and 10

2. At Oliver's Pizza Palace, in the 6 hours they were open, they sold the following number of pizzas: 55 pepperoni, 57 sausage, 50 cheese, 51 mushroom, 61 anchovies and 50 pineapple. Determine the mean (rounded to the nearest tenth), median, and mode of the number of pizzas sold.

**50, 50, 51, 55, 57, 61**    **mean:**  $324 \div 6 = 54$     **median:** 53    **mode:** 50

# Additional Links

## Dunk Tank

Click on the link.

Click “Launch”.

If your Adobe Flash player is blocked, see the next slide.



The screenshot shows a game interface with a man in a red shirt and yellow tie on the left. On the right, there are statistics and a 'Launch' button. The statistics include:

- mean = 13
- mode = 8
- range = 32

The 'Launch' button is highlighted with a yellow arrow. Below the statistics are two tables of data:

Line #	# takes	Line #	# takes
Line 12	3	Line 10	10
Line 5	4	Line 7	14
	5	Line 13	14
	6	Line 3	17
Line 4	8	Line 8	18
Line 11	8	Line 1	32
Line 14	8	Line 2	35

## Other Measure of Center Game Link

[Bouncing Balls - Mean, Median, Mode](#)

# Additional Links

## How to “Allow” Adobe Flash

### Dunk Tank

- ❑ Click the link above
- ❑ If needed, fix the “Adobe Flash Player” using the directions below.

To fix the “Adobe Flash Player,” click on the



or the

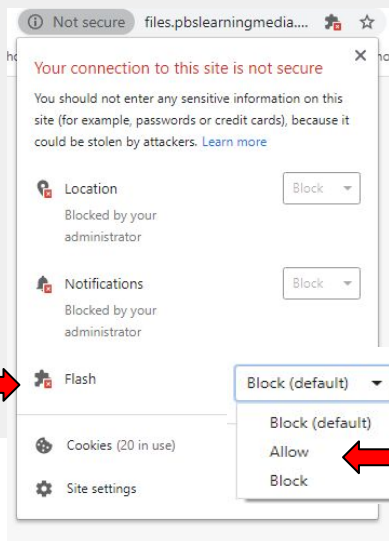


Adobe Flash Player is blocked

Not secure | files.pbslearningmedia...

to the left of the web address bar. Scroll down to “Flash”

Click on “Flash”.



Click on drop down arrow by “Block default”.  
Click on “Allow”.

You may need to refresh your screen.




# Challenge

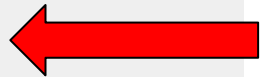
Laurie runs laps around the track each day to get in shape for tennis season. So far, she has run 4 laps, 7 laps, and 11 laps. How many laps will she need to run if she would like her average to be 7 laps a day?

HINT:  $\frac{4 + 7 + 11 + ?}{4} = 7$


Hint #1: Insert the data points you KNOW. Use a variable for the unknown or missing value.


$$\frac{\square + \square + \square + \square}{\square} = \square$$


Hint #3: Insert what you want or need the average to be in the answer box.



Hint #2: Insert the number for *how many* data points there are as the denominator.



Hint #4: Now set up an equation and solve for  $x$ .

$$\frac{4 + 11 + 7 + x}{4} = 7$$


$$22 + x = 28$$

4

$$22 + x = 28$$

$$x = 6$$



## Challenge #2

The following table shows the number of innings pitched by each of the Greenbury Goblins' starting pitchers during the Rockbottom Tournament.

Pitcher	Calvin	Thom	Shawn	Kris	Brantley
Number of innings pitched	11	12	7	3	?

If the mean of the data set is 8 innings, find the number of innings Brantley pitched.

$$\frac{\square + \square + \square + \square + \square}{\square} = \square$$

**Challenge #3 -  
On your own**

To make the school's golf team, Cliff has to have an average score of 79.

What does he need to score on his next round of golf to meet the team requirement if he has already scored 75, 86, and 79?



Do you think he will make the team?

## Challenge Answers for #2 & #3

### Challenge #2 Answer

$$\frac{\boxed{11} + \boxed{12} + \boxed{7} + \boxed{3} + \boxed{x}}{\boxed{5}} = \boxed{8}$$

$$\begin{aligned} \frac{11+12+7+3+x}{5} &= 8 \\ 33+x &= 40 \\ x &= 7 \end{aligned}$$

### Challenge #3 Answer

$$\frac{75 + 86 + 79 + x}{4} = 79$$

$$\begin{aligned} \frac{240 + x}{4} &= 79 \\ 240 + x &= 316 \\ x &= 76 \end{aligned}$$