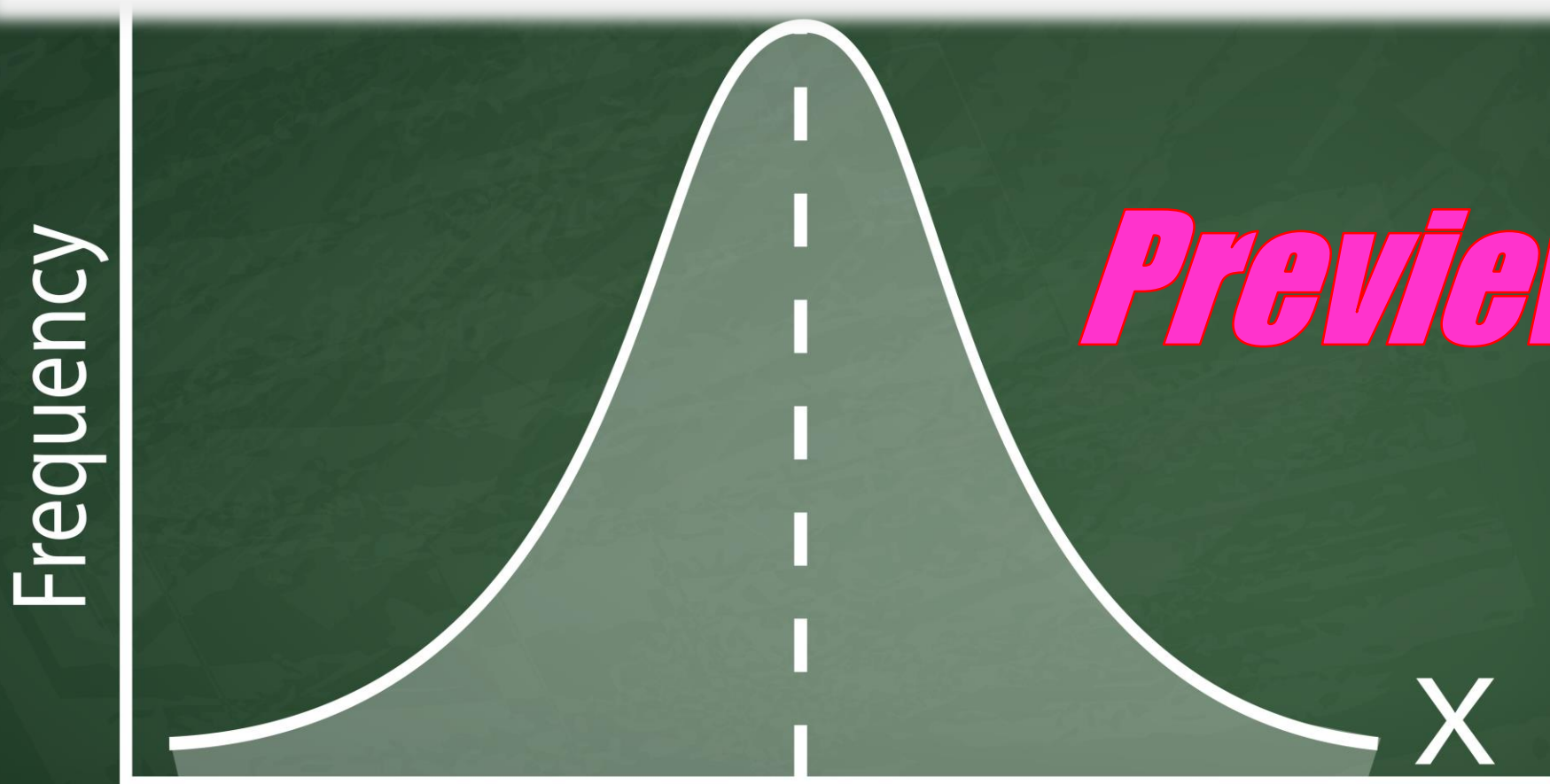


Central Tendency: Mean, Median & Mode



Mean, Median, & Mode

Lesson Plan

Preparation

- Print out a vocabulary board for each student to use throughout unit
 - Laminate or place in page protector
- Book
 - Print out, laminate, and bind
 - OR your students can listen to the pre-recorded version
- Vocabulary cards
 - Print out a set of cards onto cardstock and laminate
 - Make one set for each student and also one for the teacher to use in I Spy games

Preassessment (do day 1 before starting lesson)

- Choose the form of the assessment that best fits the learning level of your students
- Give the assessment to assess what your students may already know
- I cannot emphasize enough how important this step is. If you want to see growth, this preassessment is so important!!

Teaching Tips

1. **Color Coding:** this is a really easy way to add more structure to a matching activity. Outline or color in an empty box or sorting label. Outline or color in the corresponding picture symbols the same colors. Becomes a color matching task.
 - a. For more info, read more here: <https://specialneedsforspecialkids.org/2015/09/05/using-color-coding-for-differentiation/>
 - b. I also have a blog post on differentiating one activity 3 ways: <https://specialneedsforspecialkids.org/2018/10/22/differentiating-1-activity-3-ways-easily-and-effectively/>
2. **Make your own copies of the activities:** Every day I review the activity we did yesterday. For that reason:
 - a. I often complete the activity myself and often laminated it for easy review that I could use year after year.
 - b. My copies were also helpful as either a model for students who needed more support or as a way for more advanced students to self-check their

Lesson Plans

14 days

Quick Look

Day	Activity	Day	Activity
1-2	<ul style="list-style-type: none"> • Book • Vocabulary activity • Id median in data sets 	OPT 1	<ul style="list-style-type: none"> • Book • Vocabulary activity • Calculate mean set 1
3-4	<ul style="list-style-type: none"> • Book • Vocabulary activity • Id mode in data sets 	OPT 1	<ul style="list-style-type: none"> • Book • Vocabulary activity • Calculate mean set 2
5-6	<ul style="list-style-type: none"> • Book • Vocabulary activity • Id median in survey results 	12	<ul style="list-style-type: none"> • Book • Vocabulary cut and paste • Sudoku puzzle
7-8	<ul style="list-style-type: none"> • Book • Vocabulary activity • Id mode in survey results 	13	<ul style="list-style-type: none"> • Book • Vocabulary cut and paste • Close worksheets
9	<ul style="list-style-type: none"> • Book • Vocabulary activity • Id graphs with normal distribution 	14	<ul style="list-style-type: none"> • Assessment
10-11	<ul style="list-style-type: none"> • Book • Vocabulary activity • Id mean, median and mode in a graph with normal distribution 		

Days 3-4

Activity	Notes	Materials
Read or listen to a recording of the book (10 minutes)	<ul style="list-style-type: none"> • Read through the story, asking lots of questions • Continue to make connections between book and vocabulary board 	<ul style="list-style-type: none"> • Book • Vocabulary board
Vocabulary cards I Spy Game (10 minutes)	<ul style="list-style-type: none"> • I play this game, or variations of it the first few days <ul style="list-style-type: none"> ◦ Determine how many cards your students can handle in front of them. This can vary, some students may be able to have all the cards, so may only be able to handle a field of 3-5 • Since this is the first time playing this game, I make it easy. Hold up a card, and have students find the matching one and hold it up • Discuss relevant points on the card <ul style="list-style-type: none"> ◦ You can also play this game in this manner having them find the symbol on their vocabulary board 	<ul style="list-style-type: none"> • Vocabulary cards (student set and teacher set) • Vocabulary board
Worksheet review (5 minutes)	<ul style="list-style-type: none"> • Review the worksheet completed yesterday 	<ul style="list-style-type: none"> • worksheet from previous day
Identify the mode in a data set (10 minutes)	<ul style="list-style-type: none"> • Do 1-2 of the worksheets where students identify the mode in a set of pictures or numbers. • You can also use manipulatives if needed. 	<ul style="list-style-type: none"> • Worksheet
Sharing (10 minutes)	<ul style="list-style-type: none"> • Each student shares one of their finished worksheets with the group using the communication method of their choice 	<ul style="list-style-type: none"> • Completed worksheets • Communication devices

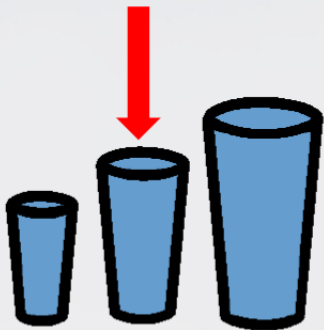
This is called the **central tendency**, and it is one number that tries to describe the entire set of numbers.



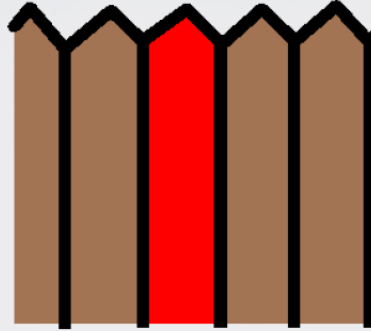
30 +

40 page book

The most common way to measure the central tendency of a group of numbers is to find the **mean**.



There are other ways we can find the central tendency of a group of numbers. Another way is to find the **median**.



The **median** can also give you a good idea of the most likely value in a group of numbers. Can you find the median in this group of buckets of strawberries?











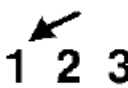



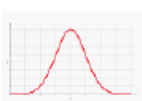







20 140 160 180

The other value we can consider when looking at central tendency is the **mode**. The **mode** is the number that shows up the most often in the set.



When a set of graphed data has this shape, it is said to have a **normal distribution**, often called a **bell curve**.




 statistics	 mean	 median	 mode	 central tendency
 put in order	 how many	 guess	 first step	 middle
 add	 most	 normal distribution	 survey	 none
 repeat that	 yes	 no	 I don't know	 I need a break

Vocabulary board

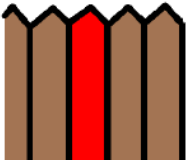
8 vocab cards

Cut & Paste

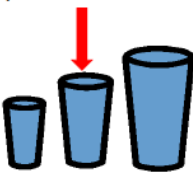
central tendency
One number that tries to describe the entire set of numbers.




median
The middle number.





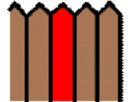

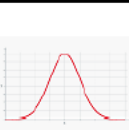


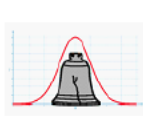
mean
Average. Sum of all the numbers divided by the total number of values.

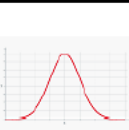
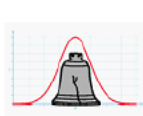



mode
Most common number in a the set.



140

<p>normal distribution</p> <p>Graph where data is clustered in the middle and then decreases on either side evenly.</p> 	<p>bell curve</p> <p>Normal distribution.</p> 
<p>statistics</p> <p>Collecting and analyzing data looking for common characteristics.</p> 	<p>statistics</p> <p>Collecting and analyzing data looking for common characteristics.</p>

Identify median & mode

Circle the median.



Circle the median.



- 2, 6, 8, 12, 15, 22, 20
- 4, 9, 10, 11, 13, 16, 20
- 11, 15, 19, 25, 26, 35, 47
- 1, 2, 3, 4, 5, 6, 7
- 81, 82, 83, 91, 92, 93, 99

1. Put the numbers in order.
2. Circle the median.
3. Write the median.



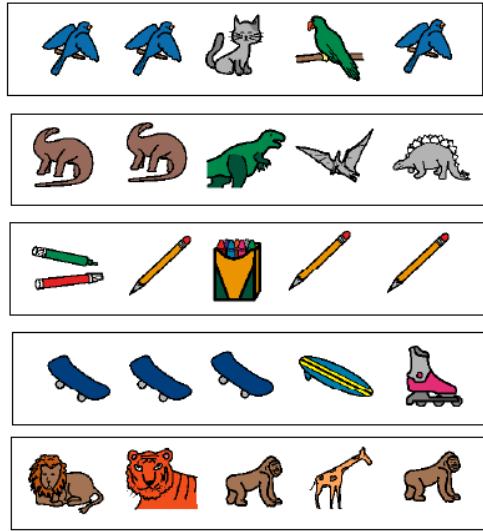
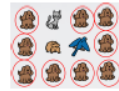
- 8, 3, 9, 2, 5
- 20, 5, 18, 6, 17
- 1, 9, 4, 12, 2
- 9, 5, 2, 7, 4
- 10, 7, 3, 8, 2

Circle and write the mode.



- 1, 1, 1, 9, 12
- 8, 11, 16, 16, 24
- 3, 4, 6, 6, 6
- 20, 21, 28, 28, 31
- 16, 19, 21, 38, 38

Circle the mode.



In data sets & surveys

Look at the survey results below. Identify the median.

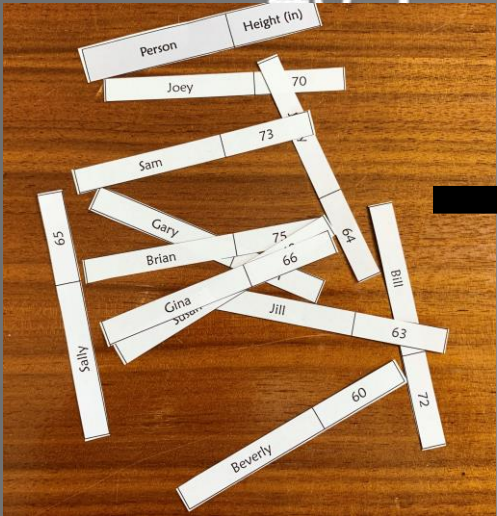
Person	# hotdogs eaten
Sally	3
Bill	6
Joey	2
	1
	5

Glue the survey results below. Identify the median.

Person	# hotdogs eaten

Median =

Examples



Person Height (in)

Beverly	60
Susan	62
Jill	63
Jenny	64
Sally	65
Gina	66
Joey	70
Gary	71
Bill	72
Sam	73
Brian	75

Glue the survey results below. Identify the median.

Person	Height (in)
Beverly	60
Susan	62
Jill	63
Jenny	64
Sally	65
Gina	66
Joey	70
Gary	71
Bill	72
Sam	73
Brian	75

Median = 66

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Look at the survey results below. Identify the mode.

Person	test score
Barry	100
Brian	70
Steve	80
Dave	90
Jenny	90
Jackie	100
Sam	90
Chrissy	90
Joe	70

mode = 90

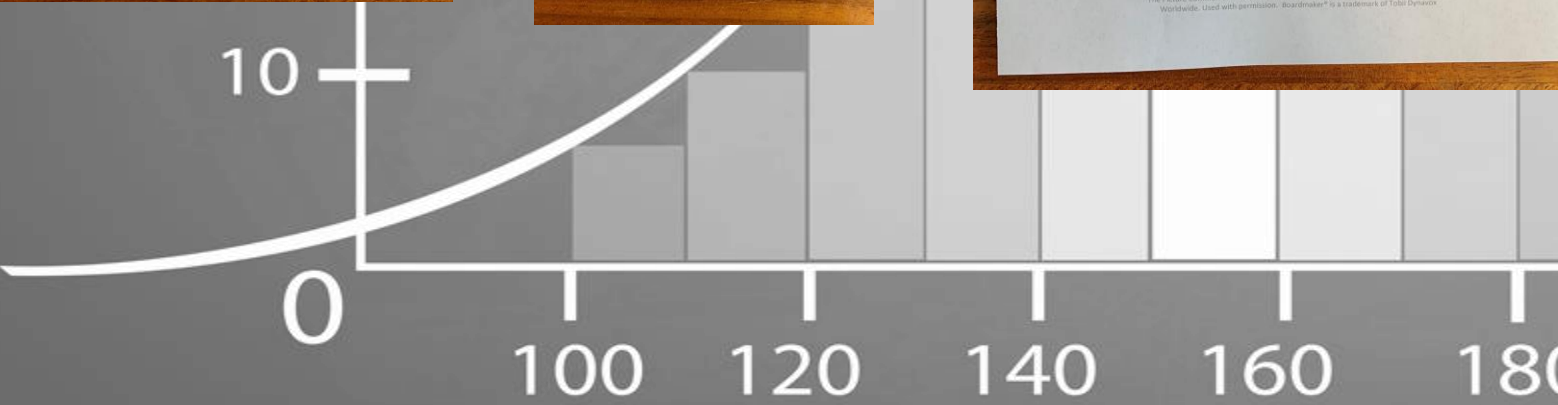
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Look at the survey results below. Identify the mode.

Person	# pets
Sally	2
Bill	0
Joey	2
Brian	1
Gary	3

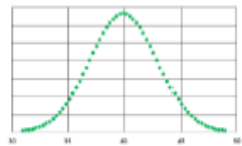
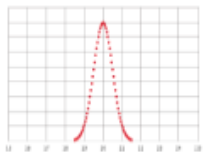
mode = 2

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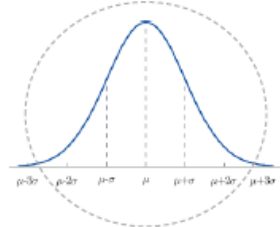
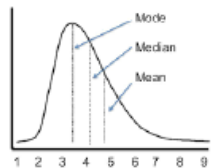
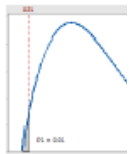
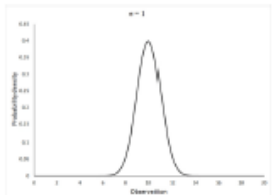
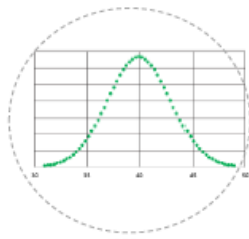
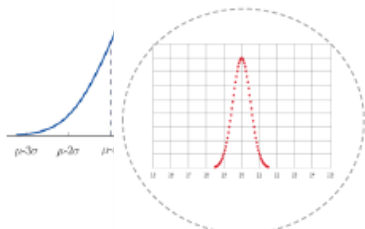
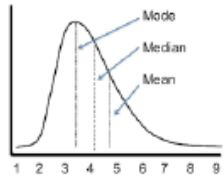


Id graphs with normal distribution

Circle the examples of graphs that have a normal distribution.

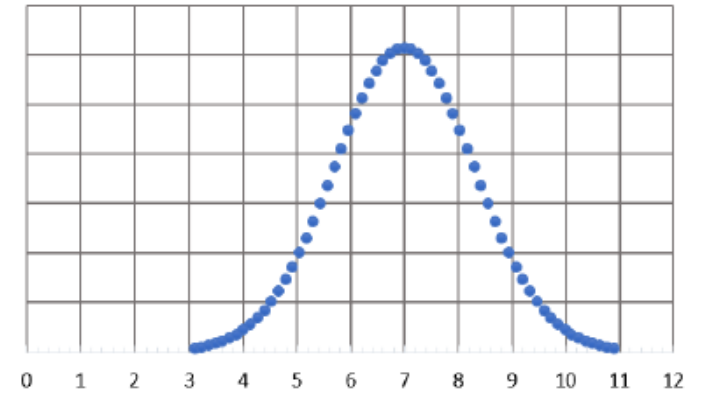


Circle the examples of graphs that have a normal distribution.



differentiated

Identify the mean, median, and mode in this normal distribution graph.

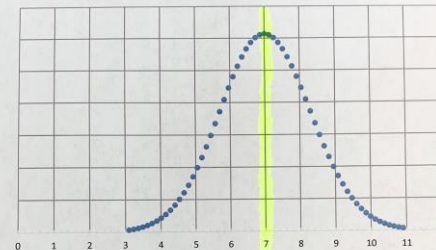


Mean=

Median=

Mode=

Identify the mean, median, and mode in this normal distribution graph.



Mean= 7

Median= 7

Mode= 7

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Calculating the mean

Calculating **Mean** of this data set.

1, 3, 7, 10, 11

1. First, add all of the numbers together using a calculator.
2. Check you answer. Did you get 32?
 - YES → go onto step 3
 - NO → try again
3. Count the number of values.
4. Check you answer. Did you get 5?
 - YES → go onto step 5
 - NO → try again
5. Plug in the values to find the mean.

$$\boxed{} \div \boxed{} = \boxed{} \text{ mean}$$

Calculating **Mean** of this survey set.

Person	# pets
Sally	2
Bill	0
Joey	2
Brian	1
Gary	5

1. First, add all of the numbers together using a calculator.
2. Check you answer. Did you get 10?
3. Count the number of values.
4. Check you answer. Did you get 5?
5. Plug in the values to find the mean.

$$\boxed{} \div \boxed{} = \boxed{} \text{ mean}$$

Calculating **Mean** of this survey set.

Person	# fireflies caught
Sally	12
Bill	16
Joey	16
Brian	17
Gary	18

1. First, add all of the numbers together using a calculator.
2. Count the number of values.
3. Plug in the values to find the mean.

$$\boxed{} \div \boxed{} = \boxed{} \text{ mean}$$

4. Median = Mode =

Calculating **Mean** of this data set

9, 12, 15, 18, 1

1. First, add all of the numbers together using a calculator.
2. Count the number of values.
3. Plug in the values to find the mean.

$$\boxed{} \div \boxed{} = \boxed{} \text{ mean}$$

















4. Median =
5. Mode =



















Set 1 has self-checking and color coding

Set 2 has color coding only





































Sudoku Puzzles

Mean, Median, Mode



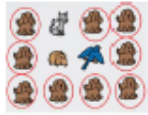






 statistics	 bell curve			 median
 central tendency		 mean		 bell curve
	 mean		 bell curve	 statistics
		 statistics	 mode	 mean
 mean	 mode		 median	
 median				








 central tendency	 central tendency	 central tendency	 central tendency	 mean	 mean
 median	 median	 median	 mode	 mode	 mode
 mode	 bell curve	 bell curve	 statistics	 statistics	 statistics

Answer Key

 statistics	 bell curve	 mode	 central tendency	 median	 mean
 central tendency	 median	 mean	 statistics	 bell curve	 mode
 mode	 mean	 median	 bell curve	 statistics	 central tendency
 bell curve	 central tendency	 statistics	 mode	 mean	 median
 mean	 mode	 bell curve	 median	 central tendency	 statistics
 median	 statistics	 central tendency	 mean	 mode	 bell curve

Mean, Median, and Mode

 central tendency	 median	 mode	
		 median	 central tendency
 mean			 median
	 central tendency	 mean	

 central tendency	 mean	 mean	 median
 mode	 mode	 mode	

160

180

2

Close worksheets

50

Mean, Median, and Mode

- The average of a set of numbers is called the .
- When the numbers are in order, the middle number is the .
- The mode is the .
- The central tendency is number that describes the set.
- In a graph with , the values are clustered at the middle of the graph.

Mean, Median, Mode (page 1)



100

120

140

160

180

Version 1

- The mean, median and mode all help to determine the:



- The median is the:



- The mode is the:



- You find the mean by adding all the numbers and dividing by what:



- When you have a graph with a normal distribution mean, median, and mode are all what?



- What is the median of this set? 4,6,8,9,10

- 8
- 3
- 9

- What is the mode of this set? 3,6,6,9,12,15

- 12
- 6
- 15

- On a normal distribution graph, the mean is the _____ point.

- highest
- shortest
- fattest

- True or False. You can find the mean, median, and mode from a survey as well as a graph.

- true
- false
- I don't know

Assessments