Mathematics

7.11 The student understands that the way a set of data is displayed influences its interpretation. The student is expected to:

(A) select and use an appropriate representation for presenting and displaying relationships among collected data including line plot, line graph, bar graph, stem and leaf plot, circle graph, and Venn diagrams, and justify the selection.

(B) make inferences and convincing arguments based on analysis of given or collected data.

7.12 The student uses measures of central tendency and range to describe a set of data. The student is expected to:

(A) describe a set of data using mean, median, mode and range.

(B) choose among mean, median, mode or range to describe a set of data and justify the choice for a particular situation.

Materials

For whole class demonstration:

- **Transparency: Fumble Bumbles**

For each student:

- TI-73 calculator
- **Football Statistics** activity sheet
- **How Do These Shapes Measure Up?** activity sheet
- **Data Mix-Up** performance assessment

ENGAGE

The Engage portion of the lesson is designed to create student interest in the concepts addressed. Technology is not used in this phase since the focus of this activity is to remind students of the measures of central tendency. This part of the lesson is designed for groups of 2 students or individual investigation.

1. Display **Transparency 1: Fumble Bumbles** so that it is visible to all students.
2. Students should read the problem and solve for the mean, median, and mode. Provide math vocabulary glossaries or dictionaries for students who may need to refresh their memories on these terms.
3. Debrief the activity using the Facilitation Questions.

Facilitation Questions

- How did you determine the mean for this set of data?
  Answers may vary. Lead students in the development/review of the vocabulary word by using a graphic organizer, such as a vocabulary model, or creating a word wall for Probability and Statistics. Some students may know the algorithm for finding the mean. Other students may make a picture to find the mean, as addressed in the 6th grade TEKS. The mean is 1.375 or 1.4 fumbles.

Vocabulary Model Example

(Word)	***(Definition)***
Mean	*The sum of the numbers in a set of data divided by the number of pieces of data.*
(Examples) *Average of 3, 5, 4, 8* $3+5+4+8=20$ $20\div 4=5$	***(Non-Examples)*** *Median* *Mode*

- How did you find the median for this set of data?
  Answers may vary. Lead students in the development/review of the vocabulary word by using a graphic organizer or creating a word wall for Probability and Statistics. The median is 1.5 fumbles.
- How did you find the mode for this set of data?
  Answers may vary. Lead students in the development/review of the vocabulary word by using a graphic organizer or creating a word wall for Probability and Statistics. The mode is 2 fumbles.
- Which measure of data would the Texans prefer the media to report?
  Answers may vary. The Texans would probably prefer the mean to be reported since it is the lowest of the three.

EXPLORE

The Explore portion of the lesson provides the student with an opportunity to be actively involved in the exploration of the mathematical concepts addressed. This part of the lesson is designed for groups of 2 students or individual investigation.

1. Distribute **Football Statistics** activity sheet to each student and a TI-73 calculator.
2. When monitoring students thinking, use the facilitation questions.

Facilitation Questions

- What do you know about the problem?
  Possible answer: For the first 10 games, the mean is 31, the median is 24 and the mode is 52.
- What do you need to know to find a solution for the problem?
  Possible answer: I need to find the data set for the 7 games.
- Where is the information located in the calculator that you need?
  The information is in List 1 under the LIST feature of the calculator.
- What should you do if the mean is higher than the targeted mean?
  The values in the data set need to be decreased if the mean is too high.
- What should you do if the mean is lower than the targeted mean?
  The values in the data set need to be increased if the mean is too low.
- How did you make your prediction? Did any information help you make your prediction?
  Answers may vary. The mode gave them a clue to include both of the 52 yard amounts in the first 7 games.
- What strategies did you use for choosing the numbers to put in for the 7 games?
  Answers may vary.
- Which measure of central tendency is the easiest to determine first?
  The mode is the easiest one to recognize in a set of data because one only looks at frequencies.

EXPLAIN

The Explain portion of the lesson is directed by the teacher to allow the students to formalize their understanding of the TEKS addressed in the lesson.

1. Debrief the **Football Statistics** activity using the facilitation questions.

Facilitation Questions

- How did the calculator allow you to manipulate data?
  By using the LIST feature and allowing the calculator to find each measure of central tendency, any yardage can be changed in the list and each measure of central tendency recalculated easily.
- How did the calculator assist you in interpreting data?
  Answers may vary. Some students may say that the calculator helped them to focus on the concept of mean, median, and mode since they did not have to think about the math operations involved.
- With a mean of 31, what can you conclude about the data set?
  The numbers will cluster in the middle or the numbers will vary. If the numbers vary, they must include high and low numbers to average out.
- How did the median of 24 help narrow your choices?
  Answers may vary, but lead students to put the numbers in numerical order. Discuss observations.
- If the yards from the other 3 games were included in the data set, how would you predict the mean would change? The median? The mode?
  Answers may vary. After students make predictions, point out that the 3 remaining numbers cluster within the same range, so the mean may not change much. The median should be higher since the 3 numbers would come in the middle of the existing data. The mode isn't affected.
- Were you surprised by the results? Why?
  Answers may vary. Students should explain their reasoning for being surprised.
- Were there times when the technology made the task easier? Why?
  Answers may vary. Some students may say that not having to calculate the math with paper/pencil made the task easier.
- Are there times when the technology made the task more difficult? Why?
  Answers may vary. Students may say that manipulating back and forth between the lists and calculations made the task more difficult.

ELABORATE

The Elaborate portion of the lesson provides an opportunity for the student to apply the concepts of the TEKS within a new situation. This part of the lesson is designed for groups of 2 students or individual investigation.

1. Distribute **How Do These Shapes Measure Up?** activity sheet and TI-73 calculator to each student.
2. Tell students that in the first phases of this lesson we looked at numerical data generated from football statistics, but in this phase we will be looking at numerical data generated by measuring the dimensions of figures.

3. Students should work to complete the worksheet.
4. Debrief using the facilitation questions.

Facilitation Questions

- Which set of data did you predict to have the same mean, median and mode?
  Answers may vary. Some students may notice that Set C appears to be the same height, so the mean, median and mode might be the same.
- Which set of data did you predict to have the greatest mean?
  Answers may vary. Some students may realize that the taller objects will most likely create a greater mean.
- Which set of data did you predict to have the smallest mean?
  Answers may vary. Some students may realize that the shorter objects will most likely create a smaller mean.
- How does the calculator assist you in analyzing data?
  Answers may vary. Some students may say that the ability to make a graph quickly helps you visually analyze similarities and differences.
- How does the calculator assist you in communicating your results?
  Answers may vary. Some students may say that the calculator helps them organize the data into a table and display the information graphically.
- What formula did you use to find the mean?
  MEAN(L_1)
- What formula did you use to find the median?
  MEDIAN(L_1)
- What formula did you use to find the mode?
  MODE(L_1)
- Which set of figures has the same mean, median and mode?
  Set C
- Which set has no mode?
  Set B
- Which set has the same median and mode?
  Set A and C
- Which data set has the greatest mean?
  Set C
- Which data set has the smallest mean?
  Set B
- How can looking at the figures in Set A help you determine the central tendencies?
  Answers may vary. Visually examine the figures and use reasonableness to draw conclusions. For example, two of the figures in Set A appear to have the same height so the mode will be equal to the height of Figure 1 and 2 and so will the median since one of these heights will be the middle number. The mean will be slightly more because figure 3 will raise the average.

Facilitation Questions

- How can looking at the figures in Set B help you determine the central tendencies?
  Answers may vary. Visually examine the figures and use reasonableness to draw conclusions. For example, all of the heights in Set B are different, so that set won't have a mode. The median will be the height of Figure 5. The mean may be close to the median since the figures on either side of Figure 5 will balance out the average.
- How can looking at the figures in Set C help you determine the central tendencies?
  Answers may vary. Visually examine the figures and use reasonableness to draw conclusions. For example, all of the figures in Set C appear to be the same height, so they will have the same mean, median and mode.
- How would combining the data sets affect the mean? The median? The mode?
  mean – Answers may vary. One possible answer is that the mean will be 1.25 or maybe slightly lower since the heights in the other groups are slightly higher and lower than 1.25
  median – Answers may vary. One possible answer is the median will be similar to Set C since figures 6-9 seem to have the same height and would fall in the middle of the data.
  mode – Answers may vary. The students will most likely say 1.25 since no other height occurs more than the height of the figures in Set C.
- How different did you think the data sets would be for the lengths/diameters?
  Answers may vary. Students should reason about the differences in the data sets by looking at the sides.
- How did the mean, median and mode of the lengths/diameters compare to that of the heights?
  Answers may vary. None of the sets has a mode. Set B has the highest mean. The median for Set A and Set C are the same for both.
- How do the bar graphs help you to interpret the data?
  Answers may vary. Students should recognize that the graph provides a visual representation, but caution them about misleading statistics.
- Why do you think we are using a bar graph instead of a circle graph?
  Answers may vary. Circle graphs are typically used with data represented as percentages.

EVALUATE

The Evaluate portion of the lesson provides the student with an opportunity to demonstrate his or her understanding of the TEKS addressed in the lesson.

1. Distribute **Data Mix-Up** activity sheet to each student.
2. Upon completion of **Data Mix-Up** activity sheet, the teacher should use a rubric to assess student understanding of the concepts addressed in this lesson.

Answers and Error Analysis for selected response questions:

Question Number	TEKS	Correct Answer	Conceptual Error	Conceptual Error	Procedural Error	Procedural Error	Guess
1	7.12B	B	A	C			D
2	7.12A	B	C	D	A		
3	7.12B	C	A	B			D
4	7.11B	C	A	B			D

Football Statistics *(Possible Answers)*

In 2004 Cory Bradford was a receiver for the Texans. He received the ball in 12 out of the 16 games played by the team. The total yards received during each of the first 10 games is shown below, but the yards are not listed in a particular order.

24 9 52 32 5 52 27 13 65 38

If Cory Bradford's mean, median and mode for receptions during the first 7 games were 31, 24, and 52 (when rounded to the nearest whole number), which of the above yardages represent his stats?

1. Make a prediction for the yards received in the first 7 games. Justify your reasoning.

   Answers will vary. Encourage students to use reasoning when making predictions.

2. Use the TI-73 calculator and the given information to help you find the yards received by Cory Bradford during the first 7 games. Follow the instructions below.

   a. Input the data using the **LIST** feature.

   Press [LIST].
   Input the 7 yards one by one into L_1.
   Press [2nd][MODE] to return to the home screen.

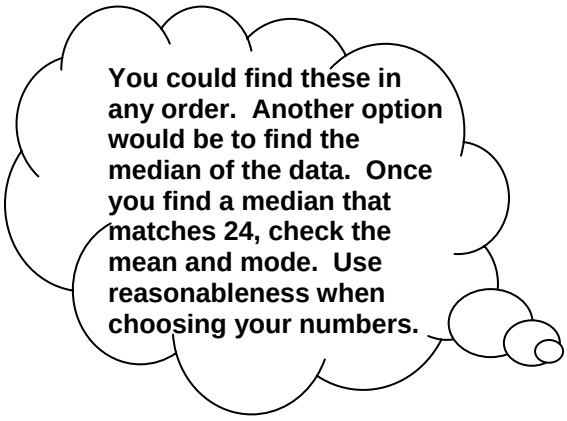
   b. Find the mean of the data using the **STAT** feature. Record your trials in the table on the next page.

   Press [2nd][LIST] to access the STAT menu.
   Press [▶] to arrow over to MATH.
   Press [▼] to arrow down to mean(
   Press [ENTER].
   Press [2nd][LIST] L_1 [ENTER].
   Press [ENTER].

Think strategically when choosing the 7 yards. If the 7 yards chosen doesn't yield 31, go back to the list and modify it. Find the mean again for the new list.

	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9
1									
2									
3									
4									
5									
6									
7									
mean									

c. Once you get 31 for the mean of a data set, check the median and mode.



To check the median:

Press 2nd LIST to access the STAT menu.
Press ▶ to arrow over to MATH.
Press ▼ to arrow down to median(
Press ENTER.
Press 2nd LIST L_1 ENTER.
Press ENTER.

To check the mode:

Press 2nd LIST to access the STAT menu.
Press ▶ to arrow over to MATH.
Press ▼ to arrow down to mode(
Press ENTER.
Press 2nd LIST L_1 ENTER.
Press ENTER.

d. Record the yards for the first 7 games below.

5, 9, 13, 24, 52, 52, 65

e. How many trials did it take before finding the yards for the 7 games?
Answers will vary. If more columns are needed for recording trials, have students draw more tables on a sheet of paper.

f. What strategies did you use to help you choose the numbers for each trial?
Answers will vary. Hopefully, answers will include reasonableness.

3. If the yards from the other 3 games were included in the data set, how would you predict
   a. the mean would change?
   Answers will vary. Since the numbers left cluster together, students may suggest the mean will stay the same.

   b. the median would change?
   Answers will vary. Help the students realize they will average the 2 numbers in the middle.

   c. the mode would change?
   The mode won't change since 52 is the only repeating number.

4. Use the TI-73 to calculate the mean, median, and mode for all 10 games. Record below.

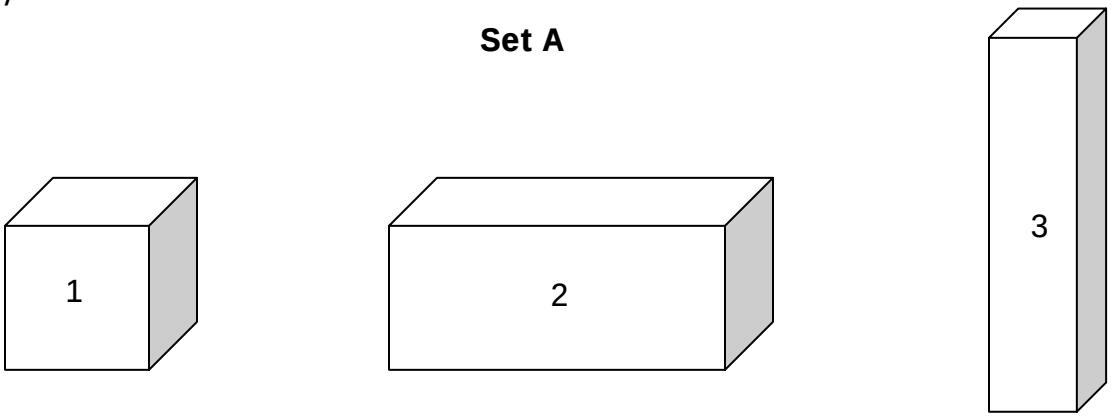
   Mean __*31.7*__ Median __*29.5*__ Mode __*52*__

5. How close were your predictions to the actual mean, median and mode? Explain similarities and differences.
   Answers will vary. Students should be detailed in explanations.

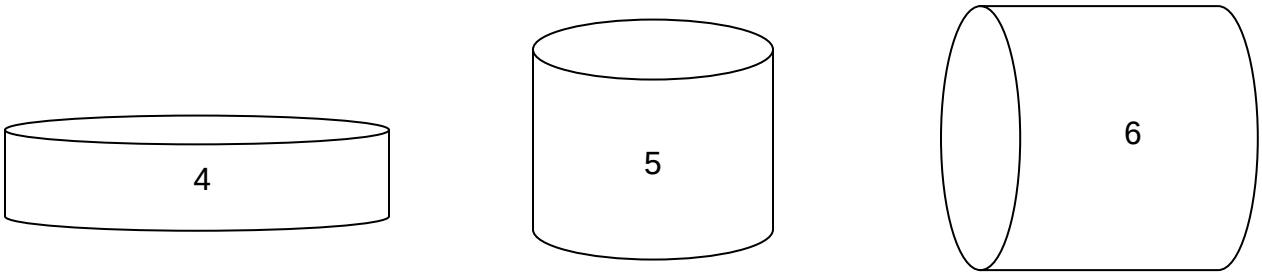
How do these shapes measure up? *(Possible Answers)*

1. Look at each set of figures below. Make a prediction about the mean, median, and mode for the heights of each set. For which set of data do you predict the mean, median and mode to be the same? Which set do you predict to have the greatest mean? Which set do you predict to have the smallest mean?
   Answers will vary. Students should use the size of the figures to make predictions.

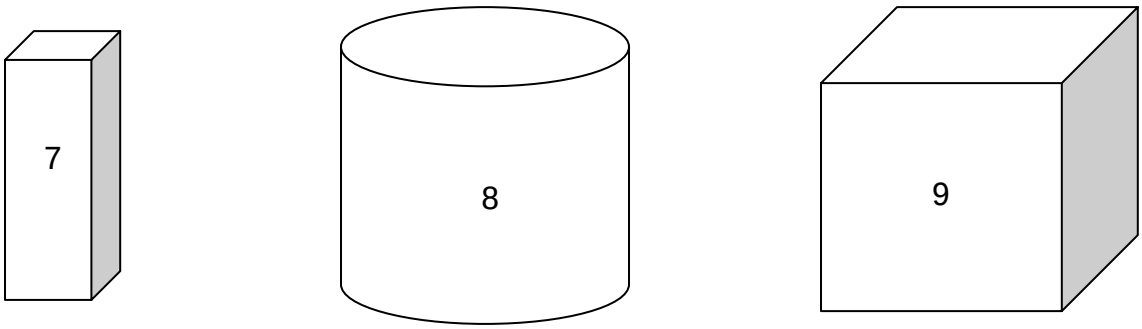
Set A



Set B



Set C



2. Measure the height of each figure. Round measurements to the nearest $\frac{1}{4}$ inch.
   Record in the chart under #4.

3. Input the height data for each set of figures using the **LIST** feature.
   Set A – L_1 Set B – L_2 Set C – L_3

4. Find the mean, median, and mode for each set of heights. Record data in the chart.

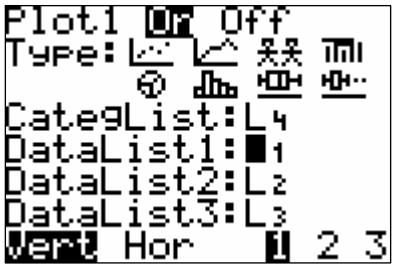
Set A	Height
1	*0.75*
2	*0.75*
3	*2*
Mean	*1.17*
Median	*0.75*
Mode	*0.75*

Set B	Height
4	*0.5*
5	*1*
6	*1.25*
Mean	*0.92*
Median	*1*
Mode	*None*

Set C	Height
7	*1.25*
8	*1.25*
9	*1.25*
Mean	*1.25*
Median	*1.25*
Mode	*1.25*

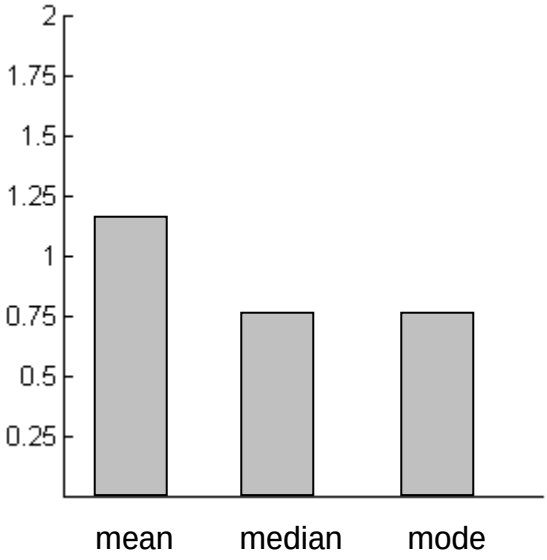
5. Input the mean, median and mode for each set of data using the **LIST** feature.
   Set A – L_4 Set B – L_5 Set C – L_6

6. Create a bar graph for the mean, median and mode of each set of heights.
   Sketch what you see.
   For each set:
   Press [2nd][Y=][ENTER].
   With the cursor blinking on ON, press [ENTER].
   Press [▼] to arrow down to the next row. Press [▶] to arrow over to the bar graph). Press [ENTER].
   Since the measures of central tendency for Set A were in L_4, choose L_4 for the CategList. To do this, press [▼] to arrow down to the CategList row. Press [2nd][LIST] and select L_4. Press [ENTER].
   Your screen should look like this:

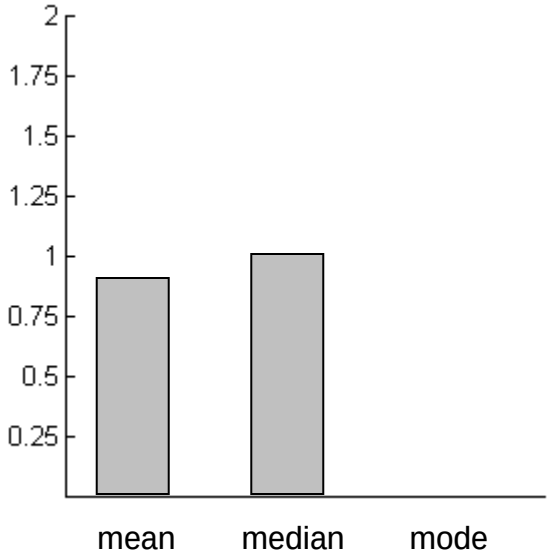


   Press [ZOOM] and arrow down to ZoomStat to see the graph.
   Sketch your graph on the next page. Repeat the process for Sets B and C.

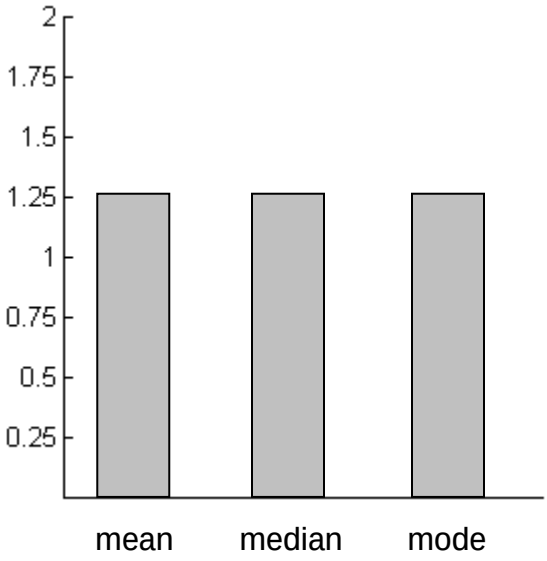
Set A



Set B



Set C



7. Use the information to answer the following questions.
    a. Which set of figures has the same mean, median and mode?
    Set C
    b. Which set has no mode?
    Set B
    c. Which set has the same median and mode?
    Sets A and C
    d. Which data set has the greatest mean?
    Set C

e. Which data set has the smallest mean?
Set B

f. How can looking at the figures help you determine the central tendencies?
Answers will vary. Lead students to realize they could visually look at the figures and use reasonableness to draw conclusions. For example, all of the figures in Set C appear to be the same height, so they will have the same mean, median and mode. All of the heights in Set B are different, so that set won't have a mode.

g. How would combining the data sets affect the mean? The median? The mode?
mean – *Answers will vary. One possible answer is that the mean will be 1.25 or maybe slightly lower since the heights in the other groups are slightly higher and lower than 1.25*

median – *Answers will vary.*

mode – *Answers will vary. The students will most likely say 1.25 since no other height occurs more than the height of the figures in Set C.*

8. How different do you think the data sets would be if you measured the lengths or diameters of the figures? What would be similar? What would be different? Explain your reasoning.
Answers will vary. Students should reason about the differences in the data sets by looking at the sides.

9. Measure the lengths or diameters for each set of figures. Be sure to round measurements to the nearest $\frac{1}{4}$ inch. Record in the chart under #10.

10. Input the length/diameter data for each set of figures using the **LIST** feature.
Set A – L_1 Set B – L_2 Set C – L_3
Find the mean, median, and mode. Record data in the chart.

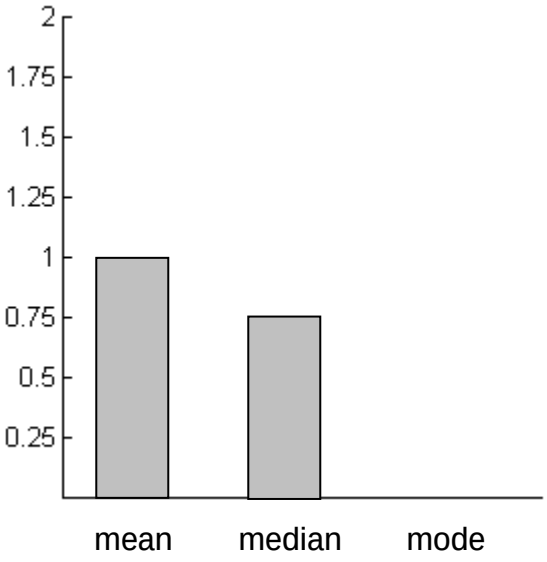
Set A	Length / Diameter
1	*0.75*
2	*1.75*
3	*0.5*
Mean	*1*
Median	*0.75*
Mode	*None*

Set B	Length / Diameter
4	*2*
5	*1.25*
6	*1.5*
Mean	*1.58*
Median	*1.5*
Mode	*None*

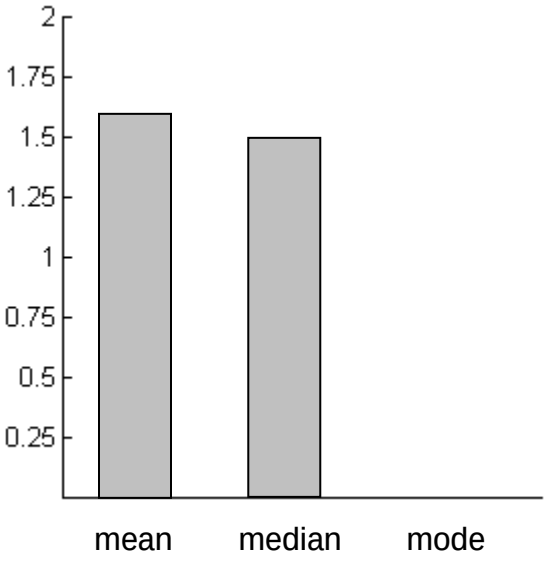
Set C	Length / Diameter
7	*0.5*
8	*1.5*
9	*1.25*
Mean	*1.08*
Median	*1.25*
Mode	*None*

11. Create a bar graph for each set of lengths/diameters. Sketch what you see.

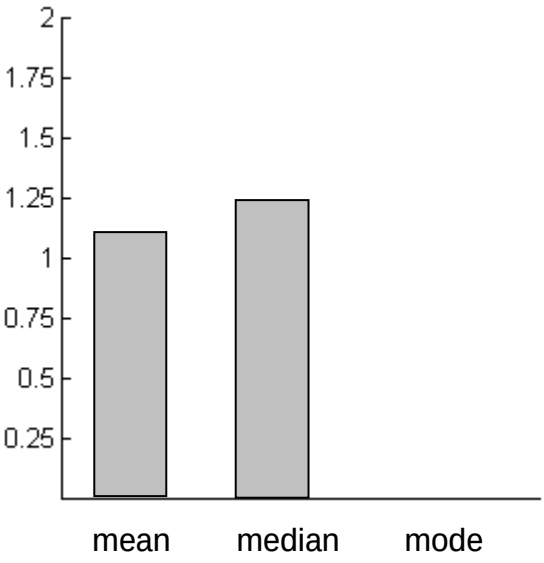
Set A



Set B



Set C



Data Mix-Up *(Possible Answers)*

Mr. Tucker gave his students the following data from the 2004 football season.

The Houston Texans played 16 games in 2004. The numbers in the table represent the total passing yards by David Carr, the quarterback, for each game.

229	215
313	164
233	201
228	157
372	167
266	220
276	139
245	114

Each student had to create a data set of passing yards for the losing games and a data set of passing yards for the winning games using the clues provided.

Clue 1: The Texans had 2 fewer wins in 2004 than losses.
Clue 2: The mean passing yards for the losing data set is less than the mean passing yards for the winning data set.
Clue 3: All of the passing yard totals for the winning games are in the same hundreds group except for 1.
Clue 4: The range for the passing yards of the losing games is 258 and of the winning games is in the one hundred range.
Clue 5: The smallest value in both data sets is in the one hundred range.

The data sets for 2 students are shown below.

Marissa	
Losses	Wins
313	372
276	266
245	233
229	228
215	220
167	201
164	114
157	
139	

Sheldon	
Losses	Wins
372	276
313	266
245	233
229	228
215	220
167	201
164	139
157	
114	

Use the clues and a TI-73 calculator to make your own data set. Find the mean, median and mode for each of your data sets. Compare your results to the given student results to decide which student is correct. Justify your reasoning.

Sheldon is correct.

Fumble Bumbles

A fumble in a football game is the failure to hold or handle the ball properly. If the opposing team recovers the fumble, they gain possession of the ball at the precise location of the recovery. Fumbles are many times key turning points in a game and could cause the team a loss.

In the 2004 football season, the Houston Texans played 16 games. The chart below shows the number of fumbles made by the Texans.

Game Date	# of Fumbles
Sept. 12	2
Sept. 19	4
Sept. 26	2
Oct. 3	1
Oct. 10	0
Oct. 17	2
Oct. 31	2
Nov. 7	0
Nov. 14	3
Nov. 21	0
Nov. 28	0
Dec. 5	2
Dec. 12	1
Dec. 19	0
Dec. 26	2
Jan. 2	1

Which measure of data (mean, median, or mode) would the Texans prefer the media report? Explain your reasoning.

Football Statistics

In 2004 Cory Bradford was a receiver for the Texans. He received the ball in 12 out of the 16 games played by the team. The total yards received during each of the first 10 games is shown below, but the yards are not listed in a particular order.

24 9 52 32 5 52 27 13 65 38

If Cory Bradford's mean, median and mode for receptions during the first 7 games were 31, 24, and 52 (when rounded to the nearest whole number), which of the above yardages represents his stats?

1. Make a prediction for the yards received in the first 7 games. Justify your reasoning.

2. Use the TI-73 calculator and the given information to help you find the yards received by Cory Bradford during the first 7 games. Follow the instructions below.
   a. Input the data using the **LIST** feature.
      Press [LIST].
      Input the 7 yards one by one into L_1.
      Press [2nd][MODE] to return to the home screen.

   b. Find the mean of the data using the **STAT** feature. Record your trials in the table on the next page.
      Press [2nd][LIST] to access the STAT menu.
      Press [▶] to arrow over to MATH.
      Press [▼] to arrow down to mean(
      Press [ENTER].
      Press [2nd][LIST] L_1 [ENTER].
      Press [ENTER].

Think strategically when choosing the 7 yards. If the 7 yards chosen doesn't yield 31, go back to the list and modify it. Find the mean again for the new list.

	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9
1									
2									
3									
4									
5									
6									
7									
mean									

c. Once you get 31 for the mean of a data set, check the median and mode.

You could find these in any order. Another option would be to find the median of the data. Once you find a median that matches 24, check the mean and mode. Use reasonableness when choosing your numbers.

To check the median:

Press 2nd LIST to access the STAT menu.
Press ▶ to arrow over to MATH.
Press ▼ to arrow down to median(
Press ENTER.
Press 2nd LIST L_1 ENTER.
Press ENTER.

To check the mode:

Press 2nd LIST to access the STAT menu.
Press ▶ to arrow over to MATH.
Press ▼ to arrow down to mode(
Press ENTER.
Press 2nd LIST L_1 ENTER.
Press ENTER.

d. Record the yards for the first 7 games below.

e. How many trials did it take before finding the yards for the 7 games?

f. What strategies did you use to help you choose the numbers for each trial?

3. If the yards from the other 3 games were included in the data set, how would you predict
   a. the mean would change?

   b. the median would change?

   c. the mode would change?

4. Use the TI-73 to calculate the mean, median, and mode for all 10 games. Record below.

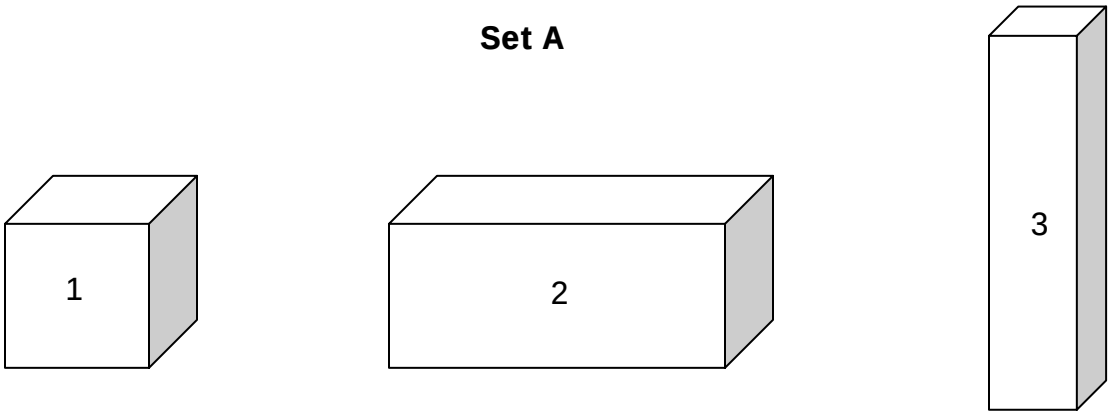
   Mean _____ Median _____ Mode _____

5. How close were your predictions to the actual mean, median and mode? Explain similarities and differences.

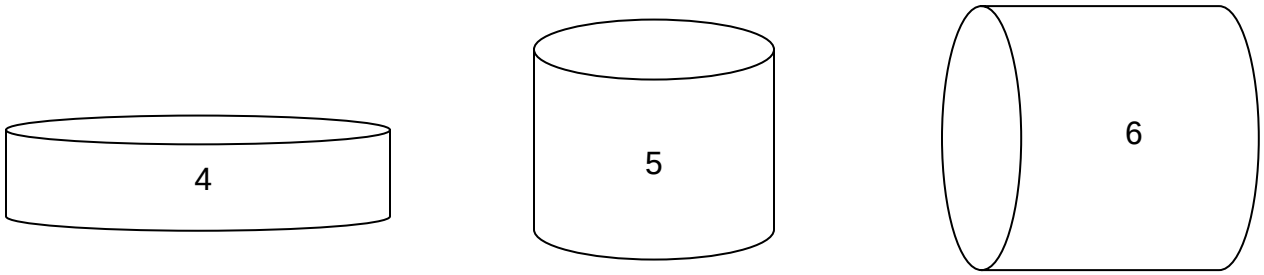
How do these shapes measure up?

1. Look at each set of figures below. Make a prediction about the mean, median, and mode for the heights of each set. For which set of data do you predict the mean, median and mode to be the same? Which set do you predict to have the greatest mean? Which set do you predict to have the smallest mean?

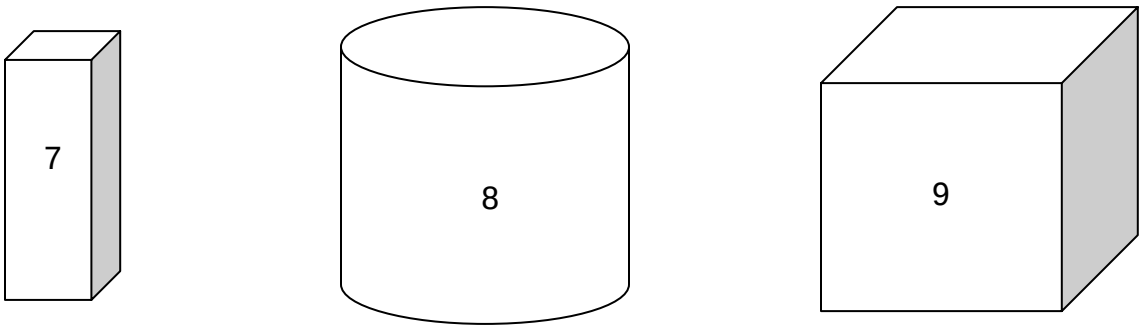
Set A



Set B



Set C



2. Measure the height of each figure. Round measurements to the nearest $\frac{1}{4}$ inch.

   Record in the chart under #4.

3. Input the height data for each set of figures using the **LIST** feature.
   Set A – L_1 Set B – L_2 Set C – L_3

4. Find the mean, median, and mode for each set of heights. Record data in the chart.

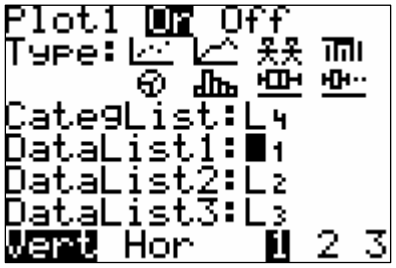
Set A	Height
1	
2	
3	
Mean	
Median	
Mode	

Set B	Height
4	
5	
6	
Mean	
Median	
Mode	

Set C	Height
7	
8	
9	
Mean	
Median	
Mode	

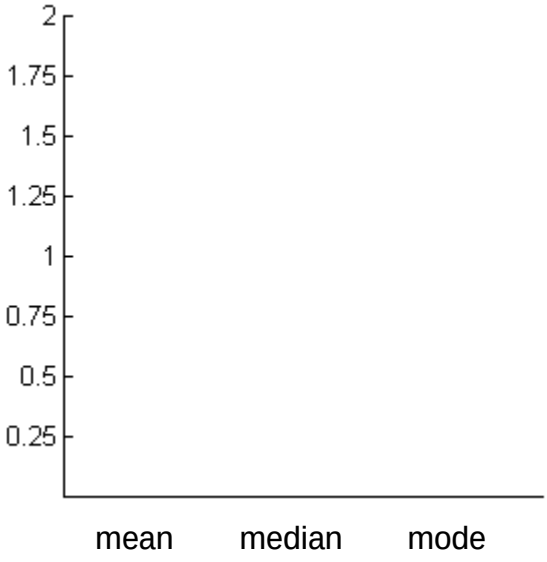
5. Input the mean, median and mode for each set of data using the **LIST** feature.
   Set A – L_4 Set B – L_5 Set C – L_6

6. Create a bar graph for the mean, median and mode of each set of heights. Sketch what you see.
   For each set:
   Press [2nd][Y=][ENTER].
   With the cursor blinking on ON, press [ENTER].
   Press [▼] to arrow down to the next row. Press [▶] to arrow over to (the bar graph). Press [ENTER].
   Since the measures of central tendency for Set A were in L_4, choose L_4 for the CategList. To do this, press [▼] to arrow down to the CategList row. Press [2nd][LIST] and select L_4. Press [ENTER].
   Your screen should look like this:

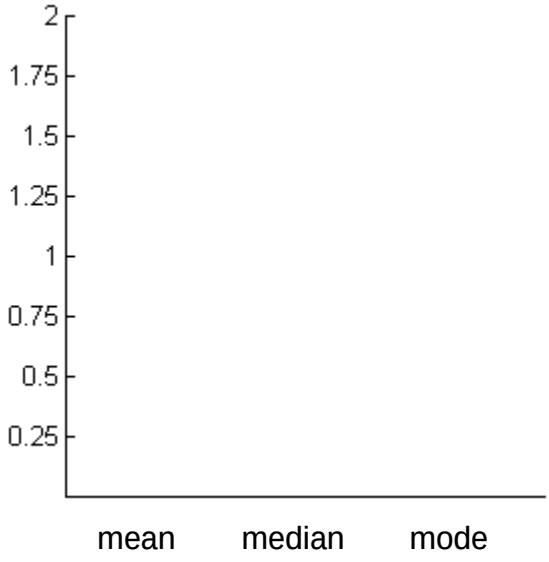


   Press [ZOOM] and arrow down to ZoomStat to see the graph.
   Sketch your graph on the next page. Repeat the process for Sets B and C.

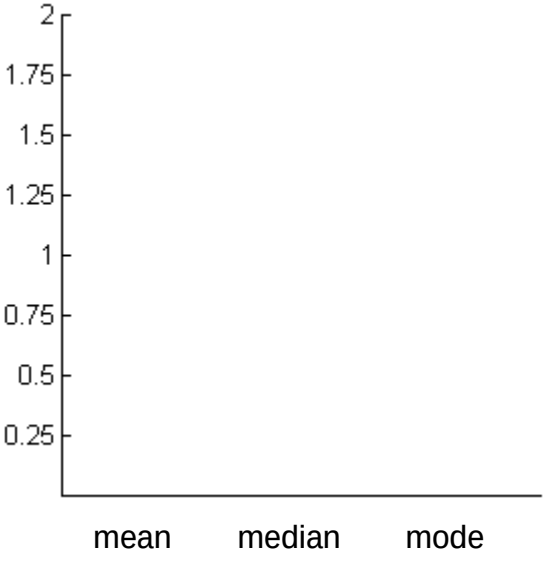
Set A



Set B



Set C



7. Use the information to answer the following questions.

   a. Which set of figures has the same mean, median and mode?

   b. Which set has no mode?

   c. Which set has the same median and mode?

d. Which data set has the greatest mean?

e. Which data set has the smallest mean?

f. How can looking at the figures help you determine the central tendencies?

g. How would combining the data sets affect the mean? The median? The mode?

mean –

median –

mode –

8. How different do you think the data sets would be if you measured the lengths or diameters of the figures? What would be similar? What would be different? Explain your reasoning.

9. Measure the lengths or diameters for each set of figures. Be sure to round measurements to the nearest $\frac{1}{4}$ inch. Record in the chart under #10.

10. Input the length/diameter data for each set of figures using the **LIST** feature.
Set A – L_1 Set B – L_2 Set C – L_3
Find the mean, median, and mode. Record data in the chart.

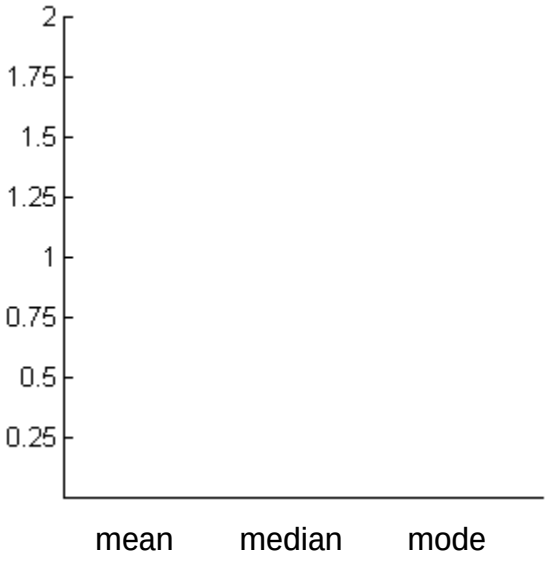
Set A	Length/ Diameter
1	
2	
3	
Mean	
Median	
Mode	

Set B	Length/ Diameter
4	
5	
6	
Mean	
Median	
Mode	

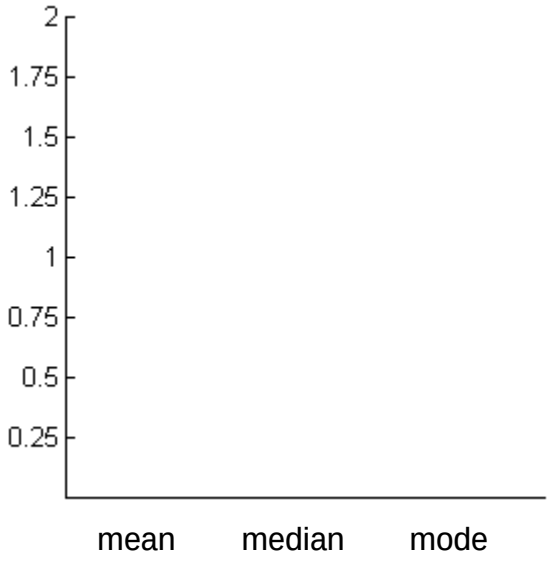
Set C	Length/ Diameter
7	
8	
9	
Mean	
Median	
Mode	

11. Create a bar graph for each set of lengths/diameters. Sketch what you see.

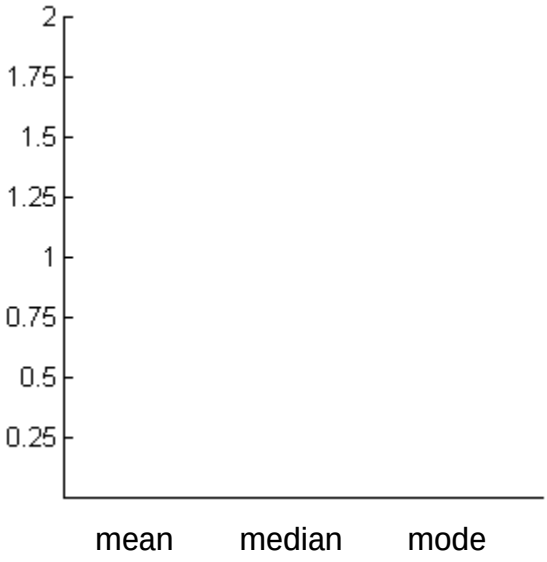
Set A



Set B



Set C



Data Mix-Up

Mr. Tucker gave his students the following data from the 2004 football season.

The Houston Texans played 16 games in 2004. The numbers in the table represent the total passing yards by David Carr, the quarterback, for each game.

229	215
313	164
233	201
228	157
372	167
266	220
276	139
245	114

Each student had to create a data set of passing yards for the losing games and a data set of passing yards for the winning games using the clues provided.

Clue 1: The Texans had 2 fewer wins in 2004 than losses.
Clue 2: The mean passing yards for the losing data set is less than the mean passing yards for the winning data set.
Clue 3: All of the passing yard totals for the winning games are in the same hundreds group except for 1.
Clue 4: The range for the passing yards of the losing games is 258 and of the winning games is in the one hundred range.
Clue 5: The smallest value in both data sets is in the one hundred range.

The data sets for 2 students are shown below.

Marissa	
Losses	Wins
313	372
276	266
245	233
229	228
215	220
167	201
164	114
157	
139	

Sheldon	
Losses	Wins
372	276
313	266
245	233
229	228
215	220
167	201
164	139
157	
114	

Use the clues and a TI-73 calculator to make your own data set. Find the mean, median and mode for each of your data sets. Compare your results to the given student results to decide which student is correct. Justify your reasoning.

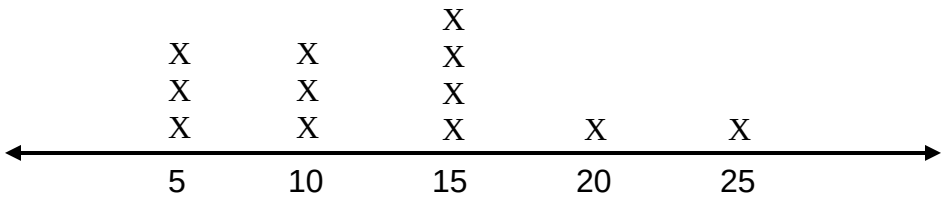
1. The table shows the number of points Menu scored during the first 5 basketball games.

Game	Points Scored
1	15
2	11
3	18
4	12
5	29

If Menu wants to predict how many points he will score during the next game, which measure of the data should he use?

A Mean
B Median
C Mode
D Range

2. Mai charges $5 per hour for babysitting. She decided to chart the amount she earned on different evenings spent babysitting during the past month.



What was the median amount she earned during the month?

A $10
B $12.50
C $14
D $15

3. In his first three hours of waiting tables, Kimiko received the following tip amounts.

$2 $1.50 $2 $3.25 $5 $2.25 $12

If Kimiko wants to ask for a raise by showing his tips are not very good, which measure of central tendency should he show his boss?

A Mean
B Median
C Mode
D Range

4. To participate in an activity at the Fall Festival or purchase food items, tickets must be purchased. Below is a table that describes some booths and food items at the Fall Festival and the number of tickets needed for that booth.

Activity or Food Item	Number of Tickets
Cake Walk	3
Fishing	2
Moon Walk	4
Pony Ride	6
Ring Toss	2
Rock Climbing	7
Chips	3
Drinks	3
Hot Dogs	5
Nachos	5

If the Fall Festival adds a petting zoo to the list above, how many tickets should the petting zoo cost for the mean to stay the same?

A 3
B 3.5
C 4
D 5