Mrs. Orosz's April News
for after Spring Break

Good morning students and families,

I hope you all enjoyed your Spring Break (April 6-10) and that you all have been safe at home. For me, it seems like one day runs into the next and it is difficult remembering what the date is anymore. I have been trying to keep busy during our time off. I have done some cleaning, reading, painting, walking outdoors, and playing with my dogs. I have been helping Carter and Caleb stay on track in 7th grade and as a junior in high school. I have also had meetings on Zoom with Mr. Sovacool and other teachers talking about the rest of the school year and trying to brainstorm ideas and have spent time organizing your lessons for the next three weeks. I know some of you have had meetings with Mrs. Horsburgh on Zoom, too. We are all learning what teaching and learning looks like from a distance.

I hope this letter finds you and your family well. I hope you have reviewed in math with the pages I asked you to complete and finished work on CH 13 in science. You will be able to turn this work in when the district decides how you should do that. When they decide you can tear those pages out and staple them all together. Now let's talk about work from April 13-May 1. This learning is to be new learning. We have been told that we will be grading this work. We will be completing CH 11 and Ch 12 in math which is our statistics unit. In science we will be completing CH 1 Cells, Reproduction, and Heredity. I have split these units up into day by day requirements. Please try to keep up with this so it doesn't build up.

Some things to keep in mind:

*For math, please do not skip the lesson pages and try to skip to the homework page. You have to complete all those pages to learn the material because I am not there to go through all of it. Do the Got-It problems, too.

*Use the videos in the online textbook. There is a video on each lesson. You have log-in usernames and passwords in your planners.

* I am providing the notes you would usually glue in your math notebook.

*IReady-Please make sure you are getting at least 30 minutes a week. I have been checking the time each of you are logged on and how many lessons you are passing. Some of you have logged in, but only for a few minutes. Remember this program teaches you where you are and will help you learn things from other grades if you need that. It will extend the learning of those of you that are above 6th grade, too.

* I am creating a Google Classroom. You will find the packet of math and science pages there or to pick up at school. I will also be posting video links from Khan Academy for each concept. So you will have 2 video clips on each concept.

* I will have office hours, but I will check my email much of the day outside of those hours also. Please email me and I will respond quickly. If I can not answer you with email, I will give you another way to contact me so I can answer your questions.

*Especially for science, please access my website and Mr. Corell's website that we have used in class. There are many links on there for videos and projects. In school for CH 1 science, we would have used our microscopes quite a bit. If you have one you can do many things with them. If not there are many virtual online microscopes that I will try to link on my Google Classroom. Continue to check it often because as I find more great content, I will continue to add more things to it or to my other website. It is difficult to give many experiments because many people do not have the supplies to complete them. I don't want people going out to the stores to buy things. I will post some ideas for experiments, but these will be optional (and not graded).

*I will also try to give you some boredom busters (like the Pringles ring in the last letter). These are things to do when you are bored. Many of them will be STEM or STEAM activities that are interesting and educational, but again optional and not necessarily linked to our 6th grade standards. The required things will be in the lesson plans for each week that you must do.

Boredom Busters:

https://code.org/ This website has many activities for all ages to teach you about computer programming. You can make an account so it saves what you have completed. If you haven't done this before, search "Hour of Code" and begin there.

https://wideopenschool.org/ This website is a treasure trove for families and teachers. It has content for all ages. They are adding more every day. It has every subject (even art and physical fitness ideas). It has content to help with these stressful times like yoga and meditation, too. Carter and I found TinkerCad on there and he was building circuits and designing things for his 3-D printer. We also spent a lot of time watching the live animal cams at different zoos. Those are under field trips. There are things for math and science that do apply to our standards. Check out those sections.

Please contact me if you are confused about what to do or how to do it. We will work through this together!

Stay well and miss you,
Mrs. Orosz
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April 13-17

	Math	Science
Monday 13	CH 11 pages 805-808 Inquiry Lab-Statistical Questions I also provided notes on this topic.	CH 1 Cells, Reproduction, & Heredity Lesson 1 How do plant and animal cells differ? Do CH 1 vocab crossword and read pages 32-36
Tuesday 14	Georgia Task-What is a statistical question? Remember use the notes I provided to help, too	Do Lesson 1 study guide and use pages 32-36 to complete it
Wednesday 15	CH 11 Lesson 1 Mean Do pages 809-813 *I gave you notes on mean also	Do Cells Research-Use Cells Alive website (great and interactive) to research different organelles of plant and animal cells. Fill out the research page.
Thursday 16	CH 11 Lesson 2 pages 817-821 Median and Mode	Continue your research from yesterday.
Friday 17	Do Mid CH Check page 828 and complete iReady 20 minutes	Use your book and research that you completed to do: Venn Diagram Cell Parts (labels) Getting to Know Cell Organelles

April 20-24

	Math	Science
Monday 20	CH 11 Lesson 3 pages 829-833 Measures of Variation *Learn quartiles, 1st and 3rd quartiles, interquartile range, and range *use notes and videos to help	Do Cell Drawing Project -You can draw like the directions say or you can use as much creativity and supplies that you have available. In class we use craft supplies or "junk" to create these. I have also had students make them edible by making them out of candies that resemble each organelle. Again, use what you can. I am giving you three days for this. Follow the directions about using index cards
Tuesday 21	Skip Lesson 4 in the book. The state says we no longer need to learn this in 6th grade. Do CH 11 Lesson 5 pages 845-849 Appropriate measures	Cell Project
Wednesday 22	Georgia Task-Who Was the Greatest Yankee Homerun Hitter? Do #1 only which is finding the mean, median and # of observations (which is how many years they played for that team-which you need for mean) Save the rest for after CH 12	Cell Project
Thursday 23	Look at the page in the packet that says Boy Band. I did this as an example. Look carefully how I wrote out the numbers on the frequency table. Now do the worksheet that is called Penalty Shoot-Out. Use your notes and my example.	CH 1 Lesson 2 read pages 40-46 How do cells work together?
Friday 24	iReady 30 minutes	Do Lesson 2 study guide

April 27-May 1

	Math	Science
Monday 27	CH 12 Lesson 1 do pages 863-867 Line Plots Also do #2 on Yankee project from last week. Only create the frequency tables for each player	Pick a system (digestive, skeletal, nervous, etc) to research. Use some of the websites I have linked or that Mr. Corell has linked. Do the Comprehension 4 Square on that system.
Tuesday 28	CH 12 Lesson 2 do pages 871-875 Histograms Also finish #2 on Yankee project by making histograms on each player	Watch a Bill Nye or 2 on a systems or parts of the body. I have attached worksheets on Bones & Muscle, Blood & Circulation, Digestion, Germs. Or if you watch a different one you could just write a paragraph about what you learned. Mr. Corell has some linked to his website or they are easy to find.
Wednesday 29	CH 12 Lesson 3 pages 879-883 Box Plots	Read CH 1 Lesson 3 pages 50-56 How do cells reproduce?
Thursday 30	Do page 890 Mid CH Check and Iready time	Do Lesson 3 study guide using pages 50-56 from yesterday
Friday 1	Do CH 12 Lesson 4 pages 891-895 Shapes of Data Also complete #3-6 on the Yankee project to finish it up	Do packet pages on Learning About DNA (numbers on pages are 27-34) There are cool things that you can examine about your family to see what is genetic and what traits run in your family.

Definition of Statistical Questions

Statistical questions specify populations and measurements of interest and anticipate answers based on data that vary.

- Needs to be specific
- Collects numbers
- Not a yes or no question
- Includes group that you are asking or polling
- Not an explanation answer

LEARNING TASK: WHAT IS A STATISTICAL QUESTION?

1. Examine the situation presented by your teacher.

   a. Make a list of at least 10 questions you could ask about this scenario.

   b. Circle questions that can be answered with a single answer such as, "What is your name?

   c. Underline the questions with answers containing variability such as, "How far do you live from your classmates?"

2. What must be true about a question for it to classified as a statistical question?

3. For each question, decide if it is a statistical question; if it is, put an S beside it. If it is not, EXPLAIN why it is not and REWRITE it as a statistical question.

A. How many words are there in this sentence?

B. How many TV's are in your house?

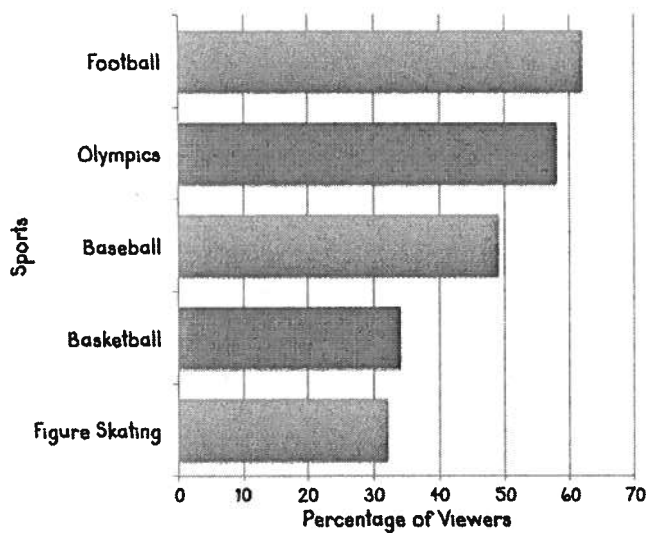C. How many siblings do the students on Team B have living in their homes?

D. How many socks are in your drawer?

F. What is your favorite color?

G. How far does Savannah have to walk to reach Colin's house each day?

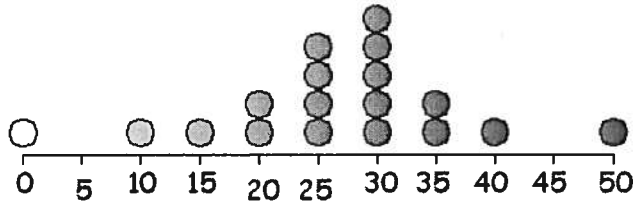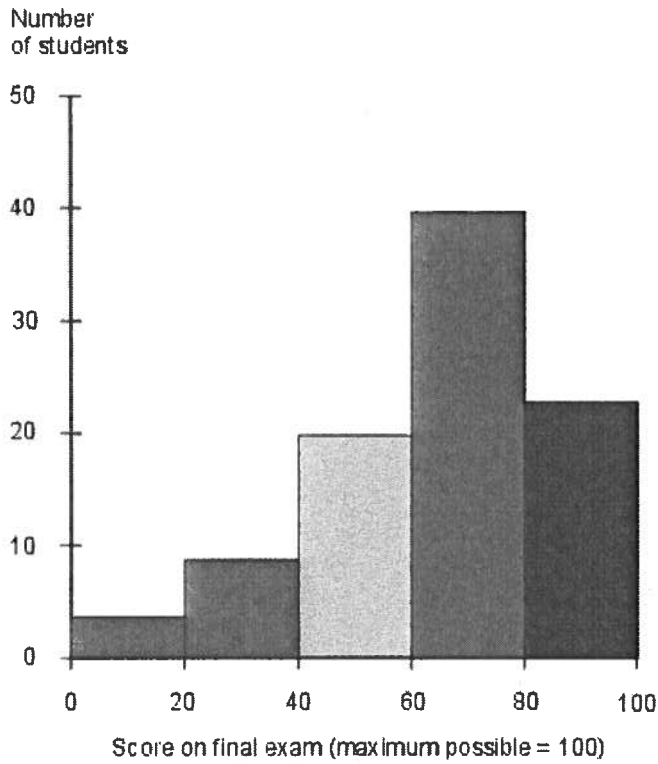4. Look at each graphical display and write a question that COULD have been asked to collect the specific data.

A

B.

C.

Score on final exam (maximum possible = 100)

D. (Mark represents any category that the student can make up)

Mark	Tally	Frequency
4	II	2
5	II	2
6	IIII	4
7	IIII I	5
8	IIII	4
9	II	2
10	I	1

Measures of Center

Mean is the *sum of the values* in a set divided by the *number of values* in the set. In the dot plot below, each dot represents a data value for how many pets each student owns. Students need to add the values of each dot to find a total sum or number of pets owned by all class members. Then they divide that sum by the number of values, which is the same as the number of students. This gives the mean number of pets for each student.

$(1+1+1+1+1+1+2+2+2+3+3+4+4+4+5+5+5+5+5) \div 19 = 2.9$ pets for each student

When should the mean be selected? Mean is useful when most of the data is tightly clustered as in the graph below. This means there are no extreme values or outliers.

Median is the middle number of a set of values when the numbers are arranged in order from least to greatest. If there are two middle numbers, the median is the mean of those numbers. In the dot plot below, the median value is 3.

When should median be selected? Median is useful as a measure of center when there are extreme values or outliers and there are no big gaps in the middle of the data set. Median is also used in constructing box plots.

Mode is the number that appears most frequently in a set of numbers. There may be one mode, more than one mode, or no mode for a given data set. In the dot plot below, the mode is 1. The most frequent number of pets owned is 1.

When should the mode be selected? Mode can be a good choice when there are many identical data points because it describes what is typical about the set of data.
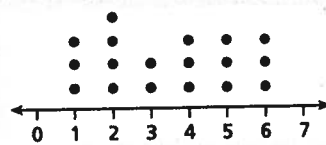
Dot Plot Example:
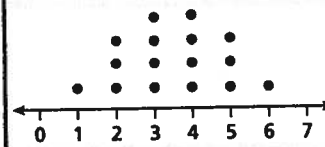

Number of Pets
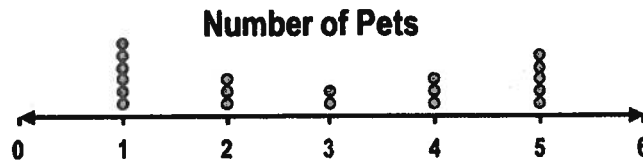
Mode = 1

Median = 3

Mean = 2.9

Types of Distributions

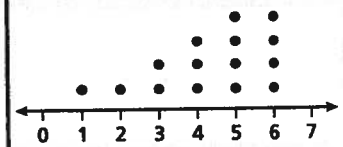| UNIFORM DISTRIBUTION	SYMMETRIC DISTRIBUTION	SKEWED DISTRIBUTION
In a **uniform distribution**, all data points have an approximately equal frequency.	In a **symmetric distribution**, a vertical line can be drawn and the result is a graph divided in two parts that are approximate mirror images of each other.	In a **skewed distribution**, the data is not uniform or symmetric. The data may be skewed to the right or skewed to the left.

MEAN, MEDIAN, MODE:

8, 18, 20, 25, 7, 18

1. PLACE IN NUMERICAL ORDER—LEAST TO GREATEST
2. <u>MEAN</u>—THE AVERAGE—ADD UP THE NUMBER AND DIVIDE BY THE NUMBER OF DATA
3. <u>MODE</u>-- THE MOST OFTEN
4. <u>MEDIAN</u>—THE NUMBER IN THE MIDDLE

Hey diddle diddle,
the median's the middle;
YOU ADD AND DIVIDE FOR THE MEAN.
The mode is the one that appears the most,
and the range is the difference between.

Measures of Variation (Spread)

Range is the difference between the maximum and the minimum in a set of data. In the box plot below, the highest math test score is 100% and the lowest math test score is 30%. The range would then be 100% minus 30% which is 70%.

$$100 - 30 = 70\%$$

Why is range important? Range is valuable for knowing how far apart the minimum and maximum values are in a data set. It helps to know when the spread of data is close together or far apart.

Mean Absolute Deviation is an average of how far each data point in a set is from the mean of the set of data. A detailed description of how to find the mean absolute deviation for a set of data is included in this document.

Lower Quartile (Q1) is the median of the lower half of an ordered set of data. In the box plot below, the median of the lower half of the data is 50. This means that the middle test score in the lower half of the data was 50%.

Upper Quartile (Q3) is the median of the upper half of an ordered set of numbers. In the box plot below, the median of the upper half of the data is 93. The middle test score in the upper half of the data was 93%.
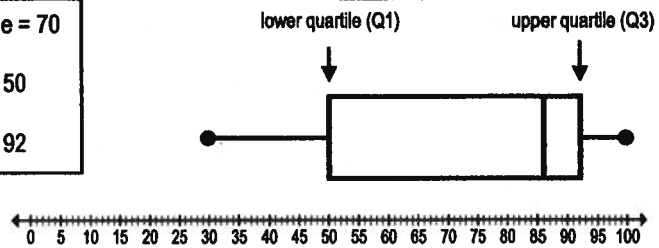
Why are the lower and upper quartiles important? Knowing the lower and upper quartiles helps to determine whether data points are outliers.

Interquartile Range is the difference between the upper quartile and the lower quartile. In the box plot below, the interquartile range is $93 - 50 = 43$.

Box Plot (Box-and-Whisker Plot) Example:

Math Test Scores in Percents

Range = 70

Q1 = 50

Q3 = 92

lower quartile (Q1)   upper quartile (Q3)

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

Hours Watching TV in One Week

cluster

gap

0   5   10   15   20   25   30   35
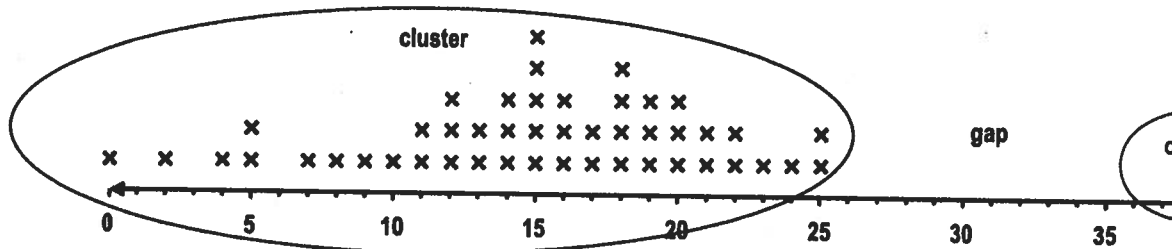
Who was the Greatest Yankee Homerun Hitter?

The following table lists four of the greatest New York Yankees' home run hitters with the number of homeruns each hit while a Yankee.

Adapted from: James M. Landwehr and Ann E. Watkins, Dale Seymour Publications, Mathematics, 1986, Pg. 160

Babe Ruth		Lou Gehrig		Mickey Mantle		Roger Maris	
Year	Home runs	Year	Home runs	Year	Home runs	Year	Home runs
1920	54	1923	1	1951	13	1960	39
1921	59	1924	0	1952	23	1961	61
1922	35	1925	20	1953	21	1962	33
1923	41	1926	16	1954	27	1963	23
1924	46	1927	47	1955	37	1964	26
1925	25	1928	27	1956	52	1965	8
1926	47	1929	35	1957	34	1966	13
1927	60	1930	41	1958	42		
1928	54	1931	46	1959	31		
1929	46	1932	34	1960	40		
1930	49	1933	32	1961	54		
1931	46	1934	49	1962	30		
1932	41	1935	30	1963	15		
1933	34	1936	49	1964	35		
1934	22	1937	37	1965	19		
		1938	29	1966	23		
		1939	0	1967	22		
				1968	18		

Source: Macmillan Baseball Encyclopedia, 4ᵗʰ edition

1. Find the mean, median, and number of observations for each player.

	Ruth	*Gehrig*	*Mantel*	*Maris*
Mean				
Median				
n				

Of the two values you computed for each player, which do you think best describes the performance of each player? Why?

2. Make a frequency table and histogram for each player. Use the intervals 0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69

3. Describe the shape of the data for all four players. What observations can you make about the four players by looking at the shape?

4. Looking at the histogram for BABE RUTH, determine the range of homeruns Babe Ruth hit while playing for the Yankees.

5. Create a dot plot using Babe Ruth's home runs.

6. Describe the similarities between Babe Ruth's histogram and Babe Ruth's dot plot. Are there any differences? Does the range change between the histogram and the dot plot?

Example

Boy Bands

1. The bar chart represents the scores from a quiz.
   Children were asked to name six boy bands in 30 seconds.
   Each score represents the number of correctly named bands.
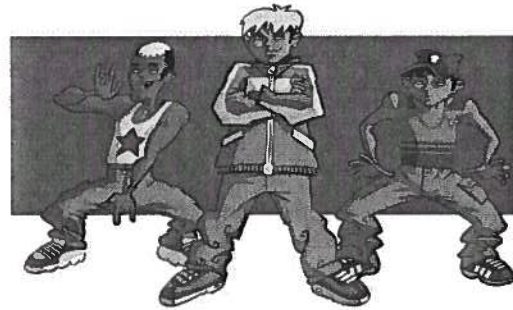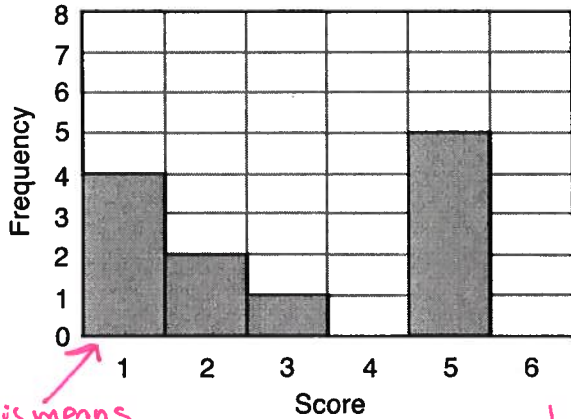
This means 4 1's.

1,1,1,1,2,2,3,5,5,5,5,5

a. How many children were involved in the quiz? Show how you obtain your answer.

There were 12 children involved. I wrote out all the numbers from the frequency chart. My work is above.

b. Complete the table with values for the Mean, Median, Mode, and Range of scores.
   Explain how you calculate each answer.

Mean score	*3*	*1+1+1+1+2+2+3+5+5+5+5+5 = 36 ÷ 12* *For mean I add up all the numbers and divide by how many children there are.*
Median score	*2.5*	*The median is the number in the middle. Put them in order then check off a number on each end until you get to the middle* 1,1,1,1,②③,5,5,5,5,5
Mode score	*5*	*Mode means the number that is most often. Looking at the frequency table I can tell there are more 5's.*
Range of scores	*4*	*Range is highest number — minus the lowest number.* *5 - 1 = 4*

2. The results of another quiz question is shown in the table below.
   Draw a possible bar chart of the scores:

Mean score	4
Median score	3.5
Mode score	3
Range of scores	4
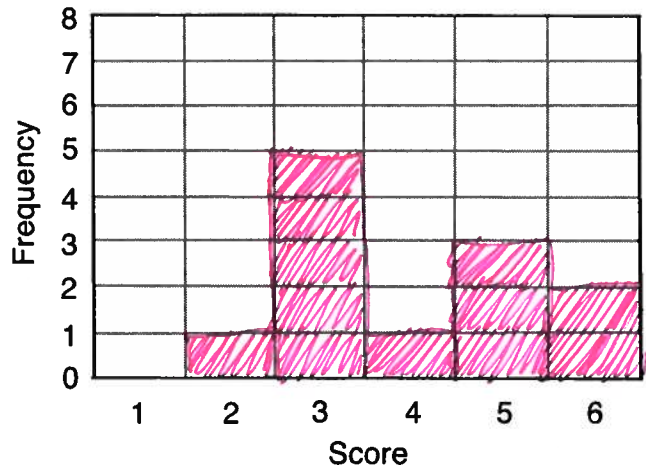
Show all your work.

2, 3, 3, 3, 3, 3, 4, 5, 5, 5, 6, 6

When you add them you get 48 ÷ 12 numbers = 4 mean

for Median

2, 3, 3, 3, 3 ⟨3 | 4⟩ 5, 5, 5, 6, 6
                    ↓
                   3.5

Mode = 3 is the number that appears most often
Range   6 - 2 = 4

* Note to students = I had to think about all the variables
  (mean, median, mode, range) and problem solve. I knew I had to
  have more 3's than anything else. I knew for range I either
  had to have the highest 6/lowest 2 or highest 5/lowest 1. I knew
  median had to be between 3 and 4 to be 3.5. I had a lot of guess + check
  to make it all work.

* Maybe more than 1 correct answer

Penalty Shoot-Out

1. The bar chart represents the outcome of a penalty shoot-out competition.
   Each person in the competition was allowed six shots at the goal.
   The graph shows, for example, that four people only scored one goal with their six shots.
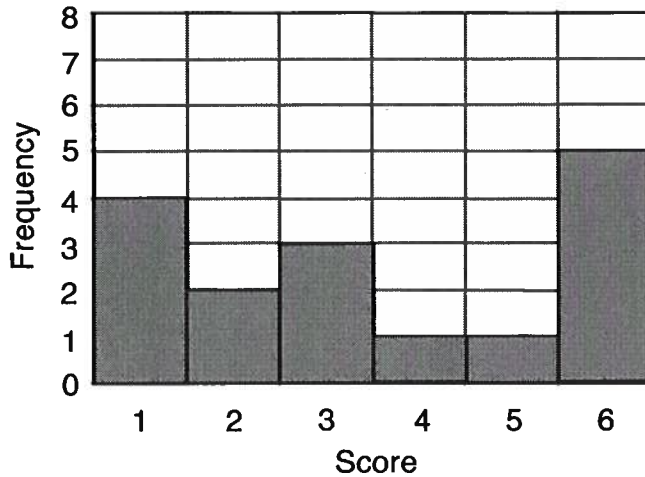
a. How many people were involved in the shoot-out?
   Show how you obtain your answer.

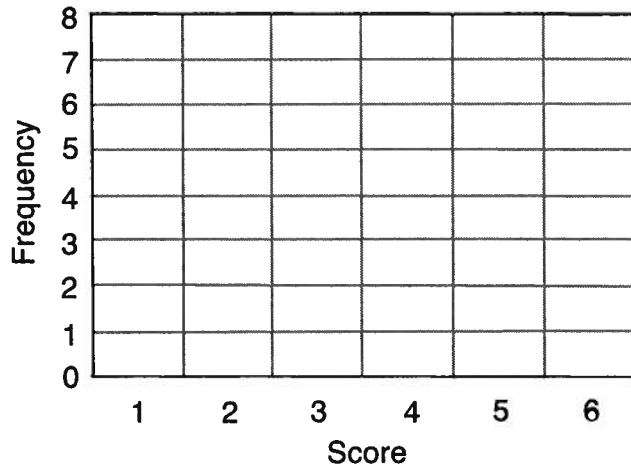
b. Complete the table with values for the Mean, Median, Mode, and Range of scores.
   Explain how you calculate each answer.

Mean score	----------	
Median score	----------	
Mode score	----------	
Range of scores	----------	

2. There is another penalty shoot-out.
   Use the table of results to draw a possible bar chart of the scores:

Mean score	3
Median score	3.5
Mode score	4
Range of scores	4

Show all your work.

Frequency Table

Age of People Attending a Movie		
Age Ranges	Tally	Frequency
0 - 9	|||	3
10 - 19	||||	4
20 - 29	|||| |	6
30 - 39	|||| |||	8
40 - 49		0
50 - 59	|	1
60-69	||	2

Histogram

Ages of People Attending a Movie

Dot Plot