Oakland CUSD #5

Geometry
May 11-15, 2020

Emily Myers

Week of May 11-15, 2020
Ms. Myers

Hello everyone. Choose 2 of the following activities for the class you are enrolled in to complete for this week. All assignments may be turned in via google classroom. Take a picture or scan it in and turn it into the corresponding assignment. Or you may turn in paper copies to the office and they will get them to me. Both choices are due by Monday, May 18 at noon. **Be sure to write whatever choice you are doing at the top of your page.**

I will be at my computer for questions on Tuesday 10a-12p, Wednesday 3p-5p & Thursday 12p-2p. **NO WORK = NO CREDIT**

Class	Choice 1	Choice 2	Choice 3	Choice 4	Choice 5
Algebra 2	Tessellations	Marshmallow Shapes	Designs with Number Patterns	US President Data Analysis	Evaluation Wkst
Algebra 3/Trig	Tessellations	Marshmallow Shapes	Designs with Number Patterns	US President Data Analysis	Evaluation Wkst
Geometry	Tessellations	Marshmallow Shapes	Designs with Number Patterns	US President Data Analysis	Evaluation Wkst
Tech Math	Tessellations	Marshmallow Shapes	Designs with Number Patterns	US President Data Analysis	Evaluation Wkst

I have to turn in grades on May 20. I cannot accept anything late. I have to have it on May 18

5/11 Choice 1
Myers

Tessellations

Tessellations are all around us! A tile floor is a good example.

M.C. Escher – a Dutch artist (1898-1972) who is best known for his mathematically inspired drawings and prints which displayed great realism, while at the same time showing impossible perspective, eye trickery and metamorphosis.

Tessellation – a pattern made with polygons that completely fills a space with no gaps, spaces or overlaps.
Polygon – a shape with three or more sides

Directions:

1. Cut a *lined* index card to 3″x3″.

2. Next, cut a shape from one side of your 3″x3′ card, and slide it to the opposite side of the card, without flipping it over or turning it. *(The lines on your index card will show you if you've flipped or turned it!)*

3. Now, tape the shape so that it is *exactly across from* the spot you cut it from. If you include a corner in your cut, it makes it easier to line the shape up on the opposite side. *(For older students, you can make this project more challenging by having them repeat this step on an adjacent side of their card, as in the sample project above.)*

4. Turn your newly created shape (we'll call this your "tile") in different directions and *use your imagination* to see if it "looks like" anything. Lightly sketch your idea onto your tile…. be creative!

Marshmallow Shapes

5/11 Choice 2 Myers

Using marshmallows and uncooked spaghetti or toothpicks create the following shapes:

Square Pyramid
Triangular Pyramid
Hexagonal Pyramid
Cube
Rectangular Prism
Triangular Prism
Cylinder
Pentagonal Prism

Take a picture of the shapes and place them on a google doc.
Under each picture write the formulas for the surface area and volume of each figure.
Measure each of your shapes and calculate the surface area and volume of your figures.

5/11 Choice 3

Myers

Designs with Number Patterns

Materials:

- 12 x12 white construction paper
- Ruler with raised or beveled edge (to prevent ink from smearing when you move the ruler)
- Fine point markers in assorted colors, plus black

Directions:

1. Fold your paper in half both directions, then open flat.
2. Place the 5" mark of your ruler on the center point (where your folds cross) and use a black marker to draw a 10" line centered on the fold.
3. Now turn your ruler and repeat this step on the other fold to make a cross that is centered on your paper.
4. On each "arm" of the cross, make 5 small marks 1" apart. Think of the marks closest to the center as being "#1", then 2, 3, 4, and 5 out to the end of each arm.
5. Use colored markers to connect all the points in each quadrant of your paper that add up to six (ex. 1+5, 2+4, 3+3, 4+2, 5+1). When one quadrant is completed, move on to the next. You may use the same color for each quadrant, or try using a combination of different colors.

US President Data Analysis

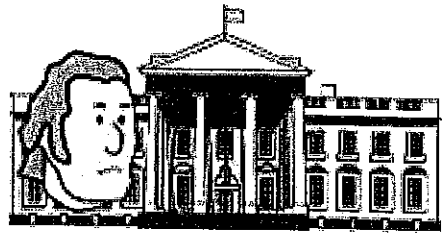
5/11 Choice 4 Myers

Data of US Presidents

Name	State of Birth	Term	Age at Inauguration	Age at Death	Number of Sons	Number of Daughters
Washington	VA	1789-1797	57	67	0	0
Adams	MA	1797-1801	61	90	3	2
Jefferson	VA	1801-1809	57	83	1	5
Madison	VA	1809-1817	57	85	0	0
Monroe	VA	1817-1825	58	73	0	2
JQ Adams	MA	1825-1829	57	80	3	1
Jackson	SC	1829-1837	61	78	0	0
Van Buren	NY	1837-1841	54	79	4	0
W Harrison	VA	1841	68	68	6	4
Tyler	VA	1841-1845	51	71	8	6
Polk	NC	1845-1849	49	53	0	0
Taylor	VA	1849-1850	64	65	1	5
Fillmore	NY	1850-1853	50	74	1	1
Pierce	NH	1853-1857	48	64	3	0
Buchanan	PA	1857-1861	65	77	0	0
Lincoln	KY	1861-1865	52	56	4	0
A Johnson	NC	1865-1869	56	66	3	2
Grant	OH	1869-1877	46	63	3	1
Hayes	OH	1877-1881	54	70	7	1
Garfield	OH	1881	49	49	5	2
Arthur	VT	1881-1885	50	56	2	1
Cleveland*	NJ	1885-89, 1893-97	47	71	2	3
B Harrison	OH	1889-1893	55	67	1	2
McKinley	OH	1897-1901	54	58	0	2
T Roosevelt	NY	1901-1909	42	60	4	2
Taft	OH	1909-1913	51	72	2	1
Wilson	VA	1913-1921	56	67	0	3
Harding	OH	1921-1923	55	57	0	0
Coolidge	VT	1923-1929	51	60	2	0
Hoover	IA	1929-1933	54	90	2	0
F Roosevelt	NY	1933-1945	51	63	5	1
Truman	MO	1945-1953	60	88	0	1
Eisenhower	TX	1953-1961	62	78	2	0
Kennedy	MA	1961-1963	43	46	2	1
LB Johnson	TX	1963-1969	55	64	0	2
Nixon	CA	1969-1974	56	81	0	2
Ford	NB	1974-1977	61	93	3	1
Carter	GA	1977-1981	52	-	3	1
Reagan	IL	1981-1989	69	93	2	2
GHW Bush	MA	1989-1993	64	-	4	2
Clinton	AK	1993-2001	46	-	0	1
GW Bush	CO	2001-2009	54	-	0	2
Obama	HA	2009-	47	-	0	2

5/11 Choice 4 Myers

He Entered a Young Man



Make a parallel box-and-whisker plot **by hand** of the ages of the US Presidents at the time of their inauguration. Use the box-and-whisker plot to answer the following questions.

Name _____

Date _____

Period _____

1. What is the median of the ages of the US President at the time of their inauguration?

2. What is the age of the youngest US President at the time of their inauguration?

3. What is the age of the oldest US President at the time of their inauguration?

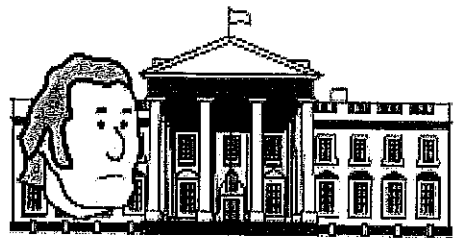
4. What is the upper quartile age of the US Presidents at the time of their inauguration?

5. The interquartile is the term used to describe the middle 50%. This is the data between the upper and lower quartiles. What is the age range of Presidents in the interquartile?

6. Analyze the results of your investigation and draw at least three conclusions.

5/11 Choice 4 Myers

Oval Office Analysis



For this exercise, use the data on the Ages of US Presidents

1. Find the mean, median, mode, and range of the ages.

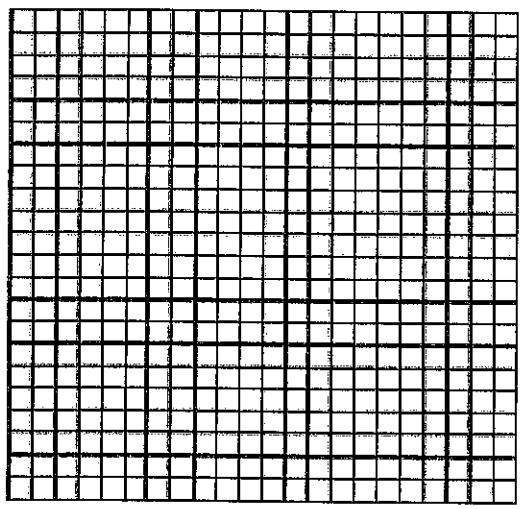
	Mean	Median	Mode	Range
Age of Presidents				

2. Draw a stem-and-leaf plot for the data.

3. Using the below interval for the age of the presidents at their inauguration (*x*-axis), tally the number of presidents falling into each group -- these are the frequencies (*y*-axis).

Age at Inauguration	40-44	45-49	50-54	55-59	60-64	65-70
Frequency						

4. Construct a histogram by making a bar graph – with no spaces between bars of the frequency for each interval as categorized in the table above. *It is important that the bars are touching.*



5. Compare the distribution of the data to the normal distribution. How well do they match up? What are the differences, if any?

Name _____ Period _____

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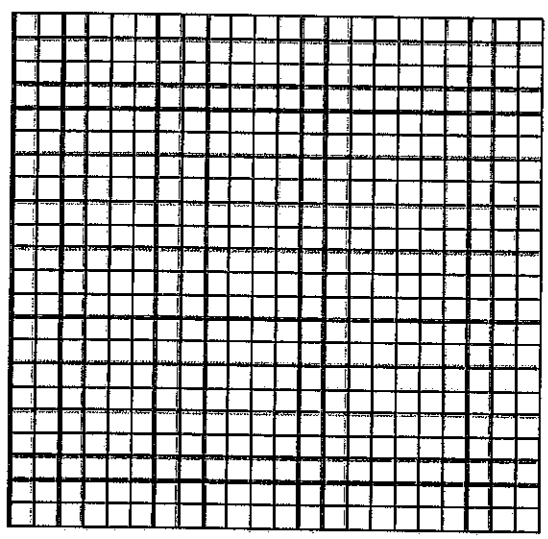
6. Using the data on the **age of death**, find the five number summaries, and construct a box-and-whiskers plot.

7. Using the below interval for the age of the presidents at their death(*x*-axis), tally the number of presidents falling into each group -- these are the frequencies (*y*-axis).

Age at Death	40-49	50-59	60-69	70-79	80-89	90-99
Frequency						

8. Construct a histogram of the frequency for each rating as categorized in the table above.



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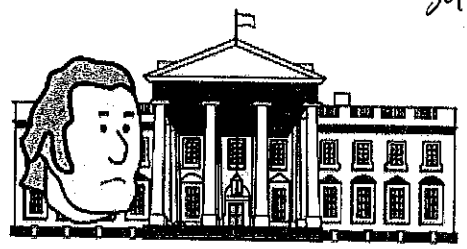
Presidential Inquiry



Inquiring minds may ask . . .

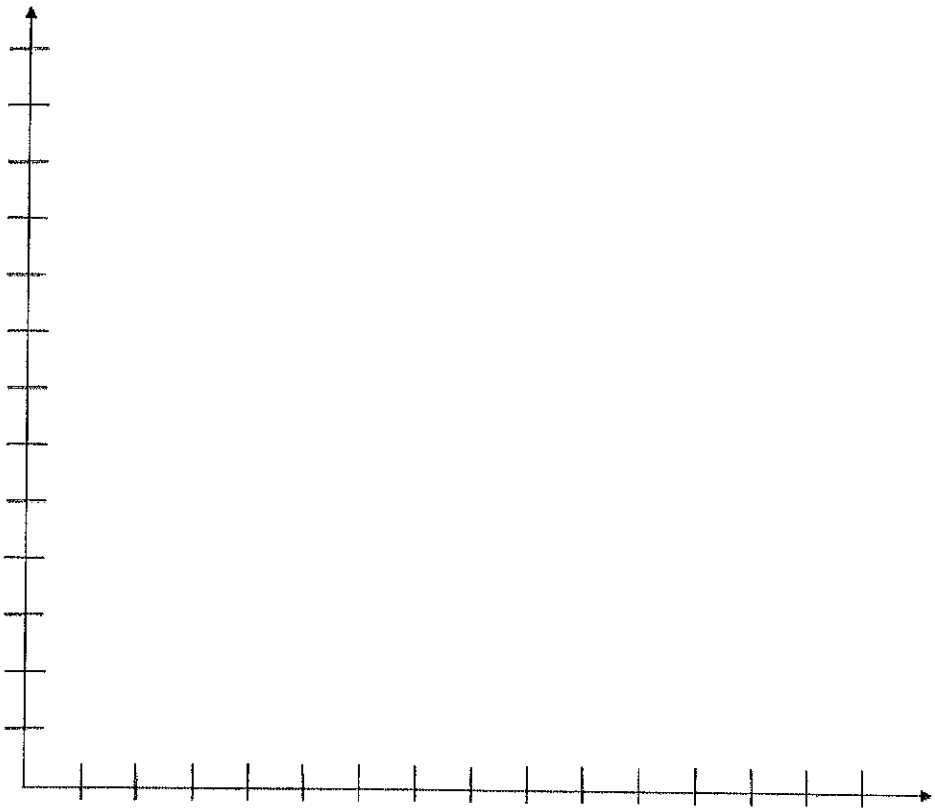
"Do US Presidents with the most children live longer after they have been inaugurated?"

Name _____

In this activity, you will use the "US President Data" and the notion of correlation of bivariate data to determine if a relationship exists between the age of Presidents' number of children and their longevity after inauguration. Recall that data variables can have strong correlation, weak correlation, or no correlation. Before the data can be analyzed, you must first determine which data to use and what you need to do with the data in order to begin answering the question. The questions below will get you thinking on the right track.

1. What variables are you looking at?

2. Make a scatterplot and label your axes. *Recall that the dependent variable goes on the y-axis and the Independent variable goes on the x-axis.*



5|11 Choices Myers

Evaluation Questions

Please give me a couple of sentences on each of these questions.

1. How can we help the math program at Oakland High School help you, the students?

2. What would you as the student like to see done with the math program?

3. In the math class that you have signed up for next year, what would you like to see done differently than what was done this year?

4. In the math class that you have signed up for next year, what would you like to see done the same as this year?

5. What do you think could make me a better teacher?

6. How can I make the concepts that you learn in my class improve your everyday adult life?

7. What math class are you planning to take next year? What career are you wanting to do after you get out of school?