MATH FINAL

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FLATTEN THE CURVE ESSAY

IN ALL THREE VIDEOS I LEARNED THE DIFFERENCES BETWEEN LINEAR GRAPHS AND EXPONENTIAL GRAPHS. I ALSO LEARNED WHAT " FLATTEN THE CURVE" MEANS. LASTLY I LEARNED HOW MATH AND SCIENCE CAN WORK TOGETHER TO FIND A STRATEGY OF FLATTENING THE CURVE BY DOING SOCIAL DISTANCING.

A LINEAR GRAPH HAS A SLOPE OF ONE AND BEGINS AT THE ORIGIN OF THE GRAPH IS A DIRECT PROPORTION. A LINEAR GRAPH WILL SHOW CONSISTENT GROWTH. A EXPONENTIAL GRAPH IS A STRICTLY INCREASING OR DECREASING CURVE THAT HAS A HORIZONTAL ASYMPTOTE. A EXPONENTIAL GRAPH SHOWS QUICKER GROWTH THAN LINEAR GRAPH.

FLATTEN THE CURVE FOR THE CORONAVIRUS MEANS TO STAGGER THE NUMBER OF NEW CASES OVER A LONG PERIOD OF TIME, SO THAT PEOPLE HAVE BETTER ACCESS TO CARE. BASICALLY BY SOCIAL DISTANCING, IT WILL CAUSE THE NUMBER OF CORONAVIRUS CASES TO GO DOWN, THEN THE PEOPLE WHO NEED HELP WILL GET THE HELP THEY NEED. THE NUMBER OF NEW CASES AND DEATH RATE REDUCES WHEN WE WEAR OUR MASKS AND DO SOCIAL DISTANCING.

YES IT MAY BE HARD AT FIRST TO PRACTICE SOCIAL DISTANCING BUT AT THE END OF THE IT WILL HELP MILLIONS OF PEOPLE WHO DON'T HAVE STRONG IMMUNE SYSTEMS SAFE.

STATE DNA ANALYSIS

CORONA VIRUS CASES

1. LOOK AT THE USA MAP, NOTICE THE KEY BELOW AND THE DISTINCTIONS OF THE DIFFERENT COLORS.

(THE LIGHTER YELLOWISH COLOR VS. THE DARKER BURNT ORANGE COLOR).

GENERAL OVERVIEW

EACH STATE IS GIVEN A COLOR BASED ON THE CURRENT NUMBER OF CONFIRMED CASES. AS OF RIGHT NOW, THE

LIGHTER THE COLOR, THE NUMBER OF CASES. THE COLOR IS DARKENED AS THE NUMBER OF CONFIRMED CASES

ARE HIGHER. IT IS IMPORTANT TO POINT OUT THAT THESE COLORS WILL CHANGE BASED ON THE DIRECTION OF

THE TOTAL NUMBER OF CONFIRMED CASES. FOR EXAMPLE, MONTANA HAS A LIGHTER YELLOW COLOR BECAUSE

OF A VERY LOW NUMBER OF CONFIRMED CASES, WHILE NEW YORK HAS A DARKER BURNT ORANGE COLOR

SIGNIFYING A VERY HIGH NUMBER OF CONFIRMED CASES.

PICK 5 DIFFERENT STATES, STATE THEIR COLOR AND EXPLAIN THE MATH THAT WAS USED TO MAKE THAT

STATE THAT PARTICULAR COLOR.

STATES WERE CATEGORIZED IN SIX DIFFERENT COLORS REPRESENTING RANGES OF CASES. FOR EXAMPLE, A STATE

WITH LESS THAN 595 CONFIRMED CASES IS CLASSIFIED AS YELLOW, WHILE A CASE WITH MORE THAN 50867 IS

CLASSIFIED AS DARKER BURNT ORANGE.

I am selecting the following states:

states	Color(lighter yellow to darker brunt orange)	Reason for the color
New York	Darker brunt orange	358,844 cases
Alaska	Light yellow	479 cases
Kentucky	Darker brunt yellow	8,571 cases
Arizona	Orange	16,339 cases
Connecticut	Dark orange	40,468 cases

2. Let's compare New York State to Wyoming. The data reports cases per 100K - this means number of cases per 100,000 people living in the state.

To arrive to the number of cases per 100K (x), the following proportion was used;

x/100000 = number of cases in a state/population of the state.

NYS cases per 100K = 1836.3   Wyoming cases per 100K = 145

I was curious and actually used real numbers to compute the number of cases per 100k; it worked. X/100000 = 358844/19540000, after cross multiplying, this gave me x = 1836.46. The little difference was cause by the approximated population of New York.

Now that you have taken a closer look at the break down of the Covid19 cases across the USA, can you use your math knowledge of Proportional Relationships and data to make some general conclusions about the seriousness of this spread of the disease?   Many decisions have been made by our political leaders based on DATA. What conclusions can you make regarding the shutdown of most of our daily places…… stores, churches, schools, businesses….etc.

Be specific with your evidence to support your conclusions. Does it matter which state you live in in regards to all this?   (This answer should be a short essay- more than 1 sentence!)

I am in total agreement with the decision to shut down certain locations with high density of people. As pointed out earlier, these colors represent the situation of each state. What also need to be considered is the direction of the rate of infections and the level of testing. Yellow today may become orange in a very short time. At this moment, bases on these numbers, it would be better to live to live in Arkansas thank the New York. However, if we consider the fact that New York's rates are going down and Arkansas's in the other direction, the future may be brighter here with just a little more quarantines and social distancing.

FACE MASK PRODUCTION

- STEP 1➔CONVERT 3 YARDS INTO INCHES

- 1 YARD= 36 INCHES

- 3 YARDS = 36X3= 108 INCHES

- STEP2➔ COMPUTE THE AREA OF RECTANGULAR PIECE OF A MASK
  - SMALL RECTANGLE =9X8= 72 SQ INCHES

- STEP3 ➔ COMPUTE THE QUOTIENTS OF THE SIDES OF BIG RECTANGLE TO SMALL RECTANGLE
  - 54 INCHES/ 9 INCHES = 6
  - 108 INCHES/ 8 INCHES = 13.5 (WE WILL JUST USE 13)

- THE NUMBER OF SMALL RECTANGLES IS 6 X 13 = 78

Question 2

0	2	4	6
0	30	60	90

2a)
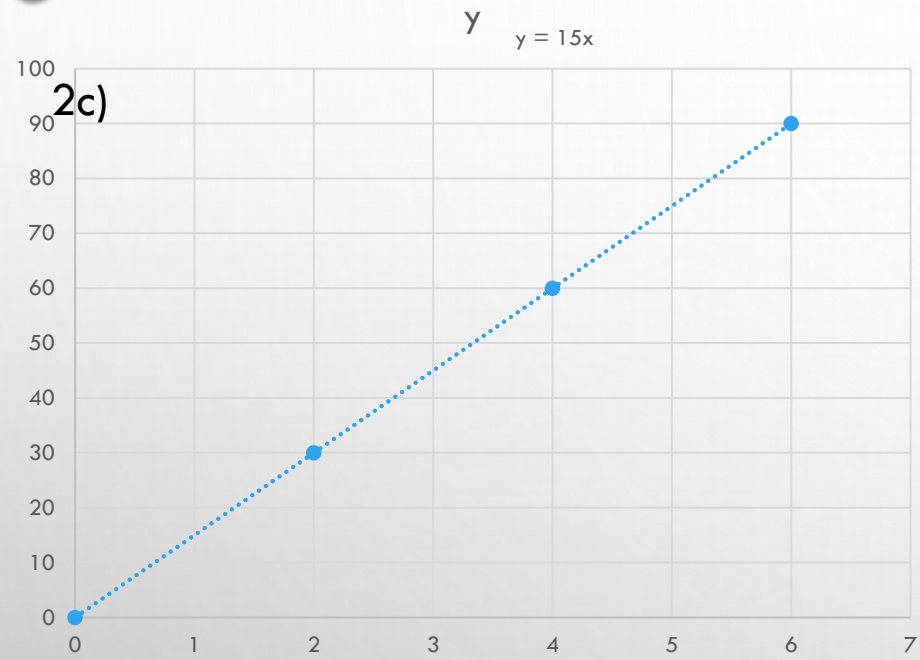M= y_2-y_1= 30-0 = 15
X_2-x_1= 2-0 = 0
Production rate is 15 masks per day.
2b
Yes there is an increase of 30 masks every 2 days or 15 masks each day

2c)

y   y = 15x

2d) y= mx + b here b= 0 and m= 15

Y= 15x

2e) In 36 days

Y= 15(36) = 540 masks

FLATTEN THE CURVES DATA GRAPHS

1. LOOK AT THE FIRST GRAPH – RED BAR GRAPH – "NY CORONAVIRUS TESTS AND POSITIVES" - YOU CAN CLICK ON THE DIFFERENT VIEWS ALONG THE TOP OF THE GRAPH

TAKE A LOOK AT THE BARS AND COUNTS FOR "NEW POSITIVES". WHAT CONCLUSIONS CAN YOU MAKE FROM THE WAY THE BARS ARE DRAWN? EXPLAIN GIVING SPECIFICS ABOUT THE DATA DISTRIBUTION AND THE DESIGN OF THE GRAPH.

ANSWER: BASED ON THE NY CORONA TEST AND POSITIVES, IT IS SHOWING THAT THE DAILY NUMBER OF NEW POSITIVES IS DECREASING AS TIME IS GOING FORWARD. THIS IS A SKEW TO THE RIGHT DISTRIBUTION.

2. SCROLL DOWN TO BLUE BAR GRAPH – "NY CORONAVIRUS HOSPITALIZATIONS" CLICK ON THE DROP DOWN – GO TO "NEWLY HOSPITALIZED" COMPARE THE WEEKS AT THE END OF MARCH TO THE WEEKS AT THE BEGINNING OF MAY. WHAT DO YOU NOTICE?

ANSWER: LOOKING AT THE NEWLY HOSPITALIZED BAR GRAPH, IT SHOW THAT THE NUMBER OF DAILY HOSPITALIZED WAS HIGHEST AT THE END OF MARCH(MORE THAN 3000 PER DAY) IN BEGINNING MAY, THE NUMBER OF NEWLY HOSPITALIZED DROPPED BELOW 1000 PER DAY, THIS IS LESS THAN A THIRD OF THE DAILY NUMBER IN END MARCH.

Now have a look at the drop down "Total Hospitalizations" are the
graphs the same, different ….. explain?
Answer: Looking at the total hospitalized Bar graph, the distribution still skewed to the right.
The number of people in hospitals is decreasing as time is moving forward. However, the top of this graph is about two weeks behind the newly hospitalized highest point. This is because mostly hospitalized were piling up on top of people who were already hospitalized.
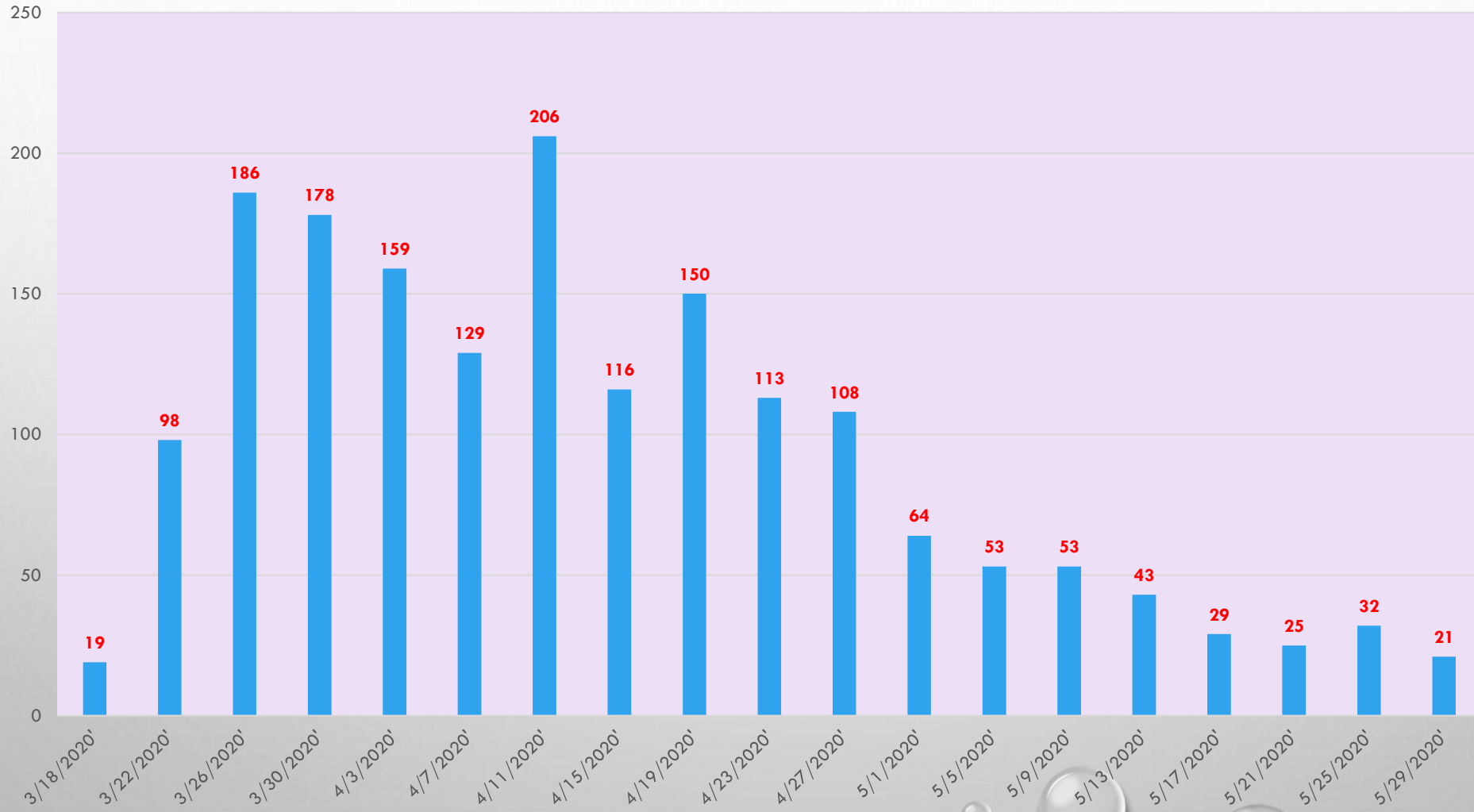
The below charts are the dates and number of new positive cases (averaged for the cluster of sequential days) for Westchester County and The City of Yonkers - Use these data charts to make 2 Bar Graphs. One for Westchester and one for Yonkers.

Westchester: New Positive Corona Cases
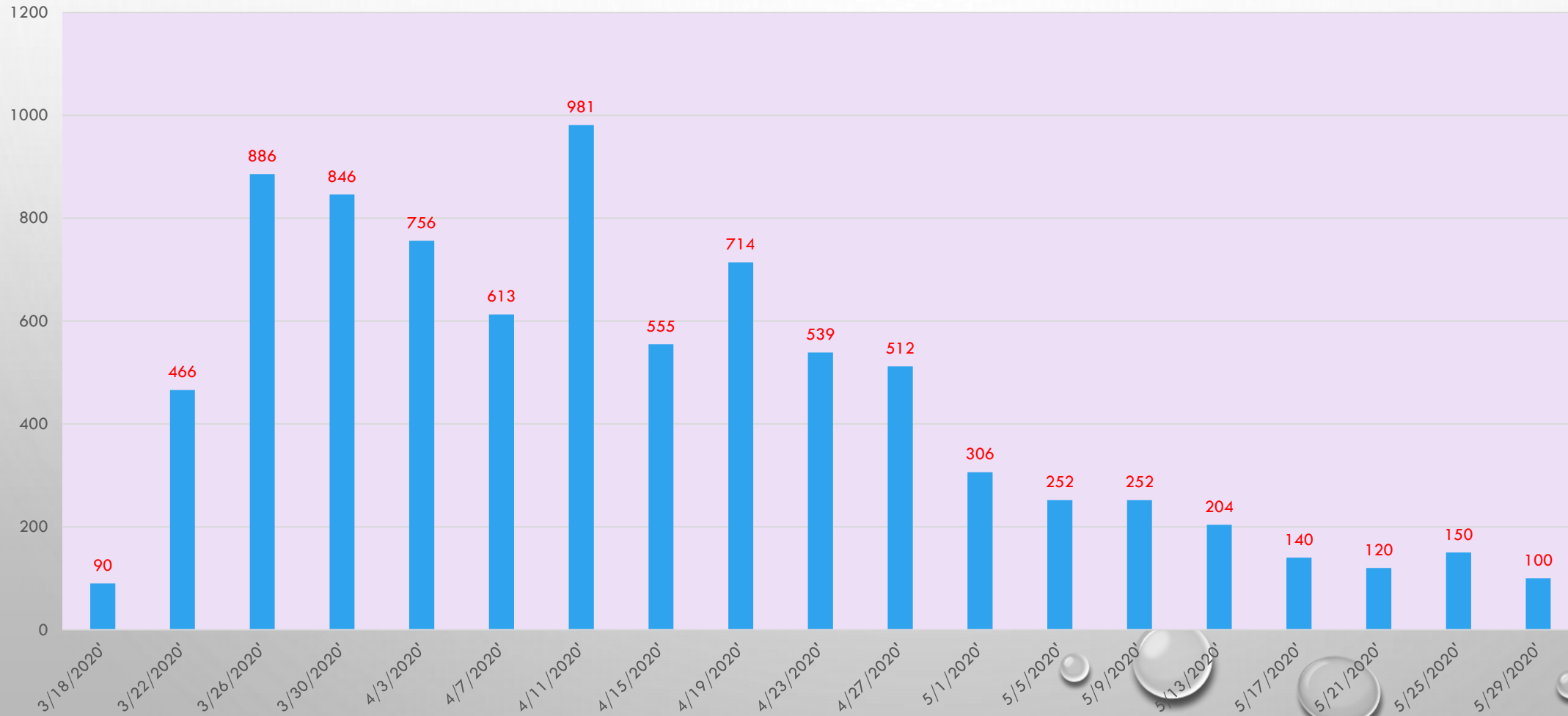
Yonkers: New Positive Corona Cases

CONCOLUSION

From the project I learned many different things about "Flatten the Curve". Flatten the Curve for the coronavirus means to stagger the number of new cases over a long period of time, so that people have better access to care. Better care is directly link to chance of survival once effect of the deadly virus suppress abilities of the human body to fight. Now every time I watch the news I won't be confused when they say Flatten the Curve; I will understand exactly what they are talking about. Another thing I learned is that the Coronavirus is the there is another relationship between variables called exponential. My algebra course is currently limited to linear models (constant rate). Exponential model means constant ratio. An exponential relationship shows quicker growth than a linear graph. "Flattening the curve" was mostly achieved, I believe, by social distancing. This limit the ability for the virus to spread at a greater rate. Social distancing helped to bend the contamination curve, from being exponentially positive to exponentially negative; Algebra two will help me to make more sense of this.