The Beauty of Play's

Gerrymandering Exercise

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As part of our US history this year, we did a short block on the US Constitution. Listening to the book that I had chosen for the spine of the Block, Fault Lines in the Constitution, they had a chapter that talked about drawing district lines and gerrymandering. I thought it would be a good idea to do an exercise on gerrymandering to give a better understanding. It also inadvertently provided quite a bit of math practice on ratios and percents. What follows is the exercise that we did along with the video explaining our results.

Just in case anyone wants to repeat it, I've also offered a PDF below with the template that we used. I do want to note, that the demographics that I've made on this 'map' are completely devised by my imagination. It does not represent any given place or any particular population.

What we did for this exercise was to come up with 12 districts three different times on the same map with different goals each time. The rules for coming out with the districts were that they had to be 6 to 10 blocks each and can take you contiguous. It wasn't always a rule that you had to be contiguous for drawing districts, but for this exercise in order for it to be doable, we needed to have the blocks in the same area.

The three goals were to establish the districts at random for the first exercise, in a way that gave accurate representation based on ethnic population for the second exercise, and for the third exercise we wanted gerrymandering in such a way that the Democratic party always won the election.

In order to be able to compare our election results with the general population, we first had to find the ratio in percent of each ethnic group and political party within the population of the 8 x 8 grid. I provided the totals for each of these, and she provided the fraction, or ratio of the part to the whole, as well as the percent of each ethnic group. This gave us an opportunity to use our fractional equivalencies, that we have memorized, and to calculate those that we do not.

In the first exercise where she chose the district at random, this provided mostly away for us to understand what we were doing in general, and to understand the calculations of the total based upon the districts. After the

districts were chosen, we went through district by district and determined, what majority would be for ethnic group and for political party. After determining that for each of the districts, we then determined the totals of each ethnic group and political party that were the majority in each of the districts. For instance, we went through for the Republican party and counted every district where the Republican Party represented the majority of the people within that district. From here, we calculated the ratios and precents, and then compare them to the overall totals of the population for the entire map.

We did this again, making an effort to show accurate representation of the egos groups within our map. She was able to do this pretty well, but you will see in the video that the political party representation. We did this exercise again with the goal of gerrymandering in such a way that the democratic party would always win the elections. She was able to do this without much difficulty, but you will see in doing so excuse both representation of the party, and the representation of the ethnic groups.

Below is the grid that I used for this exercise that you are welcome to download if you want to do this yourself. You can also, make your own grid fairly easy. This wasn't too complicated for me to do.

D B	D W	D W	R W	R W	R B	D L	R L
R B	R B	D B	D W	R W	R W	R L	D L
D B	D B	R B	R W	D W	R L	R W	D W
D A	R A	D A	D W	R J	D J	D A	R J
R A	R A	R J	D J	D J	R J	D J	D J
R W	D A	R W	R W	D J	R W	R W	R W
D W	D A	D W	D W	R W	D W	D W	R W
R W	D B	D W	D W	D B	D W	D W	D W
D W	D B	D W	D B	R W	R L	D W	D W
D B	R W	R B	R B	D W	D L	R W	R L
R W	R B	R B	D W	D L	D W	D W	R W
R B	D W	R W	D W	D W	R W	R W	R W

	DEMOCRAT	REPUBLICAN
WHITE	27	24
LATINO	4	5
BLACK	9	9
ASIAN	5	3
JEWISH	6	4

TOTAL	96
DISTRICTS	12 DISTRICTS
EACH DISTRICT	6-10 BLOCKS

Population of the Map

Group	Total	Fraction/Ratio	Percent
White			
Latino			
Black			
Asian			
Jewish			
Democrat			
Republican			

By Districts – Exercise 1 _____

Group	Total	Fraction/Ratio	Percent
White			
Latino			
Black			
Asian			
Jewish			
Democrat			
Republican			

By Districts – Exercise 2 _____

Group	Total	Fraction/Ratio	Percent
White			
Latino			
Black			
Asian			
Jewish			
Democrat			
Republican			

By Districts – Exercise 3 _____

Group	Total	Fraction/Ratio	Percent
White			
Latino			
Black			
Asian			
Jewish			
Democrat			
Republican			