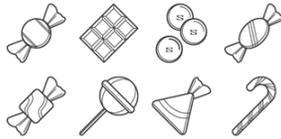


Name _____

Mathematics of Voting



EXPLORE: Candy Simulation

Method One: Popular Vote

Directions:

- Individually write down your favorite kind of candy.
- Calculate what candy is the most popular based on which one got the most votes

Results:

- Is this method fair? Why or why not?
- Do you think it is the best way to decide the class' favorite candy?

Method Two: Representative Vote

Directions:

- Your teacher will divide you into groups
- Each group will have a leader which is the person whose birthday comes first in the year.
- Without consulting the rest of the group, the leader will decide which of four candy choices the group's favorite is.

Results:

- Is this method fair? Why or why not?
- Do you think it is the best way to decide the class' favorite candy?

Method Three: Modified Electoral College

Directions:

- You will stay in the same group.
- This time the leader of the group will consult the rest of the group to decide on a favorite candy choice.
- Each group, regardless of size, gets one vote.

Name _____

Results:

- Is this method fair? Why or why not?
- Do you think it is the best way to decide the class' favorite candy?

Method Four: Electoral College

- You will decide how many votes your group gets out of a total of 100 votes based on the percent of the class your group represents (use proportions below to guide you):

$$\frac{\text{Number of people in group}}{\text{Total number of students in class}} = \frac{\text{Number of votes}}{100}$$

Explain: Electoral College

- How many total electoral college votes are there? _____
- How many votes does each state begin with? _____
(hint: equal to the number of senators from each state)

Elaborate: Looking More Closely at the Electoral College Votes

Directions: Use the table with the population of each state and the total number of electoral votes, the proportions provided, and a calculator to answer the following questions.

1. What percent of the total population is California? _____

$$\frac{37,341,989 \text{ population of CA}}{309,183,463 \text{ total population of US}} = \frac{\text{percent of population}}{100}$$

2. What percent of the electoral votes does it get? _____

$$\frac{55 \text{ electoral votes in CA}}{538 \text{ total electoral votes}} = \frac{\text{percent of votes}}{100}$$

3. What percent of the total population is Wyoming? _____

$$\frac{568,300 \text{ population of WY}}{309,183,463 \text{ total population of US}} = \frac{\text{percent of population}}{100}$$

Name _____

4. What percent of the electoral votes does it get? _____

$$\frac{\mathbf{3} \text{ electoral votes in WY}}{\mathbf{538} \text{ total electoral votes}} = \frac{\text{percent of votes}}{100}$$

5. Is the votes in CA and WY proportional to its population? _____

ELABORATE PART TWO: Considering only the 435 votes based on population

6. What percent of the population is Texas? _____

$$\frac{\mathbf{25,268,418} \text{ population of TX}}{\mathbf{309,183,463} \text{ total population of US}} = \frac{\text{percent of population}}{100}$$

7. What percent of the electoral votes does it get?

$$\frac{\mathbf{36} \text{ electoral votes in TX based on population}}{\mathbf{435} \text{ total electoral votes based on population}} = \frac{\text{percent of votes}}{100}$$

8. What do you notice if we only consider the 435 votes based on population?

9. Looking at equations: If y represents the total number of electoral votes and x represents the population of the state, this equation will tell us the total number of electoral votes:

$$Y = \frac{438}{309,183,463} x + 2$$

10. What is the slope in this equation?

11. What is the y-intercept?

12. Is the relationship proportional or non-proportional?

13. What would the graph look like?

EVALUATE: if you were able to decide how the president of the United States was elected, would you keep our system the way it is or make changes to make it a better system? Explain what you would change and justify why you would make that change.