Appendix: Sample Assignments

Sample Project from Math 102—Creating an Infographic

Background and project description: In class, we compared the different tax plans for several of the 2016 presidential candidates. While it is interesting to compare federal income tax amounts for the different candidates, there are several other important issues that are currently being debated, as well as issues that are commonly debated and discussed during election years. For your project, you will create an infographic about one of the issues below. This infographic is NOT meant to be an infographic for a particular candidate or political party; you do not need to mention any presidential candidates at all. What you're trying to address is "What is [*the topic*] about and why should we care about [*the topic*]." To do this, you will need to do some research and find some real data that support the topic of your infographic. You will need to provide the sources of your data. Note that Google and Wikipedia are excellent starting places, but neither is considered a valid source! Your infographic can be made on Piktochart, with a different computer or Internet program, or by hand.

Possible topics for your infographic:
●**Granting Citizenship to undocumented immigrants** (an infographic on this topic may be either in support or opposed to providing a path to citizenship for undocumented immigrants in the United States. Or it may be a "balanced" infographic that shows both sides of the story).
●**Immigration** (an infographic on this topic should either be in favor of increasing the number of refugees allowed into the U.S., or decreasing/stopping the amount of refugees allowed into the U.S.).
●**Foreign Military Policy** (an infographic on this topic should be either in favor or against the United States committing ground troops to combat Daesh, or in favor or opposed to carpet bombing areas associated with Daesh, or in favor or against the U.S. having a permanent military presence in the Middle East.).
●**Climate Change** (an infographic on this topic should show how climate change is real and why it's important to consider in this election).
●**Gun Control** (an infographic on this topic may either be in favor of stricter gun regulations, or in favor of no additional gun regulations).
●**Mass Incarceration** (an infographic on this topic may include data on groups that are imprisoned at higher rates than other groups, such as the mentally disabled and specific minority groups. It should include information about what political policies began some of these issues).

●**Healthcare/Medicaid.**
●**Social Security.**
●**Legalization of Marijuana** (an infographic on this topic can be either pro-legalization or anti-legalization).
●**Campaign Finance Reform; Citizens United vs. FEC.**
●**Voter Suppression Laws.**
●**Gerrymandering.**
●**Other** (if you have an idea of a topic you would like to make an infographic about that is not on this list, please get approval. Topics about certain topics within education, women's services, fracking, military policies/benefits, etc. are very likely to be approved!).

Additional project instructions
●There are many infographics on similar topics that already exist. You may not just copy one from online – that is plagiarism and is absolutely not allowed. We will do an image search online to check for plagiarism. Plagiarism will result in a 0 on the project, as well as an academic dishonesty form filled out with the university.
●Your infographic must include at least 8 pieces of quantitative information (information involving numbers, such as percent, percent increase, percent decrease, total numbers of people affected, etc.) Some of this quantitative information can be used on its own, and some of the quantitative information should be included in graphs (see below).
●Your infographic must include at least 3 graphs that you make. You may not use already existing graphs that you find on the Internet! The graphs must enhance your infographic, not just be included because they are a necessary part of the project. They can be made with Piktochart, Excel, by hand, or another computer program.
●Under each graph, label the source of the data (the original source of the numbers you used). Excel is not the source; neither is Google or Wikipedia. The source is the organization that gathered the data. Note that Wikipedia lists the original source at the bottom of the article.
●This infographic is meant to be clear it should be readable and understandable by the typical college freshman or high school senior.

Sample Recitation Group Assignment—Gerrymandering

Today, you will research U.S. Congressional districts to identify gerrymandering as it is happening right now. You will work with your group to:

1. Find and present evidence of gerrymandering.
2. Determine the political influences at work.
3. Analyze the effects of the gerrymandering on voters and politics.
4. Compare your district with the shortest split-line alternative in that state.
5. Evaluate the societal impact of gerrymandering.

Your work will be split into two phases: a research phase and a presentation phase.

- *Research Phase*. Form a group of 3 or 4. Learn about your district using the Research Phase prompts below.
- *Presentation Phase*. While you are researching, your instructor will assign you to a presentation group. You will share your from your Research Phase with your Presentation Group.

Research Phase (remember to record your data sources!):

1. What evidence is there that gerrymandering has happened in your district? What does your district look like and how is that relevant geographically? What are the voting demographics? What are voting demographics of surrounding districts? How are those demographics related and how is that evidence of gerrymandering?
2. What political influences were at work for this gerrymandering? Who proposed and approved the district boundary? Who is advantaged or disadvantaged?
3. What are the effects of gerrymandering in your district? Who is winning elections? How are voters affected? Who may be misrepresented because of the gerrymandering? Who may have privileged representation?
4. Find the district map for the state that your district is in: http://rangevoting.org/SplitLR.html. If the congressional districts in your state were determined using the split-line algorithm, how would the citizens of your district be represented? How would things change?
5. What is the societal impact of the gerrymandering in your district? Why is your district important to the entire country? Which representatives have been

elected by your district? What were their positions on important issues? What committees did they serve on in Congress? Do you think any laws would be different if the split-line algorithm was used?

Presentation Phase: Find your group based the assignment given to you by your instructor. Complete the following summary based on your classmate's presentations.

Gerrymandered District:
Evidence of Gerrymandering:
Effects on voters and politics:
Shortest split-line comparison:
Societal Impact:

Gerrymandered District:
Evidence of Gerrymandering:
Effects on voters and politics:
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Gerrymandered District:
Evidence of Gerrymandering:
Effects on voters and politics:
Shortest split-line comparison:
Societal Impact:

Sample Recitation Group Assignment—Government Spending and Taxes

1. What is the total size of the U.S. Federal Budget?
2. How much money is that per household?
3. Finding the amount "per household" is unusual, but it is useful in this situation because we might be trying to figure out how much money the government spends on doing things for people. What is another "per" unit that might make sense here? Compare and contrast your alternative to "per household." *Example: "per cat" there are 75 million cats, so that is $50000 per cat, which isn't very useful, because cats don't pay taxes.*
4. What is the median household income in the United States?
5. In terms of percentages, compare the spending per household to the income per household.
6. Write one sentence about why this is a lot of money.
7. Write one sentence about why this is not a lot of money.
8. Identify 3 programs that are funded by entitlement spending and find the tax burden, per household, of those programs. *Example: Social security costs $870B, so it costs $6214 per household.*

Program	Total Cost	Cost per Household

9. Write an asterisk (*) next to the program that you think is the most important.
10. Write a dollar sign ($) next to the program that you think is the best value ("bang for our buck")
11. Are the asterisk and dollar sign next to the same program? If they are, write a two sentence argument about why you think this program needs funding. If they are not, write a two sentence explanation about why the more important program is not the best value.
12. Which of the following statements is TRUE (Circle all that apply)?
    a. Entitlement spending was the largest portion of the 2014 U.S. Federal budget due to increased spending on the military.
    b. Entitlement spending is mandated by law, so entitlement spending cannot be changed by the Budget Committee.
    c. Entitlement spending can be changed through changes in laws, such as the law that guarantees social security payments to individuals that meet certain criteria.
    d. Entitlement spending is less than one-third of the federal budget.
13. Give one example of how entitlement spending from one of the programs that you identified in #8 could be changed. *Example: Social security spending can be changed by increasing the age of eligibility for retirement benefits, which would decrease the cost because fewer people would be eligible.*

    Taxes
14. A common misconception about taxes is illustrated in the vignette below:
    Fox: Squirrel, can you believe it, my salary went up by $500 this year, to $37,500, which I am very proud of. But can you believe this: now I have to pay more taxes! If I would have known that, I would have refused the raise!

    Squirrel: Wait a minute, you're telling me that you made more money, but you paid more taxes. That seems obvious, right?

    Fox: Well yes, obviously, if I make more money I should pay more taxes. But I'm saying that I would have had more money after taxes if I wouldn't have gotten a raise. They told me that I'm in the new tax bracket, so now I'm paying 25%, when I only used to pay 15%. The cutoff is $37,450 apparently.

    First, we should try to figure out what Fox is talking about.
    a. Fox said that he made $37,000 before his raise and he claims he was taxed at 15%. If this was true, how much would Fox pay in taxes and how much would he take home?

b. Fox said that he made $37,500 after his raise and he claims he was taxed at 25%. If this was true, how much would Fox pay in taxes and how much would he take home? Based on this calculation, is Fox right about this outrageous situation?

Luckily, Fox has a slight misunderstanding about taxes.

Squirrel: Oh, I see. Fox, I can tell that you have not taken MTH 102 at Michigan State. Well, let me explain. According to the IRS: "It's important to realize that moving into a higher tax bracket does not mean that all of your income will be taxed at a higher rate. Instead, only the money that you earn within a particular tax bracket is subject to that particular tax rate."

Fox: I don't get it. You said they are taxing me more…

Squirrel: Yes, but only on the extra money you make over the tax bracket threshold! So, only the last $50 of your income is taxed at 25%.

The current U.S. income tax structure for those filing taxes individually is shown below:

Taxable Income	Tax Rate
$0 to $9,225	10%
$9,226 to $37,450	$922.50 plus 15% of the amount over $9,225
$37,451 to $90,750	$5,156.25 plus 25% of the amount over $37,450
$90,751 to $189,300	$18,481.25 plus 28% of the amount over $90,750
$189,301 to $411,500	$46,075.25 plus 33% of the amount over $189,300
$411,501 to $413,200	$119,401.25 plus 35% of the amount over $411,500
$413,201 or more	$119,996.25 plus 39.6% of the amount over $413,200

c. Show why someone who files earnings of $9000 will pay $90 in taxes.
d. Show why someone who files earnings of $37,000 will pay $5088.75 in taxes.
e. Show why someone who files earnings of $37,500 will pay $5168.75 in taxes.
f. Why does someone who makes $37,451 to $90,750 pay $5156.25 in taxes automatically?
g. Write one sentence to explain Fox's misconception about taxes.

15. You may have heard that Warren Buffet, an incredibly rich investor (he owns a majority stake in Coca-Cola, among many other companies), pays a lower taxes than his employees. We don't know Warren Buffet's tax information, but the following situation is an illustration of what he might mean.
    a. If Warren Buffet makes $10M per year and is taxed at 30%, how much does he pay in taxes?
    b. If the 2nd-in-command makes $1M per year and is taxed at 50%, how much is paid in taxes?
    c. Based on the calculations above, what does Warren Buffet mean when he says that he pays "lower taxes"?
16. Part of the reason that wealthy individuals pay lower tax rates than other individuals is due to the fact that much of the income of wealthy individuals is through corporate gains. What are corporate gains?
17. For this example, let's assume that the income tax rate is 40% and the corporate tax rate is 15%.
    a. Sparty is a doctor and earns money through a salary, which is taxed at the income tax rate. If Sparty earns $100,000, how much does he pay in taxes?
    b. Bucky is an investor who earns a salary of $60,000 and receives a bonus of $40,000 because of stock dividends (which are taxe as corporate gains). How much does Bucky pay in taxes?
18. Watch the following video about wealth inequality:
    https://www.youtube.com/watch?v=QPKKQnijnsM
    a. Write 3 surprising things you learned from the video:
    b. Write a short reflection about what you have learned about what it means to be part of "the 1%".