Section 1.1 – Intro to Statistics

MDM4U
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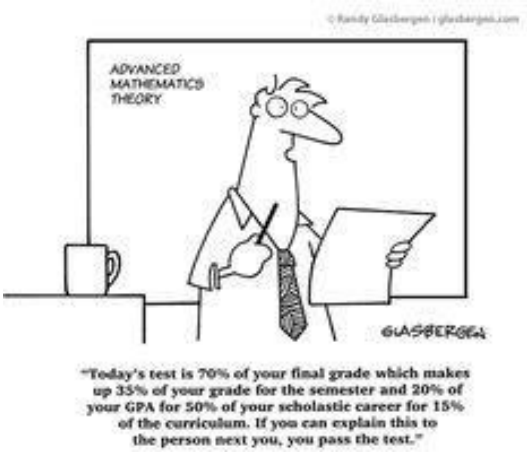
Part 1: Course Outline



"Today's test is 70% of your final grade which makes up 35% of your grade for the semester and 20% of your GPA for 50% of your scholastic career for 15% of the curriculum. If you can explain this to the person next you, you pass the test."

Mark Breakdown:

- 5 Unit Tests – 35%
- 4 In Class Assignments – 15%
- 5 In Class Workbook Problem Sets – 5%
- Games Fair Project (LFD) – 5%
- Culminating Project – 10%
- Final Exam – 30%

Formative Assessments:

- There will be a quiz each unit
- At the end of each unit on the day of the test you will be required to submit a package that includes all completed lessons and homework

Expectations:

- Come to class ON TIME each day with unit package, graphing calculator, and pencil
- Usage of cell phones during class is not permitted
- Ask for permission to leave the class (no disappearing)
- Participate in lessons and activities
- Complete your homework every night
- Ask questions! Extra help is available Tuesday and Thursday at lunch in this room.

Mrs. Mutner liked to go over a few of her rules on the first day of school.

Part 2: Intro to Statistics

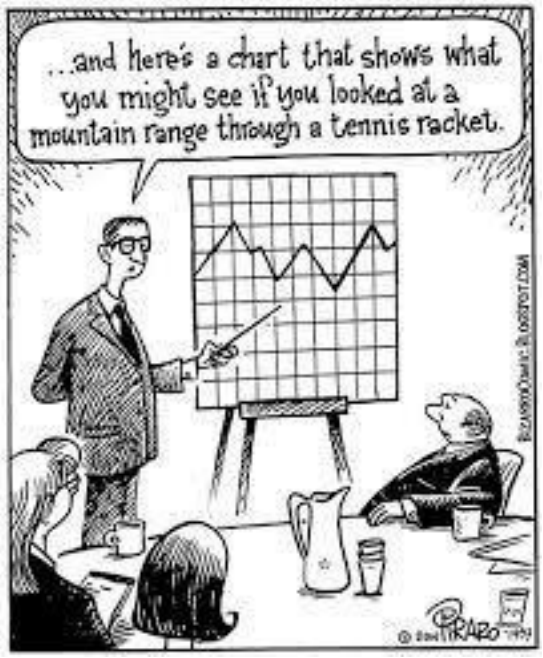
_____are any collection of numbers, characters, images, or other items that provide information about something.

Statistics is the _____of _____. The volume of data available to us is overwhelming. For example, astronomers work with data on tens of millions of galaxies. The checkout scanners at Walmart's 10 000 stores in 27 countries record hundreds of millions of transactions every week. Professional sports teams collect extraordinary amounts of performance data during games. In all these cases, the data are trying to tell us a story. To hear what the data are saying, we need to help them speak by _____, _____, _____, and _____. That is _____. Statistical methods enable us to look at information from a small collection of people or items and make _____about a larger collection of people or items. For instance, if we wish to estimate the proportion of people who will have a severe reaction to a flu shot without giving the shot to everyone who wants it, statistics provides appropriate methods.

To get you in a more 'statistical' mindset, read the following two stories:

1: If you have a Facebook account, you have probably noticed that the ads you see online tend to match your interests and activities. Coincidence? Hardly. According to the Wall Street Journal, much of your personal information has probably been sold to marketing or tracking companies. Why should Facebook give you a free account and let you upload as much as you want to its site? Because your data are valuable! Using your Facebook profile, a company might build a profile of your interests and activities. From Facebook's point of view, your data are a potential gold mine.

2: How dangerous is texting while driving? Researchers at the University of Utah tested drivers on simulators that could present emergency situations. They compared reaction times of sober drivers, drunk drivers, and texting drivers. The texting drivers actually responded more slowly and were more dangerous than those who were above the legal limit for alcohol.



Part 3: M&M's Activity

I. Collecting the Data: Scoop out a sample of M&M's. Count the total number of M&M's in your sample. You will need exactly 25, so if you need more, randomly choose a few more to add to your sample. If you have too many, you must randomly choose M&M's to discard. *DO THIS WITH YOUR EYES CLOSED! NO PEEKING!*
Calculate the percentage of BLUE candies in your sample: _____

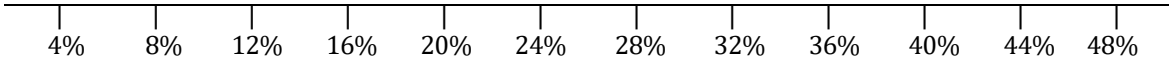
Record the class data using the following chart:

II. Organizing the Data: Organize the data in a meaningful way.

Title: _____

III. Displaying the Data: Display the data using a dot plot.

Title: _____



IV. Analyzing the Data:
Describe some general features of the data.

What would you consider a "normal" or "typical" percentage of blue M&M's? Why?

Does our data reveal the true percentage of blue M&M's? If so, what is the true percentage? If not, what DOES it reveal about the true percentage?

Part 4: Explanation of Culminating Project

1. You will pose a significant problem whose solution would require the organization and analysis of a large amount of data.

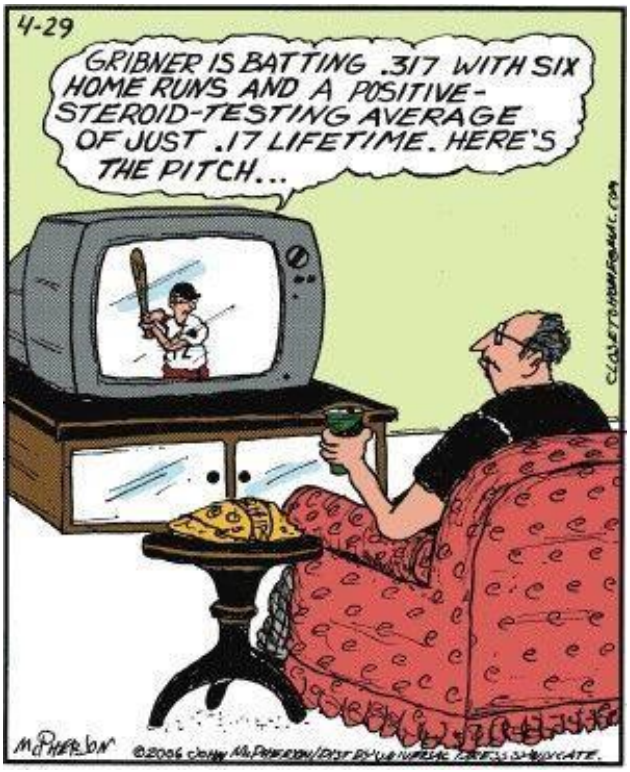
2. You will apply the skills you learn in the course to design and carry out a study of the problem.

3. Compile a clear, well-organized, and fully justified report of the investigation and its findings.

4. Present your findings to the class in a seminar.

https://www.youtube.com/watch?v=HNlgISa9Giw

http://www.youtube.com/watch?v=jbkSRLYSojo



Homework Task: Explore the statistics Canada website and find at least one data table for a subject that you find interesting. Transport this data table in to a spreadsheet program (excel, numbers, etc.). Organize the data table so it is easily readable. Submit electronically to our class EDSBY page.

http://www.statcan.gc.ca/start-debut-eng.html