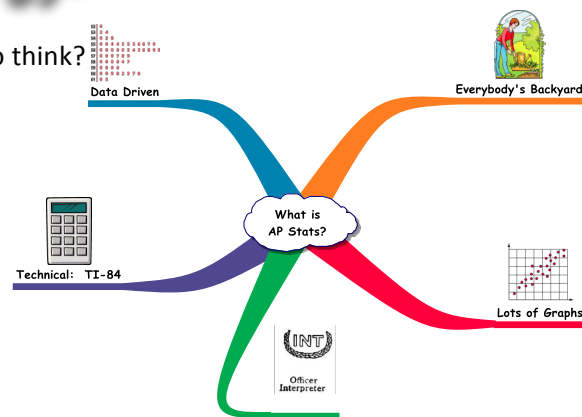


Our theme is:

Down With Demagogy!

Have you ever listened to a controversial debate and wondered what to think?

- How does Frito-Lay assure quality?
- What medicines work?
- What are the best colleges?
- What's the best car?
- How do polls work?
- Does our local landfill protect our environment?
- What jobs will our society need to fill in 10 years?
- Data mining; Etc., etc.



There are many difficult issues and it is often hard to know who or what to believe about them. This is where statistics comes in. **Statistics** is the study of forming opinions and making decisions based on data. It is my hope that our careful attention and experience with real-world statistics will help us to better understand statements we hear and read as well as make informed inferences. It is expected that all students in this class will take the AP Test held in May. More importantly, it is expected that you will learn to think more carefully and deeply about the decisions you make.

The class will include:

- Calculator and Computer investigations where we use technical skills with our knowledge of statistics to analyze and discover information
- Beyond-the-text written investigations and data collection experiences
- Student discussions about controversial topics
- Student writing where we must clearly and concisely explain statistics in context

Resources*Main Text:*

Bock, David E., Velleman, Paul F., De Veaux, Richard D., Stats; Modeling the World. 2nd ed. New York: Pearson; Addison Wesley, 2007

Supplements:

- **5 Steps to A 5**, we will buy and use this book for review
- Teacher Generated Materials
- Videos. Decisions Through Data, 1992; COMAP.
- Yates, Daniel S., David S. Moore, Daren S. Starnes. The Practice of Statistics. 3rd ed. New York: W. H. Freeman & Co., 2008.
- Heller, Joyce, et al. Multiple Choice & Free Response Questions in Preparation for the AP Statistics Exam. Brooklyn, NY: D & S Marketing, 2002.
- Rossman, Alan J., Beth L. Chance, J. Barr Von Oehsen. Workshop Statistics Discovery with Data and the Graphing Calculator. 2nd ed. Emeryville, CA: Key College Publishing, 2002.
- Scheaffer, Richard L., et al. Activity Based Statistics. 2nd ed. Emeryville, CA: Key College Publishing, 2004.
- Previously Released AP Multiple Choice and Free Response Questions
- Materials received at the AP Summer Institute and off of AP Central

Technology:

TI-84 calculators

Google Sites Surveys

Microsoft Excel

Class Projects& Investigations

Project Title	Description
Race and The Death Penalty	Written analysis of data comparing the sentences of people convicted of murder and their races over a period of several years. (Philadelphia data)
Dollars for Students	Descriptive analysis comparing spending for education by eastern and western states.
Auto Safety	Comparison of safety ratings of small, mid-sized, and large cars.
Normal Model Worksheet	Class accumulation of data from dice and TI-Calculator random number generators to demonstrate the Normal Curve and 68-95-99.7 Rule
Correlation Survey Project	Student data collection from two quantitative survey questions, $n > 30$, and analysis utilizing scatterplot, residual plot, LSRL, and interpretations of r , r^2 , and slope of regression line.
Wording Survey Questions	Class data collection comparing questions that ask for the same information but are worded differently.
Experiment Poster Project	In groups of 3-4, students analyze a scenario, formulate an experimental question, design an experiment, and present proposal to class with a poster.
Game Day	Students in pairs make up a game utilizing chance devices (dice, spinners, coins etc.), entice other students to play using "Funny Money", as a class we invite other students in our gaming room. Winners based on collection of "money" and analysis of own game comparing theoretical probabilities with actual data collected playing the game.
Life after High School?	Students create a confidence interval based on given data and explain in context Type I and II errors.
Test of Significance for Sample Means	In pairs, students find an article stating a sample mean. They collect data to compare with the stated mean and run a t-test to confirm/challenge the article's stated mean.
Can You Teach?	In pairs, students perform non-sample t-test with a matching pair design to compare before and after results of their "teaching".
Culminating Project (after AP Exam)	Class survey creation and administration. Comparing past year responses utilizing Chi-Squared tests, correlation, and t-tests. Google sites and personal survey administration.

Part I: Exploring and Understanding Data

Day	Description	Assignment
1 2	<u>Stats Starts Here</u> Text Handout: read opening chapter topics Class Survey Syllabus; Books; Calculators; CD Video 1: What is Statistics Class EXs including p 13,14 How old is Mr. Morgan? Calculators	<ul style="list-style-type: none"> • Get Chapter Outlines https://sites.google.com/site/morganmathematics/home • Bring 4 AAA batteries for Calculators Class Survey • Read & Complete Outline for Chap 2 <ul style="list-style-type: none"> ○ Attach: 2/3-9 (skip 6); 11-17
3 4	Quiz 2 (25 pts) Displaying & Describing Categorical Data Class Survey Data: Gender and Political View CW Smoking and Education	<ul style="list-style-type: none"> • Read & Complete Outline Chap 3 • 2/24; 3/5-10; 13-18; 26, 29, 33, 36
5 6	Quiz 3 (25 pts) <u>Displaying Quantitative Data</u> Video 2 & 3 Exs Calculators: p. 54, 55 (use Survey #2 data)	<ul style="list-style-type: none"> • Read & Complete Outline Chap 4 • 4/3-11, 17-22, 33-38
7 8	Quiz 4 (25 pts) <u>Describing Distributions Numerically</u> Video 5&6 Ex: 5-Number Summary & Calculator Explore CW: Mooseburgers vs McTofu	<ul style="list-style-type: none"> • Read & Complete Outline Chap 5 • 5/3-11 odds, 12-48 (X3)
9 10 11	Quiz 5 (25 pts) <u>The Standard Deviation as Ruler and the Normal Model</u> Video 7 & 8 Normal Model W/S example using dice Exs Quiz 6 (25 pts) Review	<ul style="list-style-type: none"> • Read & Complete Outline Chap 6 • 6/1-9 odds, 10-28 (X3), 29-40, 46,47 • Review Day1: Normal W/S; 131/1-10 • Review Day2: 131/11-29 O & Practice Test
Test Part 1 (100 pts)		

Part II: Exploring Relationships Between Variables

Day	Description	Assignment
1 2	Debrief Test Part 1 Rank & When handed in quiz <u>Scatterplots, Association, and Correlation</u> Videos 11, 13 Find r by hand (p 149 for when handed in test) Investigate: Hts&Wts Exs: Walter Payton, , Wt vs. MPG Exs 7/1,2,6,10,18,25,26,28,30 Outline: Rope Tie; What Effects R	<ul style="list-style-type: none"> • Read Chap 7 • Outline; 7/3,4,5-9, 11-13, 15,16, 19,20, 23, 29, 31, 33
3 4 5 6	Quiz 7 (25 pts) <u>Linear Regression</u> Video 9 & 12 Practice With Correlation; 800m Times W/S Distance and Ticket Price (Groups)	<ul style="list-style-type: none"> • Read Chap 8 • Outline; 8/1-10, 15, 16, 21-24, 27-29, 37, 40, 41

	Outline PPT NC Practice & Running the Mile Quiz "3.2a" Test on Regression (50 pts)	
7	<u>Regression Wisdom</u>	<ul style="list-style-type: none"> • Read Chap 9 • Correlation Survey Project (50 pts) • Outline; 9/1-6, 9-12, 22, 23, 26, 28
8	W/S: Graduating Classes; The Wandering Point	
9	W/S: World Record Times & CorRegPre Quiz 9 (25 pts)	
10	<u>Re-Expressing Data</u>	<ul style="list-style-type: none"> • Read Chap 10 • Outline; 10/1-6, 10, 11, 25-29 • Review: 245/1-43 o
11		
12	Quiz 10 (25 pts)	
13	Review	
Test Parts 1,2 (120 pts)		

Part III: Gathering Data		
1	<u>Understanding Randomness</u>	<ul style="list-style-type: none"> • Read Chap 11 • Outline; 11/1-10, 19, 22, 30,
2	The Great Morgano P. 257 "Randomness" Cereal ex: p 260-1 Dice Dorm Lottery Tossing a coin; Is it fair?	
3	Quiz 11 (25 pts)	<ul style="list-style-type: none"> • Read Chap 12 • Outline; 12/1-3, 11,12, 15, 21-23, 26, 31, 32
4	<u>Sample Surveys</u> Wording Questions Ex Videos 17 & 18	
5	Quiz 12 (25 pts)	<ul style="list-style-type: none"> • Read Chap 13 • Outline; 13/1, 5, 9,13,17, 21, 22, 27,28, 32, 36, 40, 43 • Experiment Poster Project
6	<u>Experiments</u>	
7	Videos 15 & 16	
8	Review	
Test Parts 1,2,3 (140 pts)		

Part IV: Randomness and Probability		
1	<u>From Randomness to Probability</u>	<ul style="list-style-type: none"> • Read Chap 14 • Outline; 14/1-9, 12, 14, 16, 21, 22-24, 27, 35
2		
3	Quiz 14 (25 pts)	<ul style="list-style-type: none"> • Read Chap 15 • Outline; 15/1-7, 9-27 odds, 31-34, 39
4	Probability Rules!	
	PREPARE FOR Fall Semester FINAL Practice Q14,15	<ul style="list-style-type: none"> • Practice Game Day
5	Quiz 15 (25 pts)	<ul style="list-style-type: none"> • Read Chap 16 • Outline; 1-7,15,16,19,23-26,31,32,35-7 • Conditional Probability W/S
6	<u>Random Variables</u>	
7	Quiz 16 (25 pts)	<ul style="list-style-type: none"> • Read Chap 17 • Outline; 1-7,9,12,14,18,22,27,33,35 • Game Day Project
8	<u>Probability Models</u>	
9	Quiz 17 (25 pts)	
	Review	
Test Parts 1,2,3,4 (160 pts)		

Part V: From the Data at Hand to the World at Large		
1	<u>Sampling Distribution Models</u>	<ul style="list-style-type: none"> • Read Chap 18

2		<ul style="list-style-type: none"> Outline; 1-10, 12-42 X3
3	Quiz 18 (25 pts)	<ul style="list-style-type: none"> Read Chap 19
4	<u>Confidence Intervals for Proportions</u>	<ul style="list-style-type: none"> Outline; 1-7, 8-38 X3
5	Quiz 19 (25 pts)	<ul style="list-style-type: none"> Read Chap 20
6	<u>Testing Hypotheses about Proportions</u>	<ul style="list-style-type: none"> Outline; 1-10, 13-28 X3
7	Quiz 20 (25 pts)	<ul style="list-style-type: none"> Read Chap 21
8	<u>More About Tests</u>	<ul style="list-style-type: none"> Outline; 1-9, 12-27 X3
	Review: 405/5, 10, 26 (class quiz)	<ul style="list-style-type: none"> 20/14-29 X3 21/10,11,17,23,28 Life after High School?
9	Quiz 21 (25 pts)	<ul style="list-style-type: none"> Read Chap 22
10	<u>Comparing Two Proportions</u>	<ul style="list-style-type: none"> Outline; 1-9, 11-29 X3
11	Quiz 22 (25 pts)	
	Review	
Test Parts 1,2,3,4,5 (180 pts)		

Part VI: Learning About the World		
1	<u>Inferences about Means</u>	<ul style="list-style-type: none"> Read Chap 23
2		<ul style="list-style-type: none"> Outline; 1-8, 12-33 x3 Test of Significance for Sample Means
3	Quiz 23 (25 pts)	<ul style="list-style-type: none"> Read Chap 24
4	<u>Comparing Means</u> Video 20,21	<ul style="list-style-type: none"> Outline; 1-6, 9-18 x3, 19,21,25,32,34
5	Quiz 24 (25 pts)	<ul style="list-style-type: none"> Read Chap 25
6	<u>Paired Samples and Blocks</u>	<ul style="list-style-type: none"> Outline; 1-8, 10-28 x3
7	Quiz 25 (25 pts)	<ul style="list-style-type: none"> Can You Teach?
	Review	
Test Parts 1,2,3,4,5,6 (200pts)		

Part VII: Inference When Variables Are Related		
1	<u>Comparing Counts</u>	<ul style="list-style-type: none"> Read Chap 26
2		<ul style="list-style-type: none"> Outline; TBA
3	Quiz 26 (25 pts)	<ul style="list-style-type: none"> Read Chap 27
4	<u>Inferences for Regression</u>	<ul style="list-style-type: none"> Outline; TBA
5	Quiz 27 (25 pts)	
Test Parts 1,2,3,4,5,6,7 (220pts)		

Practice AP Exams		
		<ul style="list-style-type: none"> TBA

After the Exam		
		<ul style="list-style-type: none"> Culminating Project

AP Statistics Last Month 2014, Schedule

<u>Day</u>		<u>Assignments</u>
Tues, 4/1		U6 Test Ch 26
Thu 4/3		Ch 26 Library: Barrons' Practice Test
Mon 4/7		Ch 27
Wed	EXAM, MC	
Thu 4/10, Room S-22 3:15p	EXAM, FRQ	
Fri		Ch 27
Apr 14-18	SPRING BREAK	5 STEPS: 1. Diagnostic Exam 2. Chap 4: Tips 3. Chap 5 & 6
Tue 4/22		5 STEPS: Ch 7 & 8
Th 4/24		5 STEPS: Ch 9 & 10
Mon 4/28		5 STEPS: Ch 11 & 12
Wed 4/30	EXAM, MC	
Thu 5/1 Room S-22 3:15p	EXAM, FRQ	
Fri 5/2		5 STEPS: Ch 13 & 14
Fri 5/9	AP EXAM, 12:00 noon	

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Th 4/24		5 STEPS: Ch 9 & 10
Mon 4/28		5 STEPS: Ch 11 & 12
Wed 4/30	EXAM, MC	
Thu 5/1 Room S-22 3:15p	EXAM, FRQ	
Fri 5/2		5 STEPS: Ch 13 & 14
Fri 5/9	AP EXAM, 12:00 noon	