AP Stats Summer Assignments

You will complete the reading for the first unit of study outlined below. Before starting the bookwork, you should read all of chapter 1. Do not rush the reading; it is one of the foundational aspects of this class. The reading is not dry, but witty and interesting. You will be required to take detailed notes (Cornell) on the chapter readings. This includes all key terms, formulas, displays, and some key examples. Organize these well; they will be useful when we review for the AP exam.

In addition to the reading and working notes, you will complete the bookwork, quizzes, and activities below.

I've scheduled two and only two days where I will be available at Citrus Hill in my classroom (407) for help with any of these materials: June 16th 2-3:30 and July 6th 5-6pm. These are optional, but provide little excuses as to not completing the summer work. All work is due the first day of the school year. Few exceptions tolerated.

Enjoy your summer, and balance your time well.

Chapter 1 Exploring Data A, B, C (20-30% of AP Exam)

  A. Constructing and interpreting graphical displays of distributions of univariate data (dotplot, stemplot, histogram, cumulative frequency plot)
  B. Summarizing distributions of univariate data
     Measuring **center**: Median, Mean
     Measuring **spread/variation**: range, interquartile range (IQR), standard deviation
     Identifying **shape**: normal, symmetric, skewed left/right
  C. Comparing Distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots)

Day	Topics	Objectives: Students will be able to…	Homework
	Chapter 1 Introduction; Activity: *Hiring discrimination*: This activity models the components of the statistical problem solving process: research question, data analysis, probability model, and inference	• Identify the individuals and variables in a set of data. • Classify variables as categorical or quantitative. Identify units of measurement for a quantitative variable.	1, 3, 5, 7, 8
	1.1 Bar Graphs and Pie Charts, Graphs: Good and Bad	• Make a bar graph of the distribution of a categorical variable or, in general, to compare related quantities. • Recognize when a pie chart can and cannot be used. • Identify what makes some graphs deceptive.	11, 13, 15, 17
	1.1 Two-Way Tables and	• From a two-way table of counts, answer questions involving marginal and conditional distributions.	19, 21, 23, 25, 27-32

	Marginal Distributions, Relationships Between Categorical Variables: Conditional Distributions, Organizing a Statistical Problem, *Technology: Analyzing Two-Way Tables with Minitab*	• Describe the relationship between two categorical variables in context by comparing the appropriate conditional distributions. • Construct bar graphs to display the relationship between two categorical variables.	
	1.2 Dotplots, Describing Shape, Comparing Distributions, Stemplots	• Make a dotplot or stemplot to display small sets of data. • Describe the overall pattern (shape, center, spread) of a distribution and identify any major departures from the pattern (like outliers). • Identify the shape of a distribution from a dotplot, stemplot, or histogram as roughly symmetric or skewed. Identify the number of modes.	37, 39, 41, 43, 45, 47
	1.2 Histograms, Using Histograms Wisely, *Technology: Making Histograms on the Calculator* *Quiz #1*	• Make a histogram with a reasonable choice of classes. • Identify the shape of a distribution from a dotplot, stemplot, or histogram as roughly symmetric or skewed. Identify the number of modes. • Interpret histograms.	53, 55, 57, 59, 60, 69-74
	Activity: Life Expectancies in Various Countries (Wes #1)	• Histogram • Skewness • Resistant /Non-resistant Stats • Effect of an outlier (removed)	
	1.3 Measuring Center: Mean and Median, Comparing Mean and Median, Measuring Spread: IQR, Identifying Outliers	• Calculate and interpret measures of center (mean, median) in context • Calculate and interpret measures of spread (*IQR*) in context • Identify outliers using the $1.5 \times IQR$ rule.	79, 81, 83, 87, 89
	Activity: How long should the daily lunch break be? (Wes # 3)	• Mean, Median, Mode • Median minimizes absolute value differences • Mean minimizes the sum of the squared differences • Mean is best measure of total error because it is unique (vertex of a parabola)	
	1.3 Five Number Summary and Boxplots, Measuring Spread: Standard Deviation,	• Make a boxplot. • Calculate and interpret measures of spread (standard deviation) • Select appropriate measures of center and spread • Use appropriate graphs and numerical summaries to	91, 93, 95, 97, 103, 105, 107-110

Choosing Measures of Center and Spread, *Technology: Making Boxplots on the Calculator, Computing Numerical Summaries with Minitab and the Calculator* *Quiz #2*	compare distributions of quantitative variables.		
Activity: Baseball Salaries – Do you get what you paid for? (Wes # 2)	- Parallel boxplots on a graphing calculator - Compare/Contrast/Interpret distributions visually (boxplots) - Outliers visually and via calculations - Summarize similarities and differences between distributions - How the removal of an outlier affects the resistant vs. non-resistant statistics		
AP Released Test Questions *Quiz # 3*	http://apcentral.collegeboard.com/apc/members/exam/ exam_information/8357.html	2014 1 2013 6 2011 B 1	
Chapter 1 Review		Chapter 1 Review Exercises	
Chapter 1 Test	Study group sign off sheet due Homework Due	First Friday of the school year will be our first exam	