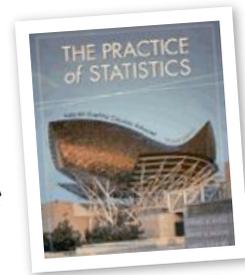# AP Statistics Chapter 5: Producing Data

"Not everything that can be counted counts; and not everything that counts can be counted" ~ George Gallup {Gallup Polls}

Tentative Lesson Guide					
Date		**Stats**	**Lesson**	**Assignment**	**Done**
Thu	11/9	5.1	Sampling Methods	Rd 269-283 **Do 1-12**	
Fri	11/10	5.1	Sampling and Bias	Rd 284-285 **Do 19-29**	
Mon	11/13	5.2	Experimental Design	Rd 290-297 **Do 31-39**	
Tues	11/14	5.2	Matched Pairs and Blocking	Rd 299-303 **Do 43-48**	
Wed	11/15	Rev	Review 5.1-5.2	Rd 305-306 **Do 49-53, 56, 58**	
Thu	11/16	**Quiz**	**Quiz 5.1-5.2**	Read "Damned Lies Ch 2"	
Fri	11/17	5.3	Simulating Experiments	Rd 309-319 **Do 59-63, 74-80**	
Mon	11/20	Rev	Review	**Do 82-83, 86**	
Tues	11/21	**Exam**	**Exam Chapter 5**	**Online Quiz Due**	
Wed - Fri		*Thanksgiving Break*			

Note:

The purpose of this guide is to help you organize your studies for this chapter.
The schedule and assignments may change slightly.

Keep your homework organized and refer to this when you turn in your assignments at the end of the chapter.

Class Website:

Be sure to log on to the class website for notes, worksheets, links to our text companion site, etc.

http://web.mac.com/statsmonkey

Don't forget to take your online quiz!. Be sure to enter my email address correctly!

http://bcs.whfreeman.com/yates2e

My email address is:

jmmolesky@isd194.k12.mn.us

Chapter 5 Objectives and Skills:

These are the expectations for this chapter. You should be able to answer these questions and perform these tasks accurately and thoroughly. Although this is not an exhaustive review sheet, it gives a good idea of the "big picture" skills that you should have after completing this chapter. The more thoroughly and accurately you can complete these tasks, the better your preparation.

SAMPLING

☐ Identify the population in a sampling situation.

☐ Recognize bias due to voluntary response samples and other inferior sampling methods.

☐ Use a table of random digits to select a simple random sample (SRS) from a population.

☐ Recognize the presence of undercoverage and nonresponse as sources of error in a sample survey. Recognize the effect of the wording of questions on the response.

☐ Use random digits to select a stratified random sample from a population when the strata are identified.

☐ Use a table of random digits or the TI 83 to carry out the random assignment of subjects to groups in a completely randomized experiment.

☐ Recognize the placebo effect. Recognize when double-blinding should be used.

☐ Recognize a block design and when it would be appropriate. Know when a matched pairs design would be appropriate and how to design a matched pairs experiment.

☐ Explain why a randomized comparative experiment can give good evidence for cause-and-effect relationships.

EXPERIMENTS

☐ Recognize whether a study is an observational study or an experiment.

☐ Recognize bias due to confounding of explanatory variables with lurking variables in either an observational study or an experiment. Describe how confounding occurs, in context of the situation.

☐ Identify the factors (explanatory variables), treatments, response variables, and experimental units or subjects in an experiment.

☐ Outline the design of a completely randomized experiment using a diagram. The diagram in a specific case should show the sizes of the groups, the specific treatments, and the response variable.

SIMULATIONS

☐ Recognize when random phenomena can be investigated by means of a carefully designed simulation.

☐ Use the following steps to construct and run a simulation:
   a. State the problem or describe the experiment.
   b. State the assumptions.
   c. Assign digits to represent a single trial.
   d. Simulate many trials.
   e. Calculate relative frequencies and state your conclusions.

☐ Use a random number table, the TI-83/89 to conduct simulations.