Classical Magnet School

Course Statistics

	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May/ June
Themes	Exploring Data		Sampling and Experimentation	Anticipating Patterns (using probability and simulation)			Statistical Inference		
Essential Questions	1. What is the best way to present information? 2. How should inferences be justified?		How do we recognize and reduce bias?	1. What makes for a good model? 2. Can events from the past be used to predict the future?			1. How do we best make a comparison/contrast? 2. How do we know if something has truly changed?		
Academic Standards, Student Expectations and Major Skills	1. Display data using a variety of graphing methods. 2. Describe distributions by shape, center and spread. 3. Calculate summary statistics such as mean, median and standard deviation.	1. Use scatter plots to investigate a possible correlation between two variables. 2. Use residual plots to analyze a mathematical model.	1. Take random samples using a variety of methods. 2. Design experiments to make inferences about cause.	1. Use simulation to estimate probabilities. 2. Calculate probabilities of compound events. 3. Calculate conditional probabilities. 4. Determine whether or not two events are independent.	1. Use probability distributions to find expected value. 2. Find probabilities using the binomial distribution. 3. Find probabilities using the geometric distribution.	1. Generate sampling distributions. 2. Calculate summary statistics from sampling distributions.	1. Create confidence intervals and use them to estimate population parameters. 2. Perform one- and two-sample significance tests. 3. Use significance tests to make inferences about a population.	1. Use chi-square tests to compare more than two groups at once. 2. Make inferences about the slope of a regression line.	
Textbook Chapters	Ch 1: Statistical Reasoning Ch 2: Exploring Distributions	Ch 3: Relationships Between Quantitative Variables	Ch 4: Sample Surveys and Experiments	Ch 5: Probability Models	Ch 6: Probability Distributions	Ch 7: Sampling Distributions	Ch 8: Inference For Proportions Ch 9: Inference For Means	Ch 10: Chi-Square Tests Ch 11: Inference For Regression	
Coached Projects									
Seminars									