Wayland High School

Mathematics Department
AP STATISTICS
Curriculum Guide

Unit 1: Univariate Data
• To interpret graphical displays of data
• To summarize distributions, including normal
• To compare distributions
• To use boxplots, stem and leaf plots, dot plots and other univariate graphs

Unit 2: Bivariate Data
• To analyze patterns in scatterplots
• To analyze correlation, residuals and outliers
• To find the least-squares regression line
• To transform data to achieve linearity
• To analyze marginal and joint frequencies for two-way tables
• To analyze conditional relative frequency and association

Unit 3: Experimental Design
• To decide on a method of data collection: census, sample survey, experiment or observational study
• To conduct a well-designed survey
• To conduct a well-designed experiment
• To determine sources of bias and confounding variables
• To generalize the results of observational study

Unit 4: Probability
• To understand the concept of the "Law of Large Numbers"
• To apply rules of addition, multiplication and conditional probabilities
• To determine if events are independent
• To interpret a probability distribution

• To describe the properties of a normal distribution
• To use a normal distribution as a model for measurements
• To use a sampling distribution as a sample proportion
• To apply the Central Limit Theorem
• To conduct a simulation of sampling distributions

Unit 5: Statistical Inference
• To define a confidence interval
• To find the large sample confidence interval for a proportion
• To find the large sample confidence interval for a mean
• To find the large sample confidence interval for a difference between two proportions
• To establish null and alternative hypotheses
• To apply p-values, one- and two-sided tests-including t tests and matched pairs
• To determine Type I and Type II errors
• To apply large sample tests for a proportion
• To apply large sample tests for a mean
• To apply a Chi-square test to one- and two-way tables
• To apply t-distributions
• To draw inference for the slope of least-squares regression line
• To apply tests for inference about two populations