Unit	Lesson	Lesson Objectives
Data Analysis		
	Introduction to Statistics	
		Classify a variable as categorical, discrete quantitative, or continuous quantitative.
		Identify a variable from a set of data.
		Identify an individual from a set of data.
	Categorical Data Displays	
		Determine if a graphical display is appropriate for a given data set.
		Determine what makes a graph of categorical data deceptive.
		Identify a frequency table and a relative frequency table given data.
		Interpret a bar graph or pie chart.
	Relative Frequencies	
		Complete a two-way table, and calculate marginal and conditional distributions.
		Create conditional relative frequency distributions.
		Create marginal relative frequency distributions.
		Given a two-way table, calculate conditional relative frequency distributions.
		Given a two-way table, calculate marginal and joint relative frequency distributions.
		Interpret frequencies appropriately when given data from samples that differ considerably in sample size for two categorical variables.
	Comparing Two Categorical Variables	
		Compare distributions of categorical data using segmented or side-by-side bar graphs.
		Decide whether two categorical variables are associated using segmented or side-by-side bar graphs.
		Display three categorical variables in side-by-side bar graphs.
		Use appropriate phrasing in the depth and detail required by the College Board to compare and contrast categorical variables.
	Describing and Comparing Data with Dotplots and Stemplots	
		Compare two distributions using dotplots or stemplots.
		Identify and/or describe a dotplot.
		Identify and/or describe a stemplot.
	Describing and Comparing Data with Histograms	
		Compare two distributions using histograms.
		Identify the patterns, shape, and spread of a distribution using histograms.
		Relate measures of center to the shape of a distribution using histograms.
	Measures of Center and Location	
		Analyze the effect of extreme values on the value of the mean and median.
		Analyze the relationship between center and shape.
		Calculate measures of center, given a data set or a graphical display.
		Interpret the measures of center.

Unit	Lesson	Lesson Objectives
	Measures of Variability	
		Calculate the range, standard deviation, or interquartile range of a univariate data set.
		Compare the spread given graphical displays of two univariate data sets.
		Interpret the range, standard deviation, or interquartile range of a univariate data set.
		Use a graphing calculator to compute the numerical summary of a univariate data set.
	Boxplots and Outliers	
		Compare distributions presented in parallel boxplots.
		Create a boxplot using a graphing calculator.
		Identify if a univariate data set contains any outliers.
		Identify the percent and number of values lying in each portion of a boxplot.
		Represent univariate data using a boxplot.
The Normal Distribution		
	Calculating and Interpreting z-Scores	
		Calculate a data value given a z-score, standard deviation, and mean.
		Calculate a z-score.
		Compare performance using three or more z-scores.
		Compare performance using two or more z-scores.
		Interpret a z-score.
	Uniform Density Curves	
		Calculate probabilities using the appropriate area within a uniform density curve.
		Describe a density curve.
		Estimate the mean and median value of a density curve.
	Normal Distributions	
		Calculate probabilities using the empirical rule.
		Describe a Normal distribution using the empirical rule.
		Describe the properties of a Normal distribution.
	Finding Areas within a Normal Distribution	
		Estimate the proportion of values in a Normal distribution between two values using a Normal distribution table.
		Estimate the proportion of values in a Normal distribution for inclusive intervals of less than or equal to, greater than or equal to, or between and including values.
		Estimate the proportion of values in a Normal distribution to the left of a value or to the right of a value using a Normal distribution table.
		Estimate the proportion of values in a Normal distribution using a graphing calculator.
		Estimate the proportion of values in a standard Normal distribution using a graphing calculator.

Unit	Lesson	Lesson Objectives
	Finding Values from Probabilities	
		Determine the data-value, x, in a Normal distribution for a given percentile.
		Determine the value in a Normal distribution that bounds a given area, using a graphing calculator.
		Determine the z-score for a given probability.
Simple Linear Regression		
	The Relationship between Two Quantitative Variables	
		Create a scatterplot using a graphing calculator.
		Describe the direction, form, strength, and unusual observations given a scatterplot.
		Identify the explanatory and response variable.
		Represent two quantitative variables using a scatterplot.
	Correlation	
		Describe the effect of unusual observations on the correlation.
		Distinguish between correlation and causation.
		Interpret the correlation of a linear relationship between two quantitative variables.
	Making Predictions from a Least-Squares Regression Line	
		Interpret the slope and y-intercept of a linear model.
		Make a prediction using a linear model.
	Calculating the Least-Squares Regression Line	
		Compute a least-squares regression line and correlation using technology.
		Explain why the line that is the best fit for a linear relationship is called the least-squares regression line.
		Identify a least-squares regression line using computer output.
	Residuals	
		Assess linearity based upon a residual plot.
		Calculate residuals.
		Create a residual plot on the graphing calculator.
		Create a residual plot.
	R*-squared and *s	
		Describe the effect that influential points have on the least-squares regression line.
		Determine r^2 using a graphing calculator or computer output.
		Identify s.
		Interpret r^2 and s in context.
	Transforming to Achieve Linearity	
		Predict the response variable based upon the equation of a least-squares regression line that describes a transformed data set.
		Transform a nonlinear data set using powers, roots, or logarithms.
		Write the equation of a least-squares regression line that describes a transformed data set given computer output.

Unit	Lesson	Lesson Objectives
	Choosing the Best Model	
		Assess how well a model fits a given data set.
		Choose an appropriate model for a bivariate data set given regression output and residual plots.
		Make a prediction based on the computer output provided for various regression models.
Sampling and Experimentation		
	Introduction to Sampling Methods	
		Analyze a study to determine if bias is present and whether that bias leads to an overestimate or underestimate of the population parameter.
		Describe a population and sample given a description of a study.
		Identify whether a study utilized convenience sampling or voluntary response sampling.
	Simple Random Sample	
		Describe the process of simple random sampling.
		Explain the process of generating a simple random sample using a random number generator.
		Explain the process of generating a simple random sample using a table of random digits.
	Other Sampling Methods	
		Describe the process and/or advantages and disadvantages of cluster sampling.
		Describe the process and/or advantages and disadvantages of stratified random sampling.
		Describe the process and/or advantages and disadvantages of systematic random sampling.
		Distinguish between stratified random sampling, systematic random sampling, and cluster sampling.
	Considerations When Sampling	
		Describe the direction of the bias presented in a study.
		Describe the sampling problems of undercoverage, nonresponse, response, and question-wording bias.
		Identify whether a study is affected by undercoverage, nonresponse, response, or question-wording bias.
	Observational Studies and Experiments	
		Describe the effect of confounding.
		Distinguish between an observational study and an experiment.
		Identify the explanatory variable, response variable, treatments, experimental units/subjects, factors, and levels of an experimental design.
	Additional Principles of Experimental Design	
		Identify the benefits of using the principle of comparison within an experimental design.
		Identify the benefits of using the principle of control and replication within an experimental design.
		Identify the benefits of using the principle of random assignment within an experimental design.
		Identify the placebo effect, as well as the benefits of blindness, within an experimental design.
	How to Experiment Well	
		Describe the randomization step within an experimental design using a random number generator.
		Describe the randomization step within an experimental design using a table of random digits.
		Describe the randomization step within an experimental design using slips of paper.
		Identify the reason for randomization for a well-constructed experimental design.

Unit	Lesson	Lesson Objectives
	Experimental Designs	
		Describe the structure of a completely randomized design, including details about the randomization process.
		Describe the structure of a randomized block design, including details about the randomization process.
		Describe the structure of the matched pairs version of a randomized block design, including details about the randomization process.
	Scope of Inference	
		Describe the concept of sampling variability with regards to the size of the sample.
		Determine if the results of an experiment are statistically significant based upon simulated results.
		Determine the appropriate scope of inference for the study design used.
Probability		
	Introduction to Probability	
		Conduct a simulation using a graphing calculator.
		Describe how a simulation is used to imitate a random process.
		Describe the law of large numbers.
		Interpret probability as the long-run relative frequency of an event.
	Probability Rules	
		Apply the basic probability rules, which indicate that the probability of an event is a number between 0 and 1 and that the sum of the probabilities of all outcomes in the sample space is 1.
		Apply the complement rule and the addition rule for mutually exclusive events.
		Identify a probability model to describe a random process.
	Applying Probability Rules	
		Determine probabilities using a two-way table.
		Determine probabilities using a Venn diagram.
	Conditional Probabilities	
		Calculate a conditional probability.
		Determine if two events are independent.
		Interpret a conditional probability.
	The Multiplication Rule for Dependent Events	
		Calculate a probability using a tree diagram.
		Calculate a probability using the general multiplication rule.
		Use a tree diagram to determine the sample space.
	The Multiplication Rule for Independent Events	
		Determine if it is appropriate to use the multiplication rule for independent events, the addition rule for mutually exclusive events, or neither.
		Calculate a probability using the multiplication rule for independent events.
		Calculate the probability of "at least one” using the multiplication rule for independent events or other multi-step probabilities.

Unit	Lesson	Lesson Objectives
Random Variables		
	Introduction to Random Variables	
		Calculate the probability of an event given a probability distribution of a discrete random variable.
		Describe the shape of a probability distribution histogram of a discrete random variable.
		Identify a probability distribution histogram of a discrete random variable.
		Interpret the probability of an event given a probability distribution of a discrete random variable.
	Discrete Random Variables – Mean	
		Calculate the mean, median, and/or standard deviation of the probability distribution of a discrete random variable.
		Compare the shape, center, and/or variability given two probability distribution histograms.
		Interpret the standard deviation of the probability distribution of a discrete random variable.
	Combining Two Random Variables	
		Calculate a probability based upon the sum or difference of two or more random variables.
		Calculate the mean and standard deviation of a linear combination of random variables.
		Calculate the mean and standard deviation of the sum or difference of two or more random variables.
		Interpret the mean and standard deviation of the sum or difference of two or more random variables.
	Binomial Random Variables	
		Calculate the mean and standard deviation of a binomial random variable.
		Describe the shape, center, and/or variability of a probability histogram of a binomial random variable.
		Determine if a scenario describes a binomial setting.
	Binomial Probabilities	
		Approximate binomial probabilities using a Normal distribution.
		Calculate cumulative binomial probabilities using a graphing calculator.
		Calculate cumulative binomial probabilities using the binomial probability formula.
		Calculate the binomial probability $P(X = k)$ using the binomial probability formula.
		Calculate the binomial probability $P(X = k)$ using a graphing calculator.
	Geometric Random Variables	
		Calculate a geometric probability using a graphing calculator.
		Calculate a geometric probability using the geometric probability formula.
		Calculate the mean and standard deviation of a geometric random variable.
		Determine if a scenario describes a geometric setting.
	Simulations	
		Describe the simulation of a binomial probability distribution.
		Describe the simulation of a geometric probability distribution.

Unit	Lesson	Lesson Objectives
Sampling Distributions		
	Introduction to Sampling Distributions	
		Distinguish between the population distribution, sample distribution, and a sampling distribution of a statistic.
		Identify a sampling distribution.
		Identify the population, parameter, sample, and statistic given a scenario.
	Sampling Distributions – Center and Variability	
		Describe the variability of a sampling distribution as it relates to the size of the sample.
		Determine if a sample statistic is an unbiased estimator of the population parameter.
		Evaluate a claim about a population parameter based upon a sampling distribution of a statistic.
	Sampling Distribution of the Sample Proportion	
		Determine the shape, mean, and/or standard deviation of the sampling distribution of the difference in two sample proportions.
		Determine the shape, mean, and/or standard deviation of the sampling distribution of the sample proportion.
		Interpret the standard deviation of the sampling distribution of the sample proportion or the sampling distribution of the difference in two sample proportions.
	Calculating Probabilities for Sampling Distribution	
		Calculate a probability based upon the sampling distribution of $\hat{p}$.
		Calculate a probability based upon the sampling distribution of $\hat{p}_1 - \hat{p}_2$.
		Determine if there is convincing evidence against a claim based upon a calculated probability.
	Sampling Distribution of the Sample Mean	
		Describe the shape of the sampling distribution of the sample mean.
		Describe the shape, mean, and/or standard deviation of the sampling distribution of the difference in two sample means.
		Describe the shape, mean, and/or standard deviation of the sampling distribution of the sample mean.
	Using the Central Limit Theorem	
		Calculate probabilities given a non-Normal population, when appropriate, based upon the sampling distribution of the sample mean or difference in sample means.
		Calculate probabilities given a Normal population based upon the sampling distribution of the sample mean or difference in sample means.
Estimating Proportions with Confidence		
	Introduction to Confidence Intervals	
		Calculate the value of a point estimate and/or the margin of error of a given confidence interval.
		Evaluate a claim about a population parameter given a confidence interval.
		Interpret a confidence interval.
	More about Confidence Intervals	
		Determine how the margin of error and width of the interval is affected by the confidence level and sample size.
		Identify the sources of variability that are and are not accounted for by the margin of error in a confidence interval.
		Interpret the confidence level.

Unit	Lesson	Lesson Objectives
	Preparing to Estimate a Population Proportion	
		Calculate the point estimate and standard error of the sample proportion.
		Determine the critical value for a specific confidence level for a population proportion using a table and technology.
		Verify if each of the conditions for calculating a confidence interval for a population proportion are met.
	Estimating a Population Proportion	
		Calculate the minimum sample size that is needed to construct a confidence interval for a population proportion with a given confidence level and a given margin of error.
		Construct a confidence interval for a population proportion.
		Evaluate a claim about a population proportion based upon a calculated confidence interval.
	Estimating the Difference between Two Population Proportions	
		Construct a confidence interval for a difference in two population proportions using a graphing calculator.
		Construct a confidence interval for a difference in two population proportions.
		Determine whether the conditions for calculating a confidence interval for a difference in two population proportions are met.
		Evaluate a claim about a difference in two population proportions based upon a calculated confidence interval.
Testing Claims about Proportions		
	Introduction to Hypothesis Testing	
		Draw a conclusion based upon the *P* -value.
		Interpret the *P* -value.
		State appropriate hypotheses for performing a hypothesis test about a population proportion.
	Type I and Type II Errors	
		Describe and give a consequence of a Type I and Type II error.
		Draw a conclusion based upon an estimated *P* -value.
		Estimate a *P* -value based upon the results of a simulation.
	Preparing to Test a Claim about a Population Proportion	
		Calculate the test statistic and the *P* -value for a significance test about a population proportion.
		Determine if the conditions needed to carry out a significance test about a population proportion are met.
		Draw a conclusion based upon a calculated *P* -value.
	Testing a Claim about a Population Proportion	
		Calculate a test statistic and *P* -value for a hypothesis test about a population proportion using a graphing calculator.
		Conduct a hypothesis test about a population proportion given computer output.
		Conduct a hypothesis test about a population proportion.
		Describe the power of a test and/or what influences the power of a test.
	Testing a Claim about a Difference between Proportions	
		Calculate a test statistic and *P* -value for a hypothesis test about a population proportion using a graphing calculator.
		Conduct a hypothesis test about a difference in two population proportions.
		Perform one step of a hypothesis test for a difference in two population proportions.

Unit	Lesson	Lesson Objectives
Estimating Means with Confidence		
	Preparing to Estimate a Population Mean	
		Calculate the standard error of the mean.
		Determine if the conditions required to compute a C% confidence interval for a population mean are met.
		Determine the t critical value needed to compute a C% confidence interval for a population mean.
		Interpret the standard error of the mean.
	Estimating a Population Mean	
		Construct a confidence interval for a population mean using a graphing calculator.
		Construct a confidence interval for a population mean.
		Describe how the margin of error of a confidence interval can be reduced.
		Evaluate a claim about a population mean based upon a calculated confidence interval.
	Estimating a Difference in Two Population Means	
		Construct a confidence interval for a difference in two population means using a graphing calculator.
		Construct a confidence interval for a difference in two population means.
		Determine if the conditions required to compute a confidence interval for a difference in two population means are met.
		Evaluate a claim about the difference in the population means based upon a calculated confidence interval.
	Estimating the Mean Difference	
		Calculate the mean difference and the standard deviation of the differences for paired data.
		Construct a confidence interval for a mean difference using a graphing calculator.
		Construct a confidence interval for a mean difference.
		Evaluate a claim about a population mean difference based upon a confidence interval.
Testing Claims about Means		
	Preparing to Test a Claim about a Mean	
		Calculate the test statistic and the P-value for a hypothesis test about a population mean.
		Determine if the conditions needed to carry out a hypothesis test about a population mean are satisfied.
		Draw a conclusion based upon a calculated P-value.
		State appropriate hypotheses for performing a hypothesis test about a population mean.
	Testing a Claim about a Population Mean	
		Calculate a test statistic and P-value for a hypothesis test about a population mean using a graphing calculator.
		Conduct a hypothesis test about a population mean.
		Identify and give a consequence of a Type I and Type II error.
		Interpret the P-value.
	Significance Tests and Confidence Intervals	
		Describe the power of a test and/or what influences the power of a test.
		State a conclusion about a significance test for a population mean based upon a confidence interval.

Unit	Lesson	Lesson Objectives
	Testing a Claim about a Difference between Means	
		Calculate a test statistic and *P*-value for a significance test about a difference in two population means using a graphing calculator.
		Conduct a significance test about a difference in two population means.
		Perform one step of a significance test for a difference in two population means.
	Testing a Claim about a Mean Difference	
		Calculate a test statistic and *P*-value for a hypothesis test about a mean difference using a graphing calculator.
		Conduct a hypothesis test about a mean difference.
		Perform one step of a hypothesis test for a mean difference.
	Choosing the Appropriate Inference Procedure	
		Determine the appropriate inference procedure.
		Distinguish between one sample, two samples, and paired data.