AP® Statistics Curriculum Correlation Chart

The College Board Course Framework for AP® Statistics provides a description of course skills, Big Ideas, and a description of course content. *Statistics: Learning from Data*, 2nd Edition Update, provides comprehensive coverage of the content described in the Content Framework and is designed to help students develop all the related course skills.

Course Skills

The College Board Course Framework for AP® Statistics identifies four key course skills:

- **Skill 1: Selecting Statistical Methods**
  This skill is described as "Select methods for collecting and/or analyzing data for statistical inference." Skill 1 is developed throughout the text.

- **Skill 2: Data Analysis**
  This skill is described as "Describe patterns, trends, associations, and relationships in data." Skill 2 is also developed throughout, particularly in Chapters 1–3 and 8–15. Exercises ask students to interpret their results in context.

- **Skill 3: Using Probability and Simulation**
  This skill is described as "Explore random phenomena." Skill 3 is developed in Chapters 5 and 6, and it is applied in Chapter 7.

- **Skill 4: Statistical Argumentation**
  This skill is described as "Develop an explanation or justify a conclusion using evidence from data, definitions, or statistical inference." Skill 4 is also developed throughout the text. Exercises ask students to justify their conclusions and support their answers with statistical evidence.

Big Ideas

AP® Statistics is organized around Big Ideas that are aligned with multiple Enduring Understandings. These Big Ideas correspond to foundational concepts of Statistics and include: Variation and Distribution (VAR), Patterns and Uncertainty (UNC), and Data-based Decisions and Conclusions (DAT).

- **Big Idea 1: Variation and Distribution (VAR)**
  The distribution of measures for individuals within a sample or population describes variation. The value of a statistic varies from sample to sample. How can we determine whether differences between measures represent random variation or meaningful distinctions? Statistical methods based on probabilistic reasoning provide the basis for shared understandings about variation and about the likelihood that variation between and among measures, samples, and populations is random or meaningful.

- **Big Idea 2: Patterns and Uncertainty (UNC)**
  Statistical tools allow us to represent and describe patterns in data and to classify departures from patterns. Simulation and probabilistic reasoning allow us to anticipate patterns in data and to determine the likelihood of errors in inference.

- **Big Idea 3: Data-based Predictions, Decisions and Conclusions (DAT)**
  Data-based regression models describe relationships between variables and are a tool for making predictions for values of a response variable. Collecting data using random sampling or

randomized experimental design means that findings may be generalized to the part of the population from which the selection was made. Statistical inference allows us to make data-based decisions.

The following tables show the alignment of the text sections in *Statistics: Learning from Data*, 2nd Edition Update, with the content described in the College Board Course Framework unit guides.

Unit 1: Exploring Data: Single Variable Data and Introduction to the Normal Distribution		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**
1.1 Introducing Statistics: What Can We Learn from Data?	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.A:** Identify questions to be answered, based on variation in one-variable data.	1.1
1.2 The Language of Variation: Variables	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.B:** Identify variables in a set of data. **VAR-1.C:** Classify types of variables.	1.2
1.3 Representing a Categorical Variable with Tables	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data. **UNC-1.A:** Represent categorical data using frequency or relative frequency tables. **UNC-1.B:** Describe categorical data represented in frequency or relative tables.	1.3
1.4 Representing a Categorical Variable with Graphs	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data**.** **UNC-1.C:** Represent categorical data graphically. **UNC-1.D:** Describe categorical data represented graphically. **UNC-1.E:** Compare multiple sets of categorical data.	1.4, 1.5
1.5 Representing a Quantitative Variable with Graphs	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data**.** **UNC-1.F:** Classify types of quantitative variables. **UNC-1.G:** Represent quantitative data graphically.	1.2, 1.4
1.6 Describing the Distribution of a Quantitative Variable	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data**.** **UNC-1.H:** Describe the characteristics of quantitative data distributions.	1.4
1.7 Summary Statistics for a Quantitative Variable	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data**.** **UNC-1.I:** Calculate measures of center and position for quantitative data. **UNC-1.J:** Calculate measures of variability for quantitative data. **UNC-1.K:** Explain the selection of a particular measure of center and/or variability for describing a set of quantitative data.	2.1, 2.2, 2.3, 2.4, 2.5

Unit 1: Exploring Data: Single Variable Data and Introduction to the Normal Distribution		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**
1.8 Graphical Representations of Summary Statistics	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data**.** **UNC-1.L:** Represent summary statistics for quantitative data graphically. **UNC-1.M:** Describe summary statistics of quantitative data represented graphically.	2.4
1.9 Comparing Distributions of a Quantitative Variable	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data**.** **UNC-1.N:** Compare graphical representations for multiple sets of quantitative data. **UNC-1.O:** Compare summary statistics for multiple sets of quantitative data.	1.3, 1.4, 2.2, 2.3, 3.4
1.10 The Normal Distribution	**VAR-2:** The normal distribution can be used to represent some population distributions**.** **VAR-2.A:** Compare a data distribution to the normal distribution model. **VAR-2.B:** Determine proportions and percentiles from a normal distribution. **VAR-2.C:** Compare measures of relative position in data sets.	Introduced 1.4, Revisited 2.5, 6.5

Unit 2: Exploring Data: Two Variable Data		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**
2.1 Introducing Statistics: Are Variables Related?	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.D:** Identify questions to be answered about possible relationships in data.	3.1, 3.2
2.2 Representing Two Categorical Variables	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data. **UNC-1.P:** Compare numerical and graphical representations for two categorical variables.	3.1
2.3 Statistics for Two Categorical Variables	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data. **UNC-1.Q:** Calculate statistics for two categorical variables. **UNC-1.R:** Compare statistics for two categorical variables.	3.1
2.4 Representing the Relationship Between Two Quantitative Variables	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data. **UNC-1.S:** Represent bivariate quantitative data using scatterplots. **DAT-1:** Regression models may allow us to predict responses to changes in an explanatory variable. **DAT-1.A:** Describe the characteristics of a scatter plot.	3.2, 3.4

2.5 Correlation	**DAT-1:** Regression models may allow us to predict responses to changes in an explanatory variable. **DAT-1.B:** Determine the correlation for a linear relationship. **DAT-1.C:** Interpret the correlation for a linear relationship.	3.3
2.6 Linear Regression Models	**DAT-1:** Regression models may allow us to predict responses to changes in an explanatory variable. **DAT-1.D:** Calculate a predicted response value using a linear regression model.	3.4, 3.6
2.7 Residuals	**DAT-1:** Regression models may allow us to predict responses to changes in an explanatory variable. **DAT-1.E:** Represent differences between measured and predicted responses using residual plots. **DAT-1.F:** Describe the form of association of bivariate data using residual plots.	3.5, 3.6
2.8 Least Squares Regression	**DAT-1:** Regression models may allow us to predict responses to changes in an explanatory variable. **DAT-1.G:** Estimate parameters for the least squares regression line model. **DAT-1.H:** Interpret coefficients for the least squares regression line model.	3.4, 3.6
2.9 Analyzing Departures from Linearity	**DAT-1:** Regression models may allow us to predict responses to changes in an explanatory variable. **DAT-1.I:** Identify influential points in regression. **DAT-1.J:** Calculate a predicted response using a least squares regression line for a transformed data set.	3.5, 3.7

Unit 3: Collecting Data: Planning and Conducting a Study		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**
3.1 Introducing Statistics: Do the Data We Collected Tell the Truth?	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.E:** Identify questions to be answered about data collection methods.	4.1
3.2 Introduction to Planning a Study	**DAT-2:** The way you collect data influences what we can and cannot say about a population. **DAT-2.A:** Identify the type of a study. **DAT-2.B:** Identify appropriate generalizations and determinations based on observational studies.	4.1, 4.4
3.3 Random Sampling and Data Collection	**DAT-2:** The way you collect data influences what we can and cannot say about a population. **DAT-2.C:** Identify a sampling method, given a description of a study. **DAT-2.D:** Explain why a particular sampling method is or is not appropriate for a given situation.	4.2

3.4 Potential Problems with Sampling	**DAT-2:** The way you collect data influences what we can and cannot say about a population. **DAT-2.E:** Identify potential sources of bias in sampling methods.	4.2
3.5 Introduction to Experimental Design	**VAR-3:** Well-designed experiments can establish evidence of causal relationships. **VAR-3.A:** Identify the components of an experiment. **VAR-3.B:** Describe elements of a well-designed experiment. **VAR-3.C:** Compare experimental designs and methods.	4.3
3.6 Selecting an Experimental Design	**VAR-3:** Well-designed experiments can establish evidence of causal relationships. **VAR-3.D:** Explain why a particular experimental design is appropriate.	4.3
3.7 Inference and Experiments	**VAR-3:** Well-designed experiments can establish evidence of causal relationships. **VAR-3.E:** Interpret the results of a well-designed experiment.	4.3, 4.4

Unit 4: Probability Rules, Random Variables, and Probability Distributions		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**
4.1 Introducing Statistics: Random and Non-random Patterns?	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.F:** Identify questions suggested by patterns in data.	5.1, 5.7
4.2 Estimating Probabilities Using Simulation	**UNC-2:** Simulation allows us to anticipate patterns in data. **UNC-2.A:** Estimate probabilities using simulation.	5.1, 5.7
4.3 Introduction to Probability	**VAR-4:** The likelihood of a random event can be quantified. **VAR-4.A:** Calculate probabilities for events and their complements. **VAR-4.B:** Interpret probabilities for events.	5.1, 5.2
4.4 Mutually Exclusive Events	**VAR-4:** The likelihood of a random event can be quantified. **VAR-4.C:** Explain why two events are (or are not) mutually exclusive.	5.3
4.5 Conditional Probability	**VAR-4:** The likelihood of a random event can be quantified. **VAR-4.D:** Calculate conditional probabilities.	5.4, 5.5
4.6 Independent Events and Unions of Events	**VAR-4:** The likelihood of a random event can be quantified. **VAR-4.E:** Calculate probabilities for independent events and for the union of two events.	5.4, 5.5

4.7 Introduction to Random Variables and Probability Distributions	**VAR-5:** Probability distributions may be used to model variation in populations. **VAR-5.A:** Represent the probability distribution for a discrete random variable. **VAR-5.B:** Interpret a probability distribution.	6.1, 6.2, 6.3
4.8 Mean and Standard Deviation of Random Variables	**VAR-5:** Probability distributions may be used to model variation in populations. **VAR-5.C:** Calculate parameters for a discrete random variable. **VAR-5.D:** Interpret parameters for a discrete random variable.	6.4
4.9 Combining Random Variables	**VAR-5:** Probability distributions may be used to model variation in populations. **VAR-5.E:** Calculate parameters for linear combinations of random variables. **VAR-5.F:** Describe the effects of linear transformations of parameters of random variables.	6.4
4.10 Introduction to the Binomial Distribution	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data. **UNC-3.A:** Estimate probabilities of binomial random variables using data from a simulation. **UNC-3.B:** Calculate probabilities for a binomial distribution.	6.7
4.11 Parameters for a Binomial Distribution	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data. **UNC-3.C:** Calculate parameters for a binomial distribution. **UNC-3.D:** Interpret probabilities and parameters for a binomial distribution.	6.7
4.12 The Geometric Distribution	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data. **UNC-3.E:** Calculate probabilities for geometric random variables. **UNC-3.F:** Calculate parameters of a geometric distribution. **UNC-3.G:** Interpret probabilities and parameters for a geometric distribution.	6.7

Unit 5: The Central Limit Theorem and Introduction to Sampling Distributions		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**
5.1 Introducing Statistics: Why Is My Sample Not Like Yours?	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.G:** Identify questions suggested by variation in statistics for samples collected from the same population.	7.1
5.2 The Normal Distribution, Revisited	**VAR-6:** The normal distribution may be used to model variation in populations. **VAR-6.A:** Calculate the probability that a particular value lies in a given interval of a normal distribution. **VAR-6.B:** Determine the interval associated with a given area in a normal distribution. **VAR-6.C:** Determine the appropriateness of using the normal distribution to approximate probabilities for unknown distributions.	6.3, 6.5, 6.6

5.3 The Central Limit Theorem	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data. **UNC-3.H:** Estimate sampling distributions using simulation.	7.2, 7.3
5.4 Biased and Unbiased Point Estimates	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data. **UNC-3.I:** Explain why an estimator is or is not unbiased. **UNC-3.J:** Calculate estimates for a population parameter.	7.2
5.5 Sampling Distributions for Sample Proportions	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data. **UNC-3.K:** Determine parameters of a sampling distribution for sample proportions. **UNC-3.L:** Determine whether a sampling distribution for a sample proportion can be described as approximately normal. **UNC-3.M:** Interpret probabilities and parameters for a sampling distribution for a sample proportion.	7.2
5.6 Sampling Distribution for Differences in Sample Proportions	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data. **UNC-3.N:** Determine parameters of a sampling distribution for a difference in sample proportions. **UNC-3.O:** Determine whether a sampling distribution for a difference of sample proportions can be described as approximately normal. **UNC-3.P:** Interpret probabilities and parameters for a sampling distribution for a difference in proportions.	7.4
5.7 Sampling Distributions for Sample Means	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data. **UNC-3.Q:** Determine parameters for a sampling distribution for sample means. **UNC-3.R:** Determine whether a sampling distribution of a sample mean can be described as approximately normal. **UNC-3.S:** Interpret probabilities and parameters for a sampling distribution for a sample mean.	7.3
5.8 Sampling Distributions for Differences in Sample Means	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data. **UNC-3.T:** Determine parameters of a sampling distribution for a difference in sample means. **UNC-3.U:** Determine whether a sampling distribution of a difference in sample means can be described as approximately normal. **UNC-3.V:** Interpret probabilities and parameters for a sampling distribution for a difference in sample means.	7.4

Unit 6: Inference for Categorical Data: Proportions		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**
6.1 Introducing Statistics: Why Be Normal?	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.H:** Identify questions suggested by variation in the shapes of distributions of samples taken from the same population.	8.1, 8.2, 8.3, 8.4

6.2 Constructing a Confidence Interval for a Population Proportion	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.A:** Identify an appropriate confidence interval procedure for a population proportion. **UNC-4.B:** Verify the conditions for calculating confidence intervals for a population proportion. **UNC-4.C:** Determine the margin of error for a given sample size and an estimate for the sample size that will result in a given margin of error for a population proportion. **UNC-4.D:** Calculate an appropriate confidence interval for a population proportion. **UNC-4.E:** Calculate an interval estimate based on a confidence interval for a population proportion.	9.1, 9.2, 9.3, 9.4
6.3 Justifying a Claim Based on a Confidence Interval for a Population Proportion	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.F:** Interpret a confidence interval for a population proportion. **UNC-4.G:** Justify a claim based on a confidence interval for a population proportion. **UNC-4.H:** Identify the relationships between sample size, width of a confidence interval, confidence level, and margin of error for a population proportion.	9.3, 9.5
6.4 Setting Up a Test for a Population Proportion	**VAR-6:** The normal distribution may be used to model variation in populations. **VAR-6.D:** Identify the null and alternative hypotheses for a population proportion. **VAR-6.E:** Identify an appropriate testing method for a population proportion. **VAR-6.F:** Verify the conditions for making statistical inferences when testing a population proportion.	10.1, 10.3, 10.4, 10.5
6.5 Interpreting *p*-values	**VAR-6:** The normal distribution may be used to model variation in populations. **VAR-6.G:** Calculate an appropriate test statistic and *p*-value for a population proportion. **DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context. **DAT-3.A:** Interpret the *p*-value of a hypothesis test for a population proportion.	10.4, 10.5
6.6 Concluding a Test for a Population Proportion	**DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context. **DAT-3.B:** Justify a claim about the population based on the results of a hypothesis test for a population proportion.	10.4, 10.5, 10.7

6.7 Potential Errors When Performing Tests	**UNC-5:** Probabilities of Type I and Type II error influence inference. **UNC-5.A:** Identify Type I and Type II error. **UNC-5.B:** Calculate the probability of a Type I and Type II errors. **UNC-5.C:** Identify factors that affect the probability of errors in hypothesis testing. **UNC-5.D:** Interpret Type I and Type II errors.	10.2, 10.6
6.8 Confidence Intervals for the Difference of Two Proportions	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.I:** Identify an appropriate confidence interval procedure for a comparison of population proportions. **UNC-4.J:** Verify the conditions for calculating confidence intervals for a difference between population proportions. **UNC-4.K:** Calculate an appropriate confidence interval for a comparison of population proportions. **UNC-4.L:** Calculate an interval estimate based on a confidence interval for a difference of proportions.	11.1
6.9 Justifying a Claim Based on a Confidence Interval for the Difference of Population Proportions	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.M:** Interpret a confidence interval for a difference of proportions. **UNC-4.N:** Justify a claim based on a confidence interval for a difference of proportions.	11.1
6.10 Setting Up a Test for the Difference of Two Population Proportions	**VAR-6:** The normal distribution may be used to model variation in populations. **VAR-6.H:** Identify the null and alternative hypotheses for a difference of two population proportions. **VAR-6.I:** Identify an appropriate testing method for the difference of two population proportions. **VAR-6.J:** Verify the conditions for making statistical inferences when testing a difference of two population proportions.	11.2, 11.3, 11.4
6.11 Carrying Out a Test for the Difference of Two Population Proportions	**VAR-6:** The normal distribution may be used to model variation in populations. **VAR-6.K:** Calculate an appropriate test statistic for the difference of two population proportions. **DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context. **DAT-3.C:** Interpret the *p*-value of a hypothesis test for a difference of population proportions. **DAT-3.D:** Justify a claim about the population based on the results of a hypothesis test for a difference of population proportions.	11.2, 11.3, 11.4

Unit 7: Inference for Quantitative Data: Means		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**

7.1 Introducing Statistics: Should I Worry About Error?	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.I:** Identify questions suggested by probabilities of errors in statistical inference.	12.1,12.2
7.2 Constructing a Confidence Intervals for a Population Mean	**VAR-8:** The *t*-distribution may be used to model variation in populations. **VAR-8.A:** Describe *t*-distributions. **UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.O:** Identify an appropriate confidence interval procedure for a population mean, including the mean difference between values in matched pairs. **UNC-4.P:** Verify the conditions for calculating confidence intervals for a population mean, including the mean difference between values in matched pairs. **UNC-4.Q.1:** Determine the margin of error for a given sample size for a one-sample *t*-interval. **UNC-4.R:** Calculate an appropriate confidence interval for a population mean, including the mean difference between values in matched pairs.	12.1, 13.1, 13.2
7.3 Justifying a Claim About a Population Mean Based on a Confidence Interval	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.S:** Interpret a confidence interval for a population mean, including the mean difference between values in matched pairs. **UNC-4.T:** Justify a claim based on a confidence interval for a population mean, including the mean difference between values in matched pairs. **UNC-4.U:** Identify the relationships between sample size, width of a confidence interval, confidence level, and margin of error for a population mean.	12.1, 13.1, 13.2
7.4 Setting up a Test for a Population Mean	**VAR-8:** The *t*-distribution may be used to model variation in populations. **VAR-8.B:** Identify an appropriate testing method for a population mean with unknown σ, including the mean difference between values in matched pairs. **VAR-8.C:** Identify the null and alternative hypotheses for a population mean with unknown σ, including the mean difference between values in matched pairs. **VAR-8.D:** Verify the conditions for the test for a population mean, including the mean difference between values in matched pairs.	12.2, 13.1, 13.2
7.5 Carrying Out a Test for a Population Mean	**VAR-8:** The *t*-distribution may be used to model variation in populations. **VAR-8.E:** Calculate an appropriate test statistic for a population mean, including the mean difference between values in matched pairs. **DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context. **DAT-3.E:** Interpret the *p*-value of a hypothesis test for a population mean, including the mean difference between values in matched pairs. **DAT-3.F:** Justify a claim about the population based on the results of a hypothesis test for a population mean.	12.2, 13.1, 13.2

7.6 Confidence Intervals for the Difference of Two Means	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.V:** Identify an appropriate confidence interval procedure for a difference of two population means. **UNC-4.W:** Verify the conditions to calculate confidence intervals for the difference of two population means. **UNC-4.X:** Determine the margin of error for the difference of two population means. **UNC-4.Y:** Calculate an appropriate confidence interval for a difference of two population means.	13.3, 13.4
7.7 Justifying a Claim About the Difference of Two Means Based on a Confidence Interval	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.Z:** Interpret a confidence interval for a difference of population means. **UNC-4.AA:** Justify a claim based on a confidence interval for a difference of population means. **UNC-4.AB:** Identify the effects of sample size on the width of a confidence interval for the difference of two means.	13.3, 13.4
7.8 Setting Up a Test for the Difference of Two Population Means	**VAR-8:** The *t*-distribution may be used to model variation in populations **VAR-8.F:** Identify an appropriate selection of a testing method for a difference of two population means. **VAR-8.G:** Identify the null and alternative hypotheses for a difference of two population means. **VAR-8.H:** Verify the conditions for the hypothesis test for the difference of two population means.	13.3, 13.4
7.9 Carrying Out a Test for the Difference of Two Population Means	**VAR-8:** The *t*-distribution may be used to model variation in populations **VAR-8.I:** Calculate an appropriate test statistic for a difference of two means. **DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context. **DAT-3.G:** Interpret the *p*-value of a hypothesis test for a difference of population means. **DAT-3.H:** Justify a claim about the population based on the results of a hypothesis test for a difference of two population means in context.	12.3, 13.5
7.10 Skills Focus: Selecting, Implementing, and Communicating Inference Procedures		8.2, 12.4, 13.5

Unit 8: Inference for Categorical Data: Chi-Square		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**

8.1 Introducing Statistics: Are My Results Unexpected?	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.J:** Identify questions suggested by variation between observed and expected counts in categorical data.	14.1, 14.2
8.2 Introduction to the Chi-Square Test for Goodness of Fit	**VAR-7:** The chi-square distribution may be used to model variation in populations. **VAR-7.A:** Describe chi-square distributions. **VAR-7.B:** Identify the null and alternative hypotheses in a test for a distribution of proportions in a set of categorical data. **VAR-7.C:** Identify an appropriate testing method for a distribution of proportions in a set of categorical data. **VAR-7.D:** Calculate expected counts for the chi-square test for goodness of fit. **VAR-7.E:** Verify the conditions for making statistical inferences when testing goodness of fit for a chi-square distribution.	14.1
8.3 Drawing Conclusions Based on the Results of a Chi-Square Test for Goodness of Fit	**VAR-7:** The chi-square distribution may be used to model variation in populations. **VAR-7.F:** Calculate the appropriate statistic for the chi-square test for goodness of fit. **VAR-7.G:** Determine the *p*-value for chi-square test for goodness of fit hypothesis test. **DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context. **DAT-3.I:** Interpret the *p*-value for the chi-square test for goodness of fit. **DAT-3.J:** Justify a claim about the population based on the results of a chi-square test for goodness of fit.	14.1
8.4 Expected Counts in Two-Way Tables	**VAR-7:** The chi-square distribution may be used to model variation in populations. **VAR-7.H:** Calculate expected counts for two-way tables of categorical data.	14.2
8.5 Setting Up a Chi-Square Test for Homogeneity or Independence	**VAR-7:** The chi-square distribution may be used to model variation in populations. **VAR-7.I:** Identify the null and alternative hypotheses for a chi-Square test for homogeneity or independence. **VAR-7.J:** Identify an appropriate testing method for comparing distributions in two-way tables of categorical data. **VAR-7.K:** Verify the conditions for making statistical inferences when testing a chi-square distribution for independence or homogeneity.	14.2

8.6 Carrying Out a Chi-Square Test for Homogeneity or Independence	**VAR-7:** The chi-square distribution may be used to model variation in populations. **VAR-7.L:** Calculate the appropriate statistic for a chi-square test for homogeneity or independence. **VAR-7.M:** Determine the *p*-value for a chi-square hypothesis test for independence or homogeneity. **DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context. **DAT-3.K:** Interpret the *p*-value for the chi-square test for homogeneity or independence. **DAT-3.L:** Justify a claim about the population based on the results of a chi-square test for homogeneity or independence.	14.2
8.7 Skills Focus: Selecting an Appropriate Inference Procedure for Categorical Data		14.1, 14.2, 14.3

Unit 9: Inference for Quantitative Data: Slopes		
Topic	**Enduring Understanding & Learning Objective**	**Text Section(s)**
9.1 Introducing Statistics: Do Those Points Align?	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-1.K:** Identify questions suggested by variation in scatter plots.	15.1, 15.2, 15.3
9.2 Confidence Intervals for the Slope of a Regression Model	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.AC:** Identify an appropriate confidence interval procedure for a slope of a regression model. **UNC-4.AD:** Verify the conditions to calculate confidence intervals for the slope of a regression model. **UNC-4.AE:** Determine the given margin of error for the slope of a regression model. **UNC-4.AF:** Calculate an appropriate confidence interval for the slope of a regression model.	15.2
9.3 Justifying a Claim About the Slope of a Regression Model Based on a Confidence Interval	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-4.AG:** Interpret a confidence interval for the slope of a regression model. **UNC-4.AH:** Justify a claim based on a confidence interval for the slope of a regression model. **UNC-4.AI:** Identify the effects of sample size on the width of a confidence interval for the slope of a regression model.	15.2

9.4 Setting Up aTest for the Slope of a Regression Model	**VAR-8:** The *t*-distribution may be used to model variation in populations. **VAR-8.J:** Identify the appropriate selection of a testing method for a slope of a regression model. **VAR-8.K:** Identify appropriate null and alternative hypotheses for a slope of a regression model. **VAR-8.L:** Verify the conditions for the hypothesis test for the slope of a regression model.	15.2
9.5 Carrying Out a Test for the Slope of a Regression Model Path A: Two class periods	**VAR-8:** The *t*-distribution may be used to model variation in populations. **VAR-8.M:** Calculate an appropriate test statistic for the slope of a regression model. **DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context. **DAT-3.M:** Interpret the *p*-value of a hypothesis test for the slope of a regression model. **DAT-3.N:** Justify a claim about the population based on the results of a hypothesis test for the slope of a regression model.	15.2
9.6 Skills Focus: Skill Focus: Selecting an Appropriate Inference Procedure		15.1, 15.2, 15.3