Course Description

AP® Statistics is a yearlong, college-level course designed to prepare students for the Advanced Placement (AP) Statistics exam. Major topics of study include exploring one- and two-variable data, sampling, experimentation, probability, sampling distributions, and statistical inference. These topics are organized into three big ideas: variation and distribution, patterns and uncertainty, data-based predictions, decisions, and conclusions. This course is aligned to the new College Board AP® Statistics course description that was introduced in 2019.

Classroom Requirements

This course requires the teacher to grade open-ended student responses, which will involve a fair degree of mathematics knowledge. The teacher is also expected to interact with students regularly (either face to face or via chat and email) and to set up and moderate online discussions in the Collaboration Corner. In addition, the teacher should provide instruction and coaching in calculator use, as needed.

Course Materials

Textbook
Starnes, Daren S., Tabor, Josh. *The Updated Practice of Statistics*, 6th ed., New York: W.H. Freeman & Co., 2020. **[CR1]**

Calculator
On-screen teachers will use an online graphing calculator tool for demonstration purposes. Students must have access to an AP-approved calculator both in the classroom and at home. Many assignments, projects, and practice exam questions will require the use of an AP-approved calculator.

Classroom teachers are expected to demonstrate the use of graphing calculators to their students as needed. **[CR2]**

Approach

Throughout the course, students will use their graphing calculators to construct graphical displays and perform calculations. Although performing correct and appropriate calculations is required, a heavy emphasis is placed on the interpretation of all calculations. Students are expected to clearly and completely communicate their methods and conclusions. It is also essential that responses always be provided in the context of the problem. They will use the Collaboration Corner course feature to facilitate additional class discussions.

Students are required to choose appropriate statistical procedures for a wide variety of scenarios. They will be expected to justify their choice of procedure based on whether the conditions for that procedure are met. Statistical terminology is precise and specific, so statistical terminology must always be used in the formal sense. **[CR 4]**

Students are also expected to check the reasonableness of their solutions based on graphical displays and probability rules, when appropriate.

Every unit test mirrors the format of the AP exam. In each unit, students will answer multiple-choice questions and complete two free-response questions. Some of these questions will require a calculator and some will not, but students are welcome to use a calculator on all problems. Students will also complete two full-length practice exams at the end of the course.

Course Outline [CR3]

Unit 1 – Data Analysis

Big Ideas: VAR, UNC

Skills: 1.A, 2.A, 2.B, 2.C, 2.D, 4.B

Topics for Overview

- Introduction to AP Statistics
- Introduction to Statistics
- Categorical Data Displays
- Relative Frequencies
- Comparing Two Categorical Variables
- Describing and Comparing Data with Dotplots and Stemplots
- Describing and Comparing Data with Histograms **[CR 2]**
- Measures of Center and Location **[CR 2]**
- Measures of Variability **[CR 2]**
- Boxplots and Outliers **[CR 2]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 1) **[CR 1]**

Examples of Key Activities

- Students will learn how to describe data graphically and numerically. They will display and describe both categorical and quantitative data. They will calculate summary statistics both by hand and by using technology. Desmos is used extensively throughout the course to ease the complication of the calculations, enabling students to focus on application and interpretation. **[CR 2] [CR 5]**

Unit 2 – The Normal Distribution

Big Ideas: VAR, UNC, DAT

Skills: 2.B, 2.C, 2.D, 3.A, 3.C

Topics for Overview

- Describing Location within a Distribution
- Calculating and Interpreting z-scores
- Effect of Linear Transformations
- Uniform Density Curves
- Normal Distribution **[CR 2]**
- Finding Areas within a Normal Distribution **[CR 2]**
- Finding Values for Probabilities **[CR 2]**
- Assessing Normality **[CR 2]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 2) **[CR 1]**

Examples of Key Activities

- Students will learn how to model distributions that are unimodal, bell-shaped, and symmetric with a Normal distribution. They will learn how to calculate the proportion of observations that fall in specific intervals within the Normal distribution. They will also learn how to determine the values associated with various percentiles within the Normal distribution. **[CR 2]**

Unit 3 – Simple Linear Regression

Big Ideas: VAR, DAT

Skills: 2.A, 2.B, 2.C, 4.B

Topics for Overview

- The Relationship between Two Quantitative Variables
- Correlation **[CR 2]**
- Making Predictions from a Least-Squares Regression Line
- Calculating the Least-Squares Regression Line **[CR 2]**
- Residuals
- *R*-squared and *s* **[CR 2]**
- Calculating a Least-Squares Regression Line from Summary Statistics
- Transforming to Achieve Linearity
- Choosing the Best Model **[CR 2]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 3) **[CR 1]**

Examples of Key Activities

- Students will deepen their understanding of the relationships that exist between bivariate quantitative data using scatterplots, as well as linear and nonlinear models. Students will use Desmos to simplify complex calculations as well as explore the effect of unusual observations on the slope, intercept, correlation, and other statistics in a dynamic manner. **[CR 2]**

Unit 4 – Sampling and Experimentation

Big Ideas: VAR, UNC

Skills: 1.A, 1.B, 1.C, 4.A, 4.B

Topics for Overview

- Introduction to Sampling Methods
- Simple Random Sample
- Other Sampling Methods
- Considerations When Sampling
- Sampling Project
- Observational Studies and Experiments
- Additional Principles of Experimental Design
- How to Experiment Well
- Experimental Designs
- Scope of Inference

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 4) **[CR 1]**

Examples of Key Activities

- Students will learn about sampling techniques and experimental designs, including their advantages and disadvantages, through a series of memorable and practical examples. Students will also learn about the pitfalls of data collection such as nonresponse bias, undercoverage bias, response bias, and wording bias. In this unit, students begin to understand the essential step of data collection as the first of many leading to statistical inference. **[CR 4]**

- *Sampling Project*: Students will complete a project that allows them to deepen their understanding of the critical step of data collection. They will have the flexibility to carry out a study on a topic of personal interest, which will enable them to engage with the material on a deeper level. **[CR 2] [CR 4]**

  Guidelines: (1) Propose a focused question for investigation, (2) Collect data in an appropriate manner, (3) Analyze the data using appropriate exploratory data analysis, (4) Draw appropriate statistical conclusions. Students will present their findings in a written report.

Unit 5 – Probability [CR 6]

Big Ideas: VAR, DAT

Skills: 1.A, 3.A, 4.B

Topics for Overview

- Introduction to Probability
- Probability Rules
- Applying Probability Rules
- Conditional Probabilities

- The Multiplication Rule for Dependent Events
- The Multiplication Rule for Independent Events

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 5) **[CR 1]**

Examples of Key Activities

- Students will explore the foundational concepts of probability using many real-life examples. They will discover the rules of probability in an intuitive manner, making it possible to not only remember, but to apply their understanding to other situations.

Unit 6 – Random Variables [CR 6]

Big Ideas: VAR, DAT

Skills: 2.B, 3.A, 3.B, 3.C, 4.B

Topics for Overview

- Introduction to Random Variables
- Discrete Random Variables: Mean
- Continuous Random Variables
- Transforming Random Variables
- Combining Two Random Variables
- Binomial Random Variables
- Binomial Probabilities **[CR 2]**
- Geometric Random Variables **[CR 2]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 6) **[CR 1]**

Examples of Key Activities

- Students will learn about discrete and continuous random variables, including the binomial and geometric distributions. Students will use a complex interactive activity to gain a deeper understanding of the relationship between the number of expected successes and failures and the shape of the binomial distribution. Students will again be in the driver's seat when they use a complex interactive activity to carry out simulations involving spinning a carnival wheel and rolling a die to model binomial and geometric probability distributions. **[CR 6]**

Unit 7 – Sampling Distributions [CR 6]

Big Ideas: VAR, UNC

Skills: 1.A, 3.B, 3.C, 4.B

Topics for Overview

- Introduction to Sampling Distributions
- Sampling Distributions – Center and Variability
- Sampling Distribution of the Sample Proportion
- Calculating Probabilities for Sampling Distribution **[CR 2]**
- Sampling Distribution of the Sample Mean
- Using the Central Limit Theorem **[CR 2]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 7) **[CR 1]**

Examples of Key Activities

- Students will explore the difference between population distribution, distribution of a single sample, and sampling distribution using many interactive activities in this unit. Students will select samples of 30 students from the state of Virginia to have a hands-on experience with the process of sampling and building a sampling distribution based upon repeated random samples selected from this population. Students will also explore the construction of a sampling distribution for populations that are approximately Normal, uniform, skewed left, and skewed right. These interactive activities are designed to simplify and bring to life what is typically a difficult concept. **[CR 6]**

Unit 8 – Estimating Proportions with Confidence [CR 7]

Big Ideas: VAR, UNC, DAT

Skills: 1.A, 1.D, 3.D, 4.A, 4.B, 4.C, 4.D

Topics for Overview

- Introduction to Confidence Intervals
- More about Confidence Intervals
- Preparing to Estimate a Population Proportion
- Estimating a Population Proportion **[CR 2]**
- Estimating the Difference between Two Population Proportions **[CR 2]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 8) **[CR 1]**

Examples of Key Activities

- Students will learn the process of constructing and interpreting a confidence interval for a population proportion and a difference in population proportions. To gain a deeper understanding of the interpretation of the confidence level, students will use a complex interactive activity that will allow them to explore and gain a visual understanding about why the confidence level equates to the capture rate of the method being used to construct the interval. Students will be able to control the confidence level, the value of the population parameter, and the sample size when exploring this concept.

Unit 9 – Testing Claims about Proportions [CR 7]

Big Ideas: VAR, UNC, DAT

Skills: 1.B, 1.E, 1.F, 3.A, 3.C, 3.E, 4.A, 4.B, 4.C, 4.E

Topics for Overview

- Introduction to Hypothesis Testing
- Type I and Type II Errors
- Preparing to Test a Claim about a Population Proportion
- Testing a Claim about a Population Proportion **[CR 2]**
- Testing a Claim about a Difference between Proportions **[CR 2]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 9) **[CR 1]**

Examples of Key Activities

- Students will learn how to carry out a test of significance for a population proportion and a difference in population proportions. They will also learn about the possibility and consequences of making a type I or a type II error. This unit uses many rich, real-life examples and relates the process of making a decision based upon the test of significance with the results that would be obtained had a confidence interval been used.

Unit 10 – Estimating Means with Confidence [CR 7]

Big Ideas: VAR, UNC, DAT

Skills: 1.A, 1.D, 3.C, 3.D, 4.A, 4.B, 4.C, 4.D

Topics for Overview

- Preparing to Estimate a Population Mean
- Estimating a Population Mean **[CR 2]**
- Estimating a Difference in Two Population Means **[CR 2]**
- Estimating the Mean Difference **[CR 2]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 10) **[CR 1]**

Examples of Key Activities

- Students will learn the process of constructing and interpreting a confidence interval for a population mean, a difference in population means, and a mean difference (paired data). Students will build on what they learned in the previous two units as they apply the four-step inference process to situations involving means. The students will explore this inference procedure using a variety of memorable and interesting examples.

Unit 11 – Testing Claims about Means [CR 7]

Big Ideas: VAR, UNC, DAT

Skills: 1.E, 1.F, 3.E, 4.B, 4.C, 4.E

Topics for Overview

- Preparing to Test a Claim about a Mean
- Testing a Claim about a Population Mean **[CR 2]**
- Significance Tests and Confidence Intervals
- Testing a Claim about a Difference between Means **[CR 2]**
- Testing a Claim about a Mean Difference **[CR 2]**
- Choosing the Appropriate Inference Procedure **[CR 4]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 11) **[CR 1]**

Examples of Key Activities

- Students will learn how to carry out a test of significance for a population mean, a difference in population means, and a mean difference (paired data). Students will revisit the concepts of type I error, type II error, and power as they relate to means. They will also revisit the connection between two-sided tests of significance and confidence intervals.

- *Statistical Inference Project*: Now that the students have studied confidence intervals and tests of significance for one and two means and one and two proportions, they are now given the opportunity to carry out the entire statistical process, from data collection to inference, in their own statistical study. Students are welcome to choose a topic of interest, and are provided with sample topics and a model study to help trigger their imaginations. We all use statistics every day, often informally, and this project allows students to complete a comprehensive study that will give them a deeper, more personal understanding of the process of statistical studies. **[CR 4] [CR 5] [CR 7]**

  Guidelines: (1) Propose a focused question for investigation, (2) Collect data in an appropriate manner, (3) Analyze the data using appropriate exploratory data analysis and inferential statistical analysis, (4) Draw appropriate statistical conclusions. Students will present their findings in a written report.

Unit 12 – Inference for Distributions and Relationships [CR 7]

Big Ideas: VAR, UNC, DAT

Skills: 1.A, 1.D, 1.E, 1.F, 3.A, 3.C, 3.E, 4.A, 4.B, 4.C, 4.E

Topics for Overview

- Preparing to Conduct a Chi-Square Test for Goodness of Fit
- Conducting a Chi-Square Test for Goodness of Fit
- Preparing to Conduct Inference for Two-Way Tables
- Chi-Square Test for Homogeneity **[CR 2]**
- Chi-Square Test for Association and Independence **[CR 2]**
- Preparing for Inference about Slope
- Confidence Intervals for Slope **[CR 2]**
- Significance Test for Slope **[CR 2]**

Textbook Reading

- Starnes & Tabor, 2020 (selections from chapter 12) **[CR 1]**

Examples of Key Activities

- Students will learn how to carry out inference for counts, which follows a chi-square distribution. Students will learn about the tests for goodness of fit, homogeneity, and association/independence. These new applications will flow seamlessly from the understanding students have gained from the previous units. Students will also learn how to carry out inference for bivariate quantitative data—specifically, confidence intervals and significance tests for the slope of the least-squares regression line. This final topic will provide an excellent review of the material learned in Unit 3, completing the spiraling nature of the course and providing the students with all they need to perform well on the AP exam. **[CR 2]**

Unit 13 – Exam Prep and Review

This unit will help students prepare for the AP Statistics exam. They will learn exam strategies for success, review content covered in the course, and practice test-taking techniques on two full practice exams.

AP® Statistics Course Framework (CF) Alignment to UPDATED *The Practice of Statistics* 6th edition

CED Units		AP Statistics Course (Using TPS 6e Update)		Big Idea 1: Variation and Distribution (VAR)	Big Idea 2: Patterns and Uncertainty (UNC)	Big Idea 3: Data-Based Predictions, Decisions, and Conclusions (DAT)
Unit 1:	**Exploring One-Variable Data**	**Unit 1:**	**Data Analysis**	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-2:** The normal distribution can be used to represent some population distributions.	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data.	
		Unit 2:	**Modeling Distributions of Quantitative Data**			
Unit 2:	**Exploring Two-Variable Data**	**Unit 3:**	**Exploring Two-Variable Quantitative Data**	**VAR-1:** Given that variation may be random or not, conclusions are uncertain.	**UNC-1:** Graphical representations and statistics allow us to identify and represent key features of data.	**DAT-1:** Regression models may allow us to predict responses to changes in an explanatory variable.
Unit 3:	**Collecting Data**	**Unit 4:**	**Collecting Data**	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-3:** Well-designed experiments can establish evidence of causal relationships.		**DAT-2:** The way we collect data influences what we can and cannot say about a population.
Unit 4:	**Probability, Random Variables, and Probability Distributions**	**Unit 5:**	**Probability**	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-4:** The likelihood of a random event can be quantified. **VAR-5:** Probability distributions may be used to model variation in populations.	**UNC-2:** Simulation allows us to anticipate patterns in data. **UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data.	
		Unit 6:	**Random Variables and Probability Distributions**			
Unit 5:	**Sampling Distributions**	**Unit 7:**	**Sampling Distributions**	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-6:** The normal distribution may be used to model variation.	**UNC-3:** Probabilistic reasoning allows us to anticipate patterns in data.	

Syllabus (continued)

Unit 6:	**Inference for Categorical Data: Proportions**	**Unit 8:**	**Estimating Proportions with Confidence**	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-6:** The normal distribution may be used to model variation.	**UNC-4**: An interval of values should be used to estimate parameters, in order to account for uncertainty. **UNC-5:** Probabilities of Type I and Type II errors influence inference.	**DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context.
		Unit 9:	**Testing Claims About Proportions**			
Unit 7:	**Inference for Quantitative Data: Means**	**Unit 10:**	**Estimating Means with Confidence**	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-7:** The t-distribution may be used to model variation**.**	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty.	**DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context.
		Unit 11:	**Testing Claims About Means**			
Unit 8:	**Inference for Categorical Data: Chi-Square**	**Unit 12:**	**Inference for Distributions and Relationships**	**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-8:** The chi-square distribution may be used to model variation.		**DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context.
Unit 9:	**Inference for Quantitative Data: Slopes**			**VAR-1:** Given that variation may be random or not, conclusions are uncertain. **VAR-7:** The t-distribution may be used to model variation.	**UNC-4:** An interval of values should be used to estimate parameters, in order to account for uncertainty.	**DAT-3:** Significance testing allows us to make decisions about hypotheses within a particular context.

Unit 1: Exploring One-Variable Data (Big Ideas: VAR, UNC) [CR3]

Enduring Understanding	CED Skills	Section from Textbook
1.1: Introducing Statistics: What Can We Learn from Data?	**1.A**	**Introduction**
1.2: The Language of Variation: Variables	**2.A**	**Introduction, 1.1**
1.3: Representing a Categorical Variable with Tables	**2.A, 2.B**	**1.1**
1.4: Representing a Categorical Variable with Graphs	**2.A, 2.B, 2.D**	**1.1**
1.5: Representing a Quantitative Variable with Graphs	**2.A, 2.B**	**1.2**
1.6: Describing the Distribution of a Quantitative Variable	**2.A**	**1.3**
1.7: Summary Statistics for a Quantitative Variable	**2.C, 4.B**	**1.3**
1.8: Graphical Representations of Summary Statistics	**2.A, 2.B**	**1.2**
1.9: Comparing Distributions of a Quantitative Variable	**2.D**	**1.3**
1.10: The Normal Distribution	**2.D, 3.A**	**2.1, 2.2**

Unit 2: Exploring Two-Variable Data (Big Ideas: VAR, UNC, DAT) CR3

Enduring Understanding	CED Skills	Section from Textbook
2.1: Introducing Statistics: Are Variables Related?	**1.A**	**3.1**
2.2: Representing Two Categorical Variables	**2.D**	**1.1**
2.3: Statistics for Two Categorical Variables	**2.C, 2.D**	**1.1**
2.4: Representing the Relationship Between Two Quantitative Variables	**2.A, 2.B**	**3.1**
2.5: Correlation	**2.C, 4.B**	**3.2**
2.6: Linear Regression Models	**2.C**	**3.2**
2.7: Residuals	**2.A, 2.B**	**3.2**
2.8: Least Squares Regression	**2.C, 4.B**	**3.2**
2.9: Analyzing Departures from Linearity	**2.A, 2.C**	**3.3**

Unit 3: Collecting Data (Big Ideas: VAR, DAT)

Enduring Understanding	CED Skills	Section from Textbook
3.1: Introducing Statistics: Do the Data We Collected Tell the Truth?	**1.A**	**Introduction, 4.1**
3.2: Introduction to Planning a Study	**1.C, 4.A**	**Introduction, 4.1**
3.3: Random Sampling and Data Collection	**1.C**	**4.1**
3.4: Potential Problems with Sampling	**1.C**	**4.1**
3.5: Introduction to Experimental Design	**1.B, 1.C**	**4.2**
3.6: Selecting an Experimental Design	**1.C**	**4.2**
3.7: Inference and Experiments	**4.B**	**4.3**

Unit 4: Probability, Random Variables, and Probability Distributions (Big Ideas: VAR, UNC)

Enduring Understanding	CED Skills	Section from Textbook
4.1: Introducing Statistics: Random and Non-Random Patterns?	**1.A**	**5.1**
4.2: Estimating Probabilities Using Simulation	**3.A**	**5.1**
4.3: Introduction to Probability	**3.A, 4.B**	**5.1**
4.4: Mutually Exclusive Events	**4.B**	**5.2**
4.5: Conditional Probability	**3.A**	**5.3**
4.6: Independent Events and Unions of Events	**3.A**	**5.3**
4.7: Introduction to Random Variables and Probability Distributions	**2.B, 4.B**	**6.1**
4.8: Mean and Standard Deviation of Random Variables	**3.B, 4.B**	**6.1**
4.9: Combining Random Variables	**3.B, 3.C**	**6.2**
4.10: Introduction to the Binomial Distribution	**3.A**	**6.3**
4.11: Parameters for a Binomial Distribution	**3.B, 4.B**	**6.3**
4.12: The Geometric Distribution	**3.A, 3.B, 4.B**	**6.3**

Unit 5: Sampling Distributions (Big Ideas: VAR, UNC)

Enduring Understanding	CED Skills	Section from Textbook
5.1: Introducing Statistics: Why Is My Sample Not Like Yours?	**1.A**	**7.1**
5.2: The Normal Distribution, Revisited	**3.A, 3.C**	**6.1**
5.3: The Central Limit Theorem	**3.C**	**7.3**
5.4: Biased and Unbiased Point Estimates	**3.B, 4.B**	**7.1**
5.5: Sampling Distributions for Sample Proportions	**3.B, 3.C, 4.B**	**7.2**
5.6: Sampling Distributions for Differences in Sample Proportions	**3.B, 3.C, 4.B**	**7.2**
5.7: Sampling Distributions for Sample Means	**3.B, 3.C, 4.B**	**7.3**
5.8: Sampling Distributions for Differences in Sample Means	**3.B, 3.C, 4.B**	**7.3**

Unit 6: Inference for Categorical Data: Proportions (Big Ideas: VAR, UNC, DAT)

Enduring Understanding	CED Skills	Section from Textbook
6.1: Introducing Statistics: Why Be Normal?	**1.A**	**Introduction**
6.2: Constructing a Confidence Interval for a Population Proportion	**1.D, 3.D, 4.C**	**8.1, 8.2**
6.3: Justifying a Claim Based on a Confidence Interval for a Population Proportion	**4.A, 4.B, 4.D**	**8.2, 9.2**
6.4: Setting Up a Test for a Population Proportion	**1.E, 1.F, 4.C**	**9.1**
6.5: Interpreting *p*-Values	**3.E, 4.B**	**9.1**
6.6: Concluding a Test for a Population Proportion	**4.E**	**9.2**
6.7: Potential Errors When Performing Tests	**1.B, 3.A, 4.A, 4.B**	**9.1**
6.8: Confidence Intervals for the Difference of Two Proportions	**1.D, 3.D, 4.C**	**9.2**
6.9: Justifying a Claim Based on a Confidence Interval for a Difference of Population Proportions	**4.B, 4.D**	**8.3, 9.3**
6.10: Setting Up a Test for the Difference of Two Population Proportions	**1.E, 1.F, 4.C**	**9.3**
6.11: Carrying Out a Test for the Difference of Two Population Proportions	**3.E, 4.B, 4.E**	**9.3**

Unit 7: Inference for Quantitative Data: Means (Big Ideas: VAR, UNC, DAT)

Enduring Understanding	CED Skills	Section from Textbook
7.1: Introducing Statistics: Why Should I Worry About Error?	**1.A**	**Introduction, 4.3**
7.2: Constructing a Confidence Interval for a Population Mean	**1.D, 3.C, 3.D, 4.C**	**10.1**
7.3: Justifying a Claim About a Population Mean Based on a Confidence Interval	**4.A, 4.B, 4.D**	**10.1, 11.1**
7.4: Setting Up a Test for a Population Mean	**1.E, 1.F, 4.C**	**11.1**
7.5: Carrying Out a Test for a Population Mean	**3.E, 4.B, 4.E**	**11.1**
7.6: Confidence Intervals for the Difference of Two Means	**1.D, 3.D, 4.C**	**10.2**
7.7: Justifying a Claim About the Difference of Two Means Based on a Confidence Interval	**4.A, 4.B, 4.D**	**10.2, 11.2**
7.8: Setting Up a Test for the Difference of Two Population Means	**1.E, 1.F, 4.C**	**11.2**
7.9: Carrying Out a Test for the Difference of Two Population Means	**3.E, 4.B, 4.E**	**11.2**
7.10: Skills Focus: Selecting, Implementing, and Communicating Inference Procedures	**N/A**	**N/A**

Unit 8: Inference for Categorical Data: Chi-Square (Big Ideas: VAR, DAT)

Enduring Understanding	CED Skills	Section from Textbook
8.1: Introducing Statistics: Are My Results Unexpected?	**1.A**	**12.1**
8.2: Setting Up a Chi-Square Goodness of Fit Test	**1.E, 1.F, 3.A, 3.C, 4.C**	**12.1**
8.3: Carrying Out a Chi-Square Test for Goodness of Fit	**3.E, 4.B, 4.E**	**12.1**
8.4: Expected Counts in Two-Way Tables	**3.A**	**12.2**
8.5: Setting Up a Chi-Square Test for Homogeneity or Independence	**1.E, 1.F, 4.C**	**12.2**
8.6: Carrying Out a Chi-Square Test for Homogeneity or Independence	**3.E, 4.B, 3.E**	**12.2**
8.7: Skills Focus: Selecting an Appropriate Inference Procedure for Categorical Data	**N/A**	**12.2**

Unit 9: Inference for Quantitative Data: Slopes (Big Ideas: VAR, UNC, DAT)

Enduring Understanding	CED Skills	Section from Textbook
9.1: Introducing Statistics: Do Those Points Align?	**1.A**	**12.3**
9.2: Confidence Intervals for the Slope of a Regression Model	**1.D, 3.D, 4.C**	**12.3**
9.3: Justifying a Claim About the Slope of a Regression Model Based on a Confidence Interval	**4.A, 4.B, 4.D**	**12.3**
9.4: Setting Up a Test for the Slope of a Regression Model	**1.E, 1.F, 4.C**	**12.3**
9.5: Carrying Out a Test for the Slope of a Regression Model	**3.E, 4.B, 4.E**	**12.3**
9.6: Skills Focus: Selecting an Appropriate Inference Procedure	**N/A**	**10.2**