The Facing History School

AP Statistics Syllabus

Grade 12

Teacher: Michael Boise

Course Overview

The purpose of the AP course in statistics is to introduce students to the major concepts and tools for collecting, analyzing and drawing conclusions from data. Students are exposed to four broad conceptual themes:

1. Exploring Data: Describing patterns and departures from patterns
2. Sampling and Experimentation: Planning and conducting a study
3. Anticipating Patterns: Exploring random phenomena using probability and simulation
4. Statistical Inference: Estimating population parameters and testing hypotheses

Text: Stats, Modeling the World. Bock, Velleman, De Veaux. 3rd Edition, 2010

Resources:

United States Statistical Abstract; During this course students will use the United States Statistical Abstract enhance the development of statistical understanding through exploring data and analyzing data.
http://www.census.gov/library/publications/time-series/statistical_abstracts.html

Ti-84 Plus Graphing calculator; students will routinely use calculators to enhance development of statistical understanding , and perform simulation. (Purchasing a graphing calculator is not required but strongly encouraged)

Computers; Students will routinely use computers to further explore and develop statistical understandings.

The Statistical Lab; Students will use this free software to enhance the development of statistical understanding through exploring data, assessing models,analyzing data and or performing simulations. The software can be downloaded at http://www.statistiklabor.de/en/Download/index.html

Investigative tasks

Investigative tasks are also a major part of the course. Students complete multiple tasks per unit. These tasks will be completed during class time, however, students may need to complete the task outside of class to meet required deadlines. These projects require students to design surveys and experiments, gather data, analyze the data numerically and graphically, and apply inferential statistics to draw conclusions for a population. Students write formal reports on their projects reporting methods, results, and interpretations using proper statistical vocabulary.

Mathematics Performance Based Task Assessment (PBAT)

As a culminating project students will complete the Mathematics Performance Based Assessment Task (PBAT). Each student Choose at social topic (i.e. poverty, racism, gun violence, homelessness etc.) Students must develop and conduct a statistical study, and then use the data collected to make sound connections and judgments between the design and the results of the experiment. Students will also be expected to analyze the collected data and related data found on the *United States Statistical Abstract,* complete a full statistical analysis, make inferences, include statistical graphics and communicate methods, results and interpretations using the vocabulary of statistics. Students complete a written portion including methods and justifications for decisions. Findings will be presented to a panel of teachers that will engage in a detailed discussion of the issue. Students must defend statistical decisions made and their analysis of the data collected.

Classroom Rules

1.) Arrive early or on time.
2.) Do not talk when someone else is talking.
3.) Come prepared with required classroom materials.
4.) Stay on task

<u>If you break a classroom rule, here is the order of what will happen:</u>

1.) Redirect

What this sounds like: *"John, I love your enthusiasm but remember to raise your to participate instead of calling out, so we give everyone a chance to think of an answer."*

2.) Verbal Warning (can happen publicly or one-on-one)

What this sounds like: *"John, when you call out, it disrupts other people from coming to their own answer or conclusions. This is your warning about calling out."*

3.) request an action from you.

What this sounds like: *"John, your classmate was called on but couldn't answer because you called out the answer. Can you please apologize to him either now or sometime before class dismisses? Thanks!"*

4.) One-on-one conversation (either quietly in the classroom or out in the hallway)

What this sounds like: *"John, come talk with me in the hallway."* *<Then we have a conversation about calling out in the hallway.>*

5.) Call home and/or sent to Courtney or admin office.

What this sounds like: *"John, today is just not your day. I need you to take your stuff and this pass and head to the admin office. I'll pop in after class to talk with you."*

Cell Phones

Schoolwide Policy: Cell phones are allowed in the school building but must be locked in your lockers.

If you have your cell phone out during class,**depending on how you respond and react depends on what will happen with your cell phone:**

<u>I will either keep it until:</u>

a.) the end of the class period then give it back to you before you leave
b.) the end of the day then give it back to you when you come get it from one of us at the end of the day
c.) turn the cell phone into the admin office/dean office.

If kept with us, your cell phone will be clearly labeled and securely locked in a closet to ensure its safety.

Uniform (Hats, hoodies, and collared shirts, especially)

You are expected to follow the school uniform policy in this class.

If your shirt or pants are out of uniform, (for example, your shirt does not have a collar), you will be sent to the admin offices to receive an appropriate uniform then return to class in appropriate uniform.

Headphones

Headphones should not be visible on your body. Headphones are <u>*not allowed*</u> in your ears, draped around your ears, and all the other possible ways to wear headphones. Sometimes you'll be allowed to listen to music when you work, but you will be given permission to do so.

<u>I will either keep it until:</u>

a.) the end of the class period then give it back to you before you leave
b.) the end of the day then give it back to you when you come get it from one of us at the end of the day
c.) turn the cell phone into the admin office/dean office.

If kept with us, your headphones will be clearly labeled and securely locked in a closet to ensure its safety.

Hallway Passes

If you come to class late, have a pass. Do not say, "The teacher did not give me a pass." It is your responsibility to ask the adult for a pass in order to enter our room late. If you do not have a pass, you will be marked as an unexcused tardy. **If you leave the classroom during class time**, you will get a pass. **If I forget to give you a pass**, it is your responsibility to ask for one.

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Absent to Class

Planned Absence = you know you are going to be absent (e.g. doctor's appointment)

For a planned absence, come inform us that you will be out in order for them to give you your missing work and fill you in on what you'll miss, so you do not fall behind!

Unplanned Absence = you are absent but did not anticipate or expect it (e.g. illness)

For an unplanned absence, like you wake up sick, feel free to text, call, or email so I know you will be out and can organize your work for when you return! This is not required but is a considerate, professional habit to get used to.

Regardless if your absence is planned or unplanned, **IT IS YOUR RESPONSIBILITY to come receive the work you missed that day in order to catch up.** Additionally, if you want one-on-one tutoring, teaching, etc. due to an absence, please set up an appointment for before school, during lunch, or after school.

Harmful, Hurtful, Offensive Language

If you think words have been used to harm, hurt, or offend someone, please do not let it go. Do something:
a.) talk to Michael, so they can address it.
b.) respectfully address it in the moment→ Do not combat harmful, hurtful, or offensive language with MORE harmful, hurtful, and offensive language.

If I think a word is being used to harm, hurt, or offend, I will talk to the person. As members of this class, I will work really hard to not harm, hurt or offend other with our words and language choice because you all have a right to a safe and welcoming classroom environment.

****I know it is not feasible to create a space where harmful, hurtful, offensive words and language are not used because I are all human and make mistakes. However, I aim to create a classroom where I all work tirelessly and to the best of our ability to not harm, hurt, or offend others. If/when I do offend someone, I work to remedy that **or** if I am offended, I work to communicate with the person, who offended us, about the harmful, hurtful, or offensive language used in order for it to, hopefully, not be used again.****

Plagiarism (copying) & Cheating

- ★ Copying and pasting someone else's words from the Internet to your assignment or paper is plagiarism if you do not cite the author and where you got the information from.
- ★ Copying someone's ideas by putting the ideas in your own words is also plagiarism if you do not cite the author and where you got the information from.
- ★ Copying another student's work is plagiarism.
- ★ Cheating on an assignment, quiz, test, etc. is, well, cheating.

All of these acts are forbidden and consequences will be issued on a case-to-case basis by myself, and the admin team (Dana, Mark, and/or Kristina). Your parent and guardian will also be notified as well.

Food and Drinks

I do not mind if you eat or drink in our classroom as long as it is not a distraction to others around you. You must also pick up after yourself and leave the space free of spills and crumbs! *This is a rule that can easily be changed if I recognize that food/drinks are becoming a distraction or messes are being left in the classroom.*

Bathroom/Water Fountain Policy *School-wide Policy: No students can use the bathroom during the first 10 minutes of class or last 10 minutes of class.*
Nature calls! Only one person is allowed to be out of the classroom at a time. You must a use the bathroom pass.
Gradebook
Teacher gradebooks must be updated each week on Tuesdays. I will probably do it more than that but, at minimum, the gradebook is updated once a week.

The gradebook is divided into three sections:

- ★ Learning Activities
  3-5 grade learning activities will be entered each week = roughly 60 to 80 grades per semester

- ★ Formative Assessments
  2-4 per unit = roughly 10 per semester

- ★ Summative Assessments
  1-2 per unit = roughly 6 per semester

Office Hours
Thursdays and Fridays after school
OR
By appointment. *By appointment* means you come to us, I set up an agreed upon time to meet, and then you come in and I meet.
Teacher Contact Information

Michael
Cell phone: (607) 435-6827. *Feel free to text or call; however, please do not text or call after 8pm. Thanks!*
Email: mjohnboise@gmail.com

Unit 1 Exploring and Understanding Data

Enduring Understandings:

The *Who, What, Where, Why,* and *How* of the data are important information that must be depicted in each given data set.
The shape, center, and spread should be described for every distribution. The normal distribution is used to model the spread of data

Essential Questions:

What is data? How do we understand and communicate data?
What assumptions can be made from data?
How can graphical displays be manipulated to present misleading information?
Why is the normal distribution essential to the study of statistics?
How does the normal distribution apply to the real world?

Pacing	Topics	I can Statements	Resource	Assessment
September	Exploring Data: Describing patterns and departures from patterns A. Constructing and interpreting graphical displays of distributions of	I can identify the Who, What, When, Where, Why, and How of data or recognize when information has not been provided.	Text Chapters 1 - 6	Investigative task Quiz Test

	univariate data (dotplot, stemplot, histogram, cumulative frequency plot) 1. Center and spread 2. Clusters and gaps 3. Outliers and other unusual features 4. Shape B. Summarizing distributions of univariate data 1. Measuring center: median, mean 2. Measuring spread: range, interquartile range, standard deviation 3. The normal distribution i. Properties of the normal distribution ii. Using tables of the normal distribution iii. The normal distribution as a model for measurements iv. Measuring position: quartiles, percentiles, standardized scores (z-scores) 4. Using boxplots 5. The effect of changing units on summary measures C. Comparing distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots) 1. Comparing center and spread: within group, between group variation 2. Comparing clusters and gaps 3. Comparing outliers and other unusual features 4. Comparing shapes D. Exploring categorical data 1. Frequency tables and bar charts 2. Marginal and joint frequencies for two-way tables 3. Conditional relative frequencies and association 4. Comparing distributions using bar charts	I can identify the cases and the cases and variables in any data set. I can identify the population for which a sample was chosen. I can classify a variable as categorical or quantitative, depending on its use. I can identify the units for a variable for quantitative data. I can recognize when variable is categorical and choose an appropriate display for it. I can examine the association between categorical variable by comparing conditional and marginal percentages. I can summarize the distribution of a categorical variable with a Frequency table. I can summarize the distribution of a categorical variable with a bar chart or pie chart I can identify; an appropriate display for any quantitative variable. I can guess the shape of the distribution of a variable by knowing something about the data. I can select a suitable measure of center and a suitable measure of spread for a variable based on information about its distribution. I find the measures of central tendency. I can use the median of data I can relate the mean to a histogram. I can relate standard deviation to data. I can use median and IQR to minimize the effects of outliers. I can display data using stem-and-leaf, dotplot,or histogram. I can chose a suitable display for		

		comparing groups. I can create groupings that show important information for analysis. I can create comparable histograms of two groups. I can create comparable boxplots of groups of data. I can make a time plot of data. I can determine how adding, multiplying by a constant change the center of spread of a variable. I can recognize when standardization can be used to compare values. I can use standard deviation as a rule for standardizing. I can recognize when a normal model is appropriate. I can calculate the z-score of an observation. I can compare values of two different variable using their z-scores. I can use normal models and the 68-95-99.7 rule to estimate the percentage of observations falling within 1,2,3 standard deviations of the mean. I can find the percentage of observation falling below any value in a Normal model using a normal table.		

Unit 1 Common Core

CCSS.MATH.CONTENT.HSS.ID.A.1
Represent data with plots on the real number line (dot plots, histograms, and box plots).

CCSS.MATH.CONTENT.HSS.ID.A.2
Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.

CCSS.MATH.CONTENT.HSS.ID.A.3
Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).

CCSS.MATH.CONTENT.HSS.ID.A.4
Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to esti
mate areas under the normal curve.

CCSS.MATH.CONTENT.HSS.ID.B.5
Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
CCSS.MATH.CONTENT.HSS.ID.B.6
Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.

Unit 2 Gathering Data

Enduring Understandings:

Careful planning is essential to obtaining valid data.

Clarifying the question leads to the appropriate methodology. The analysis is only as good as the data.

Well-designed experiments can allow us to reach appropriate cause-and-effect conclusions

Essential Questions:

How do we obtain data? Why is it important?

How can bias be identified and prevented?

To what extent does data collection methodology affect results?

Pacing	Topics	I can Statements	Resource	Assessment
October-November	Sampling and Experimentation: Planning and conducting a study *Data must be collected according to a well-developed plan if valid information on a conjecture is to be obtained. This plan includes clarifying the question and deciding upon a method of data collection and analysis.* A. Overview of methods of data collection 1. Census 2. Sample survey 3. Experiment 4. Observational study B. Planning and conducting surveys 1. Characteristics of a well-designed and well-conducted survey 2. Populations, samples and random selection 3. Sources of bias in sampling and surveys 4. Sampling methods, including simple random sampling, stratified random sampling and cluster sampling	I can recognize random outcomes in a real-world situation. I can recognize when to use simulation to model random behavior in the real world. I can perform a simulation by generating random numbers. I can describe a simulation so other can repeat it. I can use the results of a simulation study to draw conclusions about the question being investigated. I can recognize population parameters in descriptions of populations and samples. I can use randomization as a defense against bias. I can use the size of a sample to determine the precision of estimates. I can draw a simple random sample. I can report a sample as part of a	Text Chapters 11-13	Investigative task Quiz Test

	C. Planning and conducting experiments 1. Characteristics of a well-designed and well-conducted experiment 2. Treatments, control groups, experimental units, random assignments and replication Sources of bias and confounding, including placebo effect and blinding 4. Completely randomized design 5. Randomized block design, including matched pairs design D. Generalizability of results and types of conclusions that can be drawn from observational studies, experiments and surveys	statistical analysis. I can find bias in sampling methods. I can recognize when observational study is appropriate I can identify observational studies as retrospective or prospective. I can give and define the four basic principles of sound experimental design, control Randomize, replicate, and block. I can find the factors, treatments and response variable in a description of a designed experiment. I can use replication to mone for anecdotes to general conclusions. I can use a control groups with a placebo treatment in studies. I can relate the importance of blinging and double-blinding in experiments I can design a completely randomized experiments to test effect the effect of a single factor. I can design an experiment using blocking to reduce variation. I can report the results of an observational study. I can describe of an experiment for another researcher to replicate the study with the same methods. I can report statistical significance of the results.		

Unit 2 Common Core

CCSS.MATH.CONTENT.HSS.IC.A.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

CCSS.MATH.CONTENT.HSS.IC.A.2
Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation.

CCSS.MATH.CONTENT.HSS.IC.B.3
Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.

CCSS.MATH.CONTENT.HSS.IC.B.4
Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.
CCSS.MATH.CONTENT.HSS.IC.B.5
Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.
CCSS.MATH.CONTENT.HSS.IC.B.6
Evaluate reports based on data.

Unit 3 Randomness and Probability

Enduring Understandings:

Probability models are useful tools for making decisions and predictions. Probability is the basis of statistical inference.

The notion and behavior of a random variable is foundational to understanding probability distributions. The Law of Large Numbers is an important concept when simulating probability experiments. Probability models are useful tools for making decisions and predictions.

Essential Questions:

How can we base decisions on chance?
How can probability be used to simulate events and to predict future happenings?
What are the benefits of simulating events as opposed to gathering real data?
How can modeling predict the future?

Pacing	Topics	I can Statements	Resource	Assessment
December	Anticipating Patterns: Exploring random phenomena using probability and simulation. Probability is the tool used for anticipating what the distribution of data should look like under a given model. A. Probability 1. Interpreting probability, including long-run relative frequency interpretation 2. "Law of Large Numbers" concept 3. Addition rule, multiplication rule, conditional probability and independence 4. Discrete random variables and their probability distributions, including binomial and geometric 5. Simulation of random behavior and probability distributions 6. Mean (expected value) and standard deviation of a random variable, and linear transformation of a random variable B. Combining independent random variables 1. Notion of independence versus dependence 2. Mean and standard deviation for sums and differences of independent random variables	I can recognize random outcome in a real-world situation. I can recognize when events are disjoint and when they are independent. I can determine if an assignment of probabilities is possible. I can use and apply the Addition Rule. I can use and apply the Multiplication Rule. I can use and apply the Complement Rule. I can use the terms Sample space, disjoint events and independent events correctly. I can find probabilities for compound events. I can create a tree Diagram I can recognize random variables I an find the probability model for a discrete random variable. I can find the mean and the variance of a random variable.	Text Chapters 14-17	Investigative task Quiz Test

		I can use proper notation for population parameters. I can determine the new mean and standard deviation after adding a constant, Multiplying by a constant or adding or subtracting independent random variables.		

Unit 3 Common Core
CCSS.MATH.CONTENT.HSS.MD.B.5
(+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.
CCSS.MATH.CONTENT.HSS.MD.B.5.A
Find the expected payoff for a game of chance. For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant.
CCSS.MATH.CONTENT.HSS.MD.B.5.B
Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.
CCSS.MATH.CONTENT.HSS.MD.B.6
(+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).
CCSS.MATH.CONTENT.HSS.MD.B.7
(+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

Unit 4 Sampling Distributions and Inference for Proportions

Enduring Understandings:
Variation can be expected in the results of random samples and is affected by the design of the sample or experiment. Tests of significance and confidence intervals drive decision making in our world. Error analysis is a critical component of significance testing. Significance tests determine the likelihood of a sample.
Confidence intervals are effective tools for estimating the proportion of a population.

Essential Questions:
How can modeling predict the future?
How much evidence do you need before you are able to make a reasonable conjecture?
How is statistical inference used to draw conclusions from data?
How is probability used to express the strength of our conclusions?

Pacing	Topics	I can Statements	Resource	Assessment
January-February	Sampling distributions 1. Sampling distribution of a sample proportion 2. Sampling distribution of a sample mean 3. Central Limit Theorem 4. Sampling distribution of a difference between two independent sample proportions Statistical Inference: Estimating population parameters and testing Hypotheses.	I can assess the viability 0f samples I can Demonstrate a sampling distribution by simulation I can use simple distribution model to make simple statements about the distribution of a proportion or being under repeated sampling I can use confidence intervals as a way to describe the precision and the certainty of a statement about model parameter. I can examine data for violation of conditions that would make	Text Chapters 18-22	Investigative task Quiz Test

	Statistical inference guides the selection of appropriate models. A. Estimation (point estimators and confidence intervals) 1. Estimating population parameters and margins of error 2. Properties of point estimators, including unbiasedness and variability 3. Logic of confidence intervals, meaning of confidence level and confidence intervals, and properties of confidence intervals 4. Large sample confidence interval for a proportion 5. Large sample confidence interval for a difference between two proportions B. Tests of significance 1. Logic of significance testing, null and alternative hypotheses; p-values; 2. one- and two-sided tests; concepts of Type I and Type II errors; concept of power 3. Large sample test for a proportion 4. Large sample test for a difference between two proportions	inferences about a population proportion valid or invalid. I can construct a one-proportion Z-interval. I can perform a one-proportion Z-test I can find the null and alternative hypothesis for a one proportion Z test. I can identify and use the alternative hypothesis when testing hypothesis I can make meaning from a one-proportion Z-test I can complete the hypothesis test for a population proportion.I can find the confidence interval between two proportions. I can perform a significance test of the natural nail hypothesis that two population proportions are equal.		

Unit 4 Common Core

CCSS.MATH.CONTENT.HSS.IC.B.3
Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.
CCSS.MATH.CONTENT.HSS.IC.B.4
Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.
CCSS.MATH.CONTENT.HSS.IC.B.5
Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.
CCSS.MATH.CONTENT.HSS.IC.B.6
Evaluate reports based on data.

Unit 5 Inference for Means

Enduring Understandings:

Significance tests determine the likelihood of a sample.

Confidence intervals are effective tools for estimating the proportion or the mean of a population. Inference is a tool for validating a claim about a population parameter. Inference is a tool for estimating an unknown population parameter.

Essential Questions:

How do you determine if there is a statistically significant difference between two claims?

What does it mean to make an inference?

Pacing	Topics	I can Statements	Resource	Assessment
March	Confidence interval for a mean A. Confidence interval for a difference between two means (unpaired and paired) Test for a mean A. Test for a difference between two means (unpaired and paired) B. Simulation of t-distribution	I can't compute and interpret a t-test for the proportion. I can compute and interpret a t Based confidence interval for the proportion mean. I can interpret the confidence interval. I can perform a two sample t-test. I can find a pair confidence interval.	Text Chapters 23-25	Investigative task Quiz Test

Unit 5 Common core
Not Applicable

Unit 6 Bivariate Data

Enduring Understandings:
- Correlations does not imply causation.
- A linear model can be used to represent relationships between bivariate data.

Essential Questions:
- What is association? What is correlation? How are they connected?
- Does association imply causation?
- How can modeling data help us to understand patterns?
- When is it appropriate to use extrapolation to predict the future?

Pacing	Topics	I can Statements	Resource	Assessment
April	Exploring bivariate data 1. Analyzing patterns in scatterplots 2. Correlation and linearity 3. Least-squares regression line 4. Residual plots, outliers and influential points 5. Transformations to achieve linearity: logarithmic and power transformations	I recognize when two quantitative variables supports making a scatterplot. I can recognize the roles of variables. I know the conditions for conditions for correlation and how to check them. I can find correlations and between -1 an +1, and that each extreme indicates a perfect linear association. I find the magnitude of the correlation reflects the strength of a linear association as view in scatterplot. I can create a scatterplot. I can read a correlation table. I can find the strength of a scatterplot. I can identify and describe points that deviate for the overall pattern. I can use correlation as part of the	Text Chapters 7-10	

		description of a scatterplot. I can't identify response and explanatory variables in context. I can use linear equations to summarize the relationship between two variables.Press return keyl can find the regression equation. I can use the regression to protect a value of Y for a given x. I can compute the residual for each data value. I can find high leverage and influential points. I can describe the effects of high leverage and intellectual points. I can re-express data with powers. I can find effective re-expression for data I can read verse any of the common re-expressions.		

Unit 6 Common core

CCSS.MATH.CONTENT.HSS.ID.C.7
Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
CCSS.MATH.CONTENT.HSS.ID.C.8
Compute (using technology) and interpret the correlation coefficient of a linear fit.
CCSS.MATH.CONTENT.HSS.ID.C.9
Distinguish between correlation and causation.

Unit 7 Inference for Related Variables

Enduring Understandings:

Significance tests can also determine the likelihood of a sample from a series of proportions. Significance tests can also determine whether two variables are independent. Confidence intervals can estimate the variation in a bivariate sample's slope.

Essential Questions:

How can we verify that two variables are independent?
How do you find critical values for a chi-square test?

June.	Inference For Regression 1. Confidence interval for the slope of a least-squares regression line 2. Test for the slope of a least-squares regression line Chi-Squared Distributions 1. Simulation of Chi-square distribution 2. Chi-square test for goodness of fit, homogeneity of proportions, and independence (one- and	I can display and interpret counts and into wait table. I can use a chi-Square tables to perform Chi-Squared tests I can explain the nature of deviation from a null Hypothesis	Text Chapters 26-27	Investigative task Quiz Test

	two-way tables)			
Unit 7 Common core Not Applicable				