Map: **College Statistics** Type: **Consensus** Grade Level: **12** School Year: **2011-2012**

Author: **Kelly Cockren** District/Building: **Island Trees / Island Trees High School**

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	Essential Questions	Content	Skills	Assessments	Standards / PIs	Resources / Notes
Unit 1	How do you design a statistical study? How can statistics be used in advertising? If you were conducting a census, how would you ensure that your results were accurate?	**Introduction to Statistics** Data Classification Types of Data Experimental Design **VOCABULARY** data, statistics, population, sample, parameter, statistic, descriptive statistics, inferential statistics, qualitative data, quantitative data, observational study, experiment, simulation, survey, census, sampling, random sample,	Recognizes and explains the difference between a population and a sample Recognizes and explains the difference between a parameter and a statistic Labels the different branches of statistics as descriptive and inferential Distinguishes between qualitative data and quantitative data Describes the steps to design a statistical study Differentiates between the different kinds of data collection		**MST3-A.S.1** **MST3-A.S.10** **MST3-A2.S.1** **MST3-A2.S.2**	
Unit 2	How are frequency distributions graphed? Why is it useful to graph data in various forms? How can the shapes of various distributions be described? How do you find measures of variation? How can Chebychev's Theorem be applied to statistical studies?	**Descriptive Statistics** Frequency distributions Graphs of quantitative, qualitative, and paired data sets Mean, Median, Mode Weighted Mean Mean of Grouped Data Shape of Distributions Range, Variance, Standard Deviation Interpreting Standard Deviation	Constructs a frequency distribution from a data set Computes midpoint, relative frequency, and cummulative frequency Constructs a frequency histogram, frequency polygon, relative frequency histogram, and ogive Interprets and analyzes graph results Constructs single stem-and-leaf plot, back-to-back stem-and-leaf plot, dot plot, pie chart, Pareto chart, scatter plot and		**MST3-A2.S.3** **MST3-A2.S.4** **MST3-A.S.11** **MST3-A.S.9** **MST3-A.S.6** **MST3-A.S.7** **MST3-A.S.5** **MST3-A.S.4**	

		Empirical Rule Chebychev's Theorem Standard Deviation of Group Data Quartiles Percentiles The Standard Score **VOCABULARY** frequency distribution, intervals, frequency, midpoint, relative freqency, cumulative frequency, frequency histogram, class boundaries, frequency polygon, relative frequency histogram, ogive, stem-and-leaf plot, dot plot, pie chart, Pareto chart, paired data sets, scatter plot, measures of central tendencey, mean, median, mode, bimodal, outlier, weighted mean, mean of a frequency distribution, symmetric, uniform, skewed left, skewed right, range, deviation, population variance, population standard deviation, sample variance, sample standard deviation, Empirical Rule, Chebychev's Theorem, quartiles, interquartile range, five-number summary, standard score (z-score)	time series chart Interprets and analyzes various graph results Distingushes between the different methods of graphical representation of data Identifies the symbols used for population mean and sample mean Calculates mean, median, and mode of a data set Determines when a data set is bimodal Identifies outliers for a data set Calculates a weighted mean for a data set Determines the mean of a frequency distribution Characterizes the shape of a distribution as symmetric, uniform, skewed left (negative), or skewed right (positive) Computes the range of a data set Identifies the symbols associated with variance and standard deviation Computes and interprets deviation, population variance and population standard deviation by hand and with the help of a graphing calculator Computes and interprets sample variance and sample standard deviation by hand and with the help of a graphing calculator Recognizes and applies the		

			Empirical Rule for symmetric distributions Recognizes and applies Chebychev's Theorem for all distributions Computes standard deviation for grouped data sets Identifies and calculates the three quartiles of a data set by hand and by the use of a graphing calculator Defines and calculates the interquartile range of a data set Recognizes the five number summary of a data set and constructs a box-and-whisker plot using this data Interprets percentiles Identifies the symbol for standard score (z-score) Calculates and compares z-score			
Unit 3	How do you distinguish between empirical, classical, and subjective probability? How does finding the probability of two mutually exclusive events relate to a statistical study? Why are permutations and combinations so important in the study of statistics?	**Probability** Probability Experiments Types of Probability Law of Large Numbers Range of Probabilities Rule Complementary Events Conditional Probability Independent and Dependent Events The Multiplication Rule	Identifies a sample space Constructs a tree diagram Identifies simple events Calculates classical and empirical probabilities Compares and constrasts classical and empirical probabilities Calculates probabilities using frequency distributions Classifies types of probability Applies the range of probabilities rule		**MST3-A.S.18** **MST3-A.S.19** **MST3-A.S.20** **MST3-A.S.21** **MST3-A.S.22** **MST3-A.S.23** **MST3-A2.S.9** **MST3-A2.S.10** **MST3-A2.S.11** **MST3-A2.S.12** **MST3-A2.S.13** **MST3-A2.S.14**	

Mutually Exclusive Events	Finds the probability of the complement of an event
The Addition Rule	
The Fundamental Counting Principle	Defines and analyzes conditional probability
Permutations	
Combinations	
Applications of Counting Principles	Recognizes the difference between independent and dependent events
VOCABULARY	
probability experiment, outcome, sample space, event, classical (theoretical) probability, empirical (statistical) probability, compliment of an event, conditional probability, independent events, dependent events, multiplication rule, mutually exclusive, addition rule, counting principle, permutation, factorial, distinguishable permutations, combinations,	Uses a variety of methods to solve a probability problem
	Calculates probabilities involving independent and dependent events
	Uses the multiplication rule to calculate probabilties
	Determines if two events are mutually exclusive
	Calculates probabilities of mutually exclusive events
	Applies the addition rule for probability
	Applies the Fundamental Counting Principle
	Distinguishes between permutations and combinations
	Computes factorials

			Applies various methods to solve probability problems			

	Essential Questions	Content	Skills	Assessments	Standards/PIs	Resources/Notes
Unit 4	How do you construct and interpret probability distributions? How is expected value used in games of chance? Why is binomial probability only used in certain experiments? How are binomial, geometric, and poisson probability distributions similar? How are binomial, geometric, and poisson probability distributions different? Why do games of chance lead to such successful businesses?	**Discrete Probability Distributions** Random Variables Discrete Probability Distributions Mean, Variance and Standard Deviation Expected Value Binomial Experiments Binomial Probability Formula Finding Binomial Probabilities Graphing Binomial Distributions Mean, Variance, Standard Deviation The Geometric Distribution The Poisson Distribution **VOCABULARY** random variable, discrete, continuous, discrete probability distribution, mean, variance, standard deviation, expected value, binomial	Defines random variable. Distinguishes between discrete and continuous random variables. Defines discrete probability distributions. Constructs and graphs a discrete probability distribution. Verifies probability distributions. Calculates the mean, variance, and standard deviation. Defines and calculates expected value. Defines binomial experiment. Determines if a given situation represents a binomial experiment. Identifies notation for binomial experiments. Applies the binomial formula to answer probability problems. Constructs binomial probability distribution graphs.		**MST3-A2.S.15**	

		experiment, trials, probability of success, probability of failure, binomial probability distribution, geometric distribution, Poisson distribution,	Calculates binomial probability using a graphing calculator. Calculates and interprets the mean, variance, and standard deviation of binomial distributions. Defines the properties of a Geometric distribution. Calculates probabilities using the Geometric distribution. Defines the properties of a Poisson distribution. Calculates probabilities using the Poisson distribution. Distinguishes between a Geometric and a Poisson probability distribution.			
Unit 5	How do you apply and interpret normal probability distribution graphs? How are probabilities calculated for normally distributed variables? How are z-score values related to x-values? Why is the Central Limit Theorem so	**Normal Probability Distributions** Properties of a Normal Distribution Interpreting Graphs of the Normal Distribution The Standard Normal Distribution	Identifies the properties of a normal distribution. Interprets the graphs of a normal distribution. Interprets the properties of the standard normal distribution. Finds a given area under the standard normal curve using		**MST3-A2.S.16**	

important in statistics?	Probability and Normal Distributions	the appropriate table and by using a graphing calculator.				
	Finding z-Score	Sketches an appropriate curve to represent the given area.				
	Transforming a z-Score to an x-Value					
	Finding a specific data value for a given probability	Recalls the z-Score formula.				
	Sampling Distributions	Calculates probabilities for normal distributions using z-Score.				
	The Central Limit Theorem	Converts an x-Value to a z-Score, and then calculates a given probability.				
	Probability and the Central Limit Theorem	Sketches an appropriate curve to represent the given probability.				
	Approximating a Binomial Distribution	Finds the z-Score that corresponds to a cumulative area, percent, or percentile.				
	Correction for Continuity					
	Approximating Binomial Probabilities	Uses the z-Score formula to find a corresponding x-Value.				
	VOCABULARY	Finds a specific data value that corresponds to a given percent.				
	continuous random variable, continuous probability distribution, normal distribution, normal curve, the standard normal distribution, z -score, percentile, sampling distribution, samping distribution of sample means, standard error of the mean, The Central Limit Theorem, correction for continuity	Identifies the properties of a sampling distribution of sample means.				
		Compares the mean and standard deviation of a population to the mean and standard deviation of a sample.				

				Calculates the mean and standard deviation of a sampling distribution of sample means.				
				Identifies the properties of the Central Limit Theorem.				
				States new formulas for variance and standard deviation that are applied to the Central Limit Theorem.				
				Interprets the Central Limit Theorem.				
				Calculates probabilities using the Central Limit Theorem (sampling distributions).				
				Calculates probabilities for a population and a sample, and interprets the answers in terms of an original claim.				
				Recalls the properties of a binomial experiment (n, p, q).				
				Identifies the conditions necessary for a binomial distribution to be approximated by a normal distribution.				
				Determines if a binomial experiment can be approximated by a normal distribution.				
				Applies a correction for continuity to convert a binomial interval to a normal distribution interval.				

			Uses the normal distribution to approximate binomial probabilities.			
Unit 6	Why is the interpretation of confidence intervals so important in statistics? How do you know when the t -distribution is appropriate to use? How do you ensure that statistical results are meaningful and useful?	**Confidence Intervals** Estimating Population Parameters Confidence Intervals for the Population Mean Sample Size The t-Distribution Confidence Intervals and t-Distribution Point Estimate for the Population Proportion p Confidence Intervals for a Population Proportion p Increasing Sample Size to Increase Precision The Chi-Square Distribution Confidence Intervals for Chi-Square **VOCABULARY** point estimate, interval estimate, level of confidence,	Calculates a point estimate. Compares point estimate and interval estimate. Computes a margin of error. Constructs a confidence interval for a population mean. Constructs a confidence interval for a population mean using a graphing calculator. Calculates a minimum sample size for a given confidence level. Determines an appropriate critical value for a given confidence level using an appropriate table. Identifies the properties of the t-distribution. Calculates the appropriate degrees of freedom. Determines the critical values for a given confidence level and sample size.			

		critical values, sampling error, margin of error, confidence interval, sample size, t-distribution, degrees of freedom, population proportion, "p hat", "q hat", chi-square distribution	Calculates a margin of error. Constructs a confidence interval for a t-distribution. Constructs a confidence interval using a graphing calculator. Compares the normal distribution to the t-distribution. Calculates a point estimate for the population proportion ("p hat"). Calculates "q hat". Calculates a margin of error for the population proportion. Constructs a confidence interval for the population proportion. Calculates a minimum sample size to estimate p. Identifies the properties of the chi-square distribution. Calculates the point estimate for variance and standard deviation. Calculates the appropriate degrees of freedom.				

			Determines a left-tail and a right-tail critical value for a given level of confidence and sample size. Constructs a confidence interval for population variance and standard deviation.			

	Essential Questions	Content	Skills	Assessments	Standards / PIs	Resources / Notes
Unit 7	Why is hypothesis testing conducted? How is hypothesis testing for large samples applied? How is hypothesis testing for small samples (n<30) applied? How are the conclusions drawn from hypothesis testing used to make decisions?	**Hypothesis Testing With One Sample** Hypothesis Tests Stating a Hypothesis Types of Errors and Level of Significance Statistical Tests and P-Values Making a Decision and Interpreting the Decision Strategies for Hypothesis Testing Using P-Values to Make Decisions Using P-Values for a z-Test Rejection Regions and Critical Values Using Rejection Regions for a z-Test Critical Values in a t-Distribution The t-test for a Mean (n < 30, st dev unknown) Using P-Values with t -Tests	Compares the notations used in the null hypothesis and the alternative hypothesis. Writes the null and alternative hypotheses given a particular claim. Identifies type I and type II errors. Identifies the nature of a hypothesis test. Interprets a decision made from a hypothesis test. Lists the steps used for hypothesis testing. Interprets a P-value to make conclusions. Determines the P-value for a left-tailed, right-tailed, or two-tailed test. Calculates the standardized value for the test statistic (z-test). Interprets hypothesis testing using P-values. Determines critical values for a left-tailed, right-tailed, or two-tailed test.			C e e e

Hypothesis Test for Proportions	Determines whether or not to reject the null hypothesis based on a rejection region.
Critical Values for a Chi-Square Test	
Chi-Square Test for Variance and Standard Deviation	Determines critical values for t.
	States the guidelines for using the t-Test for a Mean.
VOCABULARY	
hypothesis test, null hypothesis, alternative hypothesis, type I error, type II error, level of significance, test statistic, P-value (probability value), left-tailed test, right-tailed test, two-tailed test, alpha, beta, z-test for a mean, test statistic, standardized test statistic, rejection region (critical region), critical value, t-test for a mean, z-test for a proportion, chi-square test for a variance or standard deviation,	Tests and interprets a given claim using the properties of the t-Test.
	Determines a P-value with a t-Test using an appropriate table and a graphing calculator.
	States the guidelines for using a z-Test for a Proportion p.
	Tests and interprets a given claim for a proportion.
	States the guidelines for finding critical values for the chi-square test.
	Determines critical values for chi-square.
	States the guidelines for using the chi-square test for a variance or standard deviation.
	Tests and interprets a given claim for the population variance

			and standard deviation.			
Unit 8	How is hypothesis testing with one sample different from hypothesis testing with two samples? Why do some hypothesis tests use a z-Test while others use a t-test? How is hypothesis testing with two samples important in the business world?	**Hypothesis Testing with Two Samples** Overview of Two-Sample Hypothesis Testing Two-Sample z-Test for the Difference Between Means Two-Sample t-Test for the Difference Between Means Independent and Dependent Samples The t-Test for the Difference Between Means Two-Sample z-Test for the Difference Between Proportions **VOCABULRY** null hypothesis, alternative hypothesis, two-sample z-test, test statistic, standardized test statistic, two-sample t-test, pooled estimate of the standard deviation, independent, dependent, paired samples (matched samples)	Compares the symbols used in the null and alternative hypotheses. Determines the conditions needed to perform a two-sample z-Test for the Difference of Two Means. States the guidelines for using a two-sample z-Test for the Difference of Two Means. Determines and interprets a two-sample z-Test for the Difference of Two Means. Uses a graphing calculator to perform a z-Test. Compares the requirements of a z-test to the requirements of a t-test. States the guidelines for using a two-sample t-Test for the Difference Between Means. Calculates a pooled estimate of the standard deviation. Tests and interprets a given claim using a two-sample t-test.			(

			Classifies a pair of samples as independent or dependent. Identifies the conditions needed to conduct a t-test for the Difference Between Means. States the guidelines for using a t-test for the Difference Between Means (Dependent Samples). Tests and interprets a given claim using the t-test for the Difference Between Means. Identifies the conditions necessary to conduct a two-sample z-Test for the Difference Between Proportions. States the guidelines for using a two-sample z-Test for the Difference Between Proportions. Tests and interprets a given claim using a two-sample z-Test for the Difference Between Proportions.			
Unit 9	How are correlation and causation different? How can the concepts of finding the line of best fit be applied to the business world?	**Correlation and Regression** An Overview of Correlation Correlation Coefficient	Recalls a scatter plot as a method of data organization. Constructs a scatter plot by hand and by using a graphing calculator.		**MST3-A.S.8** **MST3-A.S.12** **MST3-A.S.13** **MST3-A.S.14** **MST3-A.S.17** **MST3-A2.S.7**	

	How are correlation coefficient and correlation of determination applied to linear regression problems? How can the business world use linear regression to predict future growth/decay of a company?	Using a Table to Test a Population Correlation Coefficient Hypothesis Testing for a Population Correlation Coefficient p Correlation and Causation Regression Lines Application of Regression Lines Variation about a Regression Line The Coefficient of Determination The Standard Error of Estimate Prediction Intervals Finding a Multiple Regression Equation Predicting y-Values **VOCABULARY** correlation, independent (explanatory) variable, dependent (response) variable, scatter plot, correlation coefficient, test statistic, standardized test statistic, regression line, line of best fit, total deviation,	Defines and interprets correlation coefficient. Calculates the correlation coefficient for a data set by hand (will not be required) and by using a graphing calculator. Determines the significance of a correlation coefficient using an appropriate table. States the guidelines for using the t-Test for the Correlation Coefficient p. Uses a t-Test to determine whether the sample correlation coefficient r provides enough information to conclude that the population correlation coefficient p is significant. Differentiates between correlation and causation. Recalls slope and y-intercept concepts from Algebra. Determines the equation of a regression line by hand and by using a graphing calculator. Interprets a linear regression equation. Predicts y-values using regression equations.		**MST3-A2.S.8**	

		explained deviation, unexplained deviation, coefficient of determination rsquared, standard error of estimate, bivariate normal distribution, c-prediction interval, multiple regression equation	Defines total variation, explained variation, and unexplained variation. Calculates the coefficient of determination (r squared). States the guidelines for finding the standard error of estimate. Calculates the standard error or estimate. Constructs a prediction interval for y for a specific value of x. Calculates a multiple regression equation using a graphing calculator. Predicts y-values using multiple regression equations.			

	Essential Questions	Content	Skills	Assessments	Standards/PIs	Resources/Notes

Key to Standards used in this Map

MST3-A.S.1 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Organization and Display of Data] - Performance Indicator A.S.1 - categorize data as qualitative or quantitative [Algebra]

MST3-A.S.4 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Organization and Display of Data] - Performance Indicator A.S.4 - compare and contrast the appropriateness of different measures of central tendency for a given data set [Algebra]

MST3-A.S.5 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Organization and Display of Data] - Performance Indicator A.S.5 - construct a histogram, cumulative frequency histogram, and a box-and-whisker plot, given a set of data [Algebra]

MST3-A.S.6 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Organization and Display of Data] - Performance Indicator A.S.6 - understand how the five statistical summary (minimum, maximum, and the three quartiles) is used to construct a box-and-whisker plot [Algebra]

MST3-A.S.7 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Organization and Display of Data] - Performance Indicator A.S.7 - create a scatter plot of bivariate data [Algebra]

MST3-A.S.8 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Organization and Display of Data] - Performance Indicator A.S.8 - construct manually a reasonable line of best fit for a scatter plot and determine the equation of that line [Algebra]

MST3-A.S.9 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Analysis of Data] - Performance Indicator A.S.9 - analyze and interpret a frequency distribution table or histogram, a cumulative frequency distribution table or histogram, or a box-and-whisker plot [Algebra]

MST3-A.S.10 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Analysis of Data] - Performance Indicator A.S.10 - evaluate published reports and graphs that are based on data by considering: experimental design, appropriateness of the data analysis, and the soundness of the conclusions [Algebra]

MST3-A.S.11 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Analysis of Data] - Performance Indicator A.S.11 - find the percentile rank of an item in a data set and identify the point values for first, second, and third quartiles [Algebra]

MST3-A.S.12 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Analysis of Data] - Performance Indicator A.S.12 - identify the relationship between the independent and dependent variables from a scatter plot (positive, negative, or none) [Algebra]

MST3-A.S.13 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Analysis of Data] - Performance Indicator A.S.13 - understand the difference between correlation and causation [Algebra]

MST3-A.S.14 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Analysis of Data] - Performance Indicator A.S.14 - identify variables that might have a correlation but not a causal relationship [Algebra]

MST3-A.S.17 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will make predictions that are based upon data analysis. [Predictions from Data] - Performance Indicator A.S.17 - use a reasonable line of best fit to make a prediction involving interpolation or extrapolation [Algebra]

MST3-A.S.18 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A.S.18 - know the definition of conditional probability and use it to solve for probabilities in finite sample spaces [Algebra]

MST3-A.S.19 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A.S.19 - determine the number of elements in a sample space and the number of favorable events [Algebra]

MST3-A.S.20 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A.S.20 - calculate the probability of an event and its complement [Algebra]

MST3-A.S.21 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A.S.21 - determine empirical probabilities based on specific sample data [Algebra]

MST3-A.S.22 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A.S.22 - determine, based on calculated probability of a set of events, if: some or all are equally likely to occur - one is more likely to occur than another - whether or not an event is certain to happen or not to happen [Algebra]

MST3-A.S.23 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A.S.23 - calculate the probability of: a series of independent events - two mutually exclusive events - two events that are not mutually exclusive [Algebra]

MST3-A2.S.1 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Collection of Data] - Performance Indicator A2.S.1 - understand the differences among various kinds of studies [Algebra 2 and Trigonometry]

MST3-A2.S.2 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Collection of Data] - Performance Indicator A2.S.2 - determine factors which may affect the outcome of a survey [Algebra 2 and Trigonometry]

MST3-A2.S.3 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Organization and Display of Data] - Performance Indicator A2.S.3 - calculate measures of central tendency with group frequency distributions [Algebra 2 and Trigonometry]

MST3-A2.S.4 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will collect, organize, display, and analyze data. [Organization and Display of Data] - Performance Indicator A2.S.4 - calculate measures of dispersion (range, quartiles, interquartile range, standard deviation, variance) for both samples and populations [Algebra 2 and Trigonometry]

MST3-A2.S.7 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will make predictions that are based upon data analysis. [Predictions from Data] - Performance Indicator A2.S.7 - determine the function for the regression model, using appropriate technology, and use the regression function to interpolate and extrapolate from the data [Algebra 2 and Trigonometry]

MST3-A2.S.8 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will make predictions that are based upon data analysis. [Predictions from Data] - Performance Indicator A2.S.8 - interpret within the linear regression model the value of the correlation coefficient as a measure of the strength of the relationship [Algebra 2 and Trigonometry]

MST3-A2.S.9 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A2.S.9 - differentiate between situations requiring permutations and those requiring combinations [Algebra 2 and Trigonometry]

MST3-A2.S.10 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A2.S.10 - calculate the number of possible permutations (nPr) of n items taken r at a time [Algebra 2 and Trigonometry]

MST3-A2.S.11 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A2.S.11 - calculate the number of possible combinations (nCr) of n items taken r at a time [Algebra 2 and Trigonometry]

MST3-A2.S.12 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A2.S.12 - use permutations, combinations, and the fundamental principle of counting to determine the number of elements in a sample space and a specific subset (event) [Algebra 2 and Trigonometry]

MST3-A2.S.13 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A2.S.13 - calculate theoretical probabilities, including geometric applications [Algebra 2 and Trigonometry]

MST3-A2.S.14 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A2.S.14 - calculate empirical probabilities [Algebra 2 and Trigonometry]

MST3-A2.S.15 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A2.S.15 - know and apply the binomial probability formula to events involving the terms exactly, at least, and at most [Algebra 2 and Trigonometry]

MST3-A2.S.16 [1 occurence] - MST Standard 3 - Statistics and Probability Strand - Students will understand and apply concepts of probability. [Probability] - Performance Indicator A2.S.16 - use the normal distribution as an approximation for binomial probabilities [Algebra 2 and Trigonometry]