# Curriculum Map
# Statistics and Discrete Math CP2 (366)
# Saugus High School
# Saugus Public Schools
# 2009-2010

## Week 1

### *Performance Standards*

***The students will:***
**14.0** Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line graphs and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

### Unit/Topic/Lesson
### UNIT ONE
### Introduction to Statistics

1. Overview of Statistical Concepts
2. The Nature of Data
3. Statistics (Uses and Abuses)
4. Design of Experiments

### Mission and Expectations

*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To understand what is statistics studies.
2. To understand how to design an experiment.

### Essential Question

What is important in designing an experiment?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter One lessons
2. Chapter One exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving the Introduction to Statistics.

**Completion date:**

**Completed by:**

**Comments:**

## Week 2

### *Performance Standards*

***The students will:***
**14.0** Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line graphs and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

### Unit/Topic/Lesson
### UNIT TWO
### Working with Data

1. Overview of Data Concepts
2. Summarizing Data with Frequency Tables
3. Pictures of Data
4. Measures of Center

### Mission and Expectations

*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To be able to display data in a variety of graphs and pictures.
2. To work with data using frequency tables.

### Essential Question

What are some of the most useful graph of data display?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Two lessons
2. Chapter Two exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 3

### *Performance Standards*

***The students will:***

**14.0** Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line graphs and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

**6.0** Students know the definition of the *variance of a discrete random variable* and can determine the variance for a particular discrete random variable.

### Unit/Topic/Lesson
### UNIT TWO
### Working with Data

1. Measure of Variation
2. Measures of Position
3. Exploratory Data Analysis

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To understand the empirical rule.
2. To understand variation.
3. To understand position of data.

### Essential Question

What is standard deviation and how do you find the percentile ranking?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Two lessons
2. Chapter Two exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Working with Data.

**Completion date:**

**Completed by:**

**Comments:**

## Week 4

### *Performance Standards*

***The students will:***

**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.

**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT THREE
### Probability

1. Introduction to Probability Concepts
2. Fundamentals of Probability
3. Addition Rule
4. Basic Multiplication Rules

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To work with basic rules of probability.
2. To understand how to make inference about the population based on probability.

### Essential Question

How do you use probability to infer about the population?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Three lessons
2. Chapter Three exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 5

### *Performance Standards*

***The students will:***
**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.
**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT THREE
### Probability

1. Multiplication Rule of Complements
2. Multiplication Rule Using Condition Probability
3. Counting Rules

### Mission and Expectations

*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To understand different rules of probability.
2. To understand the counting concept.
3. To be able to use probability with these rules.

### Essential Question

What is important about permutation, combination, tree diagrams and other methods of counting?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Three lessons
2. Chapter Three exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Probability.

**Completion date:**

**Completed by:**

**Comments:**

## Week 6

### *Performance Standards*

***The students will:***
**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.
**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.
**3.0** Students demonstrate an understanding of the notion of *discrete random variables* by using this concept to solve for the probabilities of outcomes, such as the probability of the occurrence of five or fewer heads in 14 coin tosses.

### Unit/Topic/Lesson
### UNIT FOUR
### Probability Distributions

1. Introduction to Probability Distributions
2. Random Variables
3. Binomial Probability Distributions

### Mission and Expectations

*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To understand binomial distribution.
2. To work with rules of binomial distribution.

### Essential Question

What is binomial distribution?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Four lessons
2. Chapter Four exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 7

### *Performance Standards*

***The students will:***

**3.0** Students demonstrate an understanding of the notion of *discrete random variables* by using this concept to solve for the probabilities of outcomes, such as the probability of the occurrence of five or fewer heads in 14 coin tosses.

**5.0** Students know the definition of the *mean of a discrete random variable* and can determine the mean for a particular discrete random variable

**7.0** Students demonstrate an understanding of the standard distributions (normal, binomial, and exponential) and can use the distributions to solve for events in problems in which the distribution belongs to those families.

**10.0** Students know the definitions of the *mean, median,* and *mode of distribution* of data and can compute each of them in particular situations.

### Unit/Topic/Lesson
### UNIT FOUR
### Probability Distributions

1. Mean for Binomial Distribution
2. Variance for Binomial Distribution
3. Standard Deviation for Binomial Distribution

### Mission and Expectations

*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To understand the mean for binomial distribution.
2. To understand variance for binomial distribution.
3. To understand standard deviation for binomial distribution.

### Essential Question

How do you use binomial distribution to infer about the population?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Four lessons
2. Chapter Four exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Probability Distributions.

**Completion date:**

**Completed by:**

**Comments:**

## Week 8

### *Performance Standards*

***The students will:***

**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

**4.0** Students understand the notion of a *continuous random variable* and can interpret the probability of an outcome as the area of a region under the graph of the probability density function associated with the random variable.

**7.0** Students demonstrate an understanding of the standard distributions (normal, binomial, and exponential) and can use the distributions to solve for events in problems in which the distribution belongs to those families.

### Unit/Topic/Lesson
### UNIT FIVE
### Normal Probability Distributions

1. Introduction to Normal Probability Distributions
2. The Standard Normal Distribution
3. Finding Probabilities with Normal Distributions

### Mission and Expectations

*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To understand normal distribution.
2. To understand probabilities associated with normal distribution.

### Essential Question

What is meant by normal distribution?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Five lessons
2. Chapter Five exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 9

### *Performance Standards*

***The students will:***
**7.0** Students demonstrate an understanding of the standard distributions (normal, binomial, and exponential) and can use the distributions to solve for events in problems in which the distribution belongs to those families.
**9.0** Students know the central limit theorem and can use it to obtain approximations for probabilities in problems of finite sample spaces in which the probabilities are distributed binomially.

### Unit/Topic/Lesson
### UNIT FIVE
### Normal Probability Distributions

1. Finding Values with Normal Distributions
2. The Central Limit Theorem

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives
1. To understand the central limit theorem.
2. To understand its connection to normal distribution

### Essential Question
What is the central limit theorem?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Five lessons
2. Chapter Five exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 10

### *Performance Standards*

***The students will:***
**7.0** Students demonstrate an understanding of the standard distributions (normal, binomial, and exponential) and can use the distributions to solve for events in problems in which the distribution belongs to those families.
**9.0** Students know the central limit theorem and can use it to obtain approximations for probabilities in problems of finite sample spaces in which the probabilities are distributed binomially.

### Unit/Topic/Lesson
### UNIT FIVE
### Normal Probability Distributions

1. Normal Distribution as an Approximation to Binomial Distribution
2. Review of Normal Probability Distributions

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives
1. To understand the approximation of binomial to a normal distribution.
2. To understand normal distributions.

### Essential Question
How do you approximate binomial distribution to normal distribution?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Five lessons
2. Chapter Five exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Normal Probability Distributions.

**Completion date:**

**Completed by:**

**Comments:**

## Week 11

### *Performance Standards*

***The students will:***
**11.0** Students compute the variance and the standard deviation of a distribution of data.
**15.0** Students are familiar with the notions of a statistic of a distribution of values, of the sampling distribution of a statistic, and of the variability of a statistic.

### Unit/Topic/Lesson
### UNIT SIX
### Estimates and Sample Sizes

1. Introduction to Estimates and Sample Sizes
2. Estimating a Population Mean: Large Samples

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives
1. To work with large samples of data.
2. To estimate mean of the population from large samples.

### Essential Question
How do you estimate $\mu$ from large samples?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Six lessons
2. Chapter Six exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 12

### *Performance Standards*

***The students will:***
**11.0** Students compute the variance and the standard deviation of a distribution of data.
**15.0** Students are familiar with the notions of a statistic of a distribution of values, of the sampling distribution of a statistic, and of the variability of a statistic.

### Unit/Topic/Lesson
### UNIT SIX
### Estimates and Sample Sizes

1. Estimating a Population Mean: Small Samples
2. Determining Sample Size Required to Estimate $\mu$

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives
1. To understand how to estimate $\mu$ from small samples.
2. To determine the sample size required to estimate $\mu$ .

### Essential Question
How do you decide what is a proper sample size to estimate $\mu$ ?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Six lessons
2. Chapter Six exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 13

### *Performance Standards*

***The students will:***
**11.0** Students compute the variance and the standard deviation of a distribution of data.
**18.0** Students determine the *P*-value for a statistic for a simple random sample from a normal distribution.

### Unit/Topic/Lesson
### UNIT SIX
### Estimates and Sample Sizes

1. Estimating a Population Proportion
2. Estimating a Population Variance

### Mission and Expectations
*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives
1. To understand how to estimate the population proportion.
2. To understand how to estimate the population variance.

### Essential Question

How do you estimate properly the population proportion and variance?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Six lessons
2. Chapter Six exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving estimates and Sample Size.

**Completion date:**

**Completed by:**

**Comments:**

## Week 14

### *Performance Standards*

***The students will:***

**15.0** Students are familiar with the notions of a statistic of a distribution of values, of the sampling distribution of a statistic, and of the variability of a statistic.
**18.0** Students determine the *P*-value for a statistic for a simple random sample from a normal distribution.

### Unit/Topic/Lesson
### UNIT SEVEN
### Hypothesis Testing

1. Introduction to Hypothesis Testing
2. Fundamentals of Hypothesis Testing

### Mission and Expectations
*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives
1. To understand why testing is necessary.
2. To understand hypothesis testing.

### Essential Question

What is the hypothesis testing?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Seven lessons
2. Chapter Seven exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 15

### *Performance Standards*

***The students will:***

**8.0** Students determine the mean and the standard deviation of a normally distributed random variable.
**10.0** Students know the definitions of the *mean, median,* and *mode of distribution* of data and can compute each of them in particular situations.
**17.0** Students determine confidence intervals for a simple random sample from a normal distribution of data and determine the sample size required for a desired margin of error.
**18.0** Students determine the *P*-value for a statistic for a simple random sample from a normal distribution.

### Unit/Topic/Lesson
### UNIT SEVEN
### Hypothesis Testing

1. Testing a Claim About a Mean: Large Samples
2. Testing a Claim About a Mean: Small Samples

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To understand how to test about a mean with large samples.
2. To understand how to test about a mean with small samples.

### Essential Question

How to we test a claim about mean?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Seven lessons
2. Chapter Seven exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 16

### *Performance Standards*

***The students will:***

**11.0** Students compute the variance and the standard deviation of a distribution of data.

**17.0** Students determine confidence intervals for a simple random sample from a normal distribution of data and determine the sample size required for a desired margin of error.
**18.0** Students determine the *P*-value for a statistic for a simple random sample from a normal distribution.

### Unit/Topic/Lesson
### UNIT SEVEN
### Hypothesis Testing

1. Testing a Claim About a Proportion
2. Testing a Claim About a Standard Deviation
3. Testing a Claim About a Variance

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To understand how test about a proportion.
2. To understand how test about a standard deviation.
3. To understand how test about a variance.

### Essential Question

How do you test a claim about a proportion, standard deviation, or variance?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Seven lessons
2. Chapter Seven exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Hypothesis Testing.

**Completion date:**

**Completed by:**

**Comments:**

## Week 17

### *Performance Standards*

***The students will:***

**11.0** Students compute the variance and the standard deviation of a distribution of data.
**17.0** Students determine confidence intervals for a simple random sample from a normal distribution of data and determine the sample size required for a desired margin of error.
**18.0** Students determine the *P*-value for a statistic for a simple random sample from a normal distribution.

### Unit/Topic/Lesson
### UNIT EIGHT
### Inferences from Two Samples

1. Introduction to Inferences from Two Samples
2. Inferences About Two Samples
3. Inferences About Two Samples Independent and Large Samples

### Mission and Expectations

*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To understand what makes two samples independent.
2. To understand inference about two means that are independent and from large samples.

### Essential Question

How do we infer about the population given two samples that are independent and large?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Eight lessons
2. Chapter Eight exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 18

### *Performance Standards*

***The students will:***

**11.0** Students compute the variance and the standard deviation of a distribution of data.
**17.0** Students determine confidence intervals for a simple random sample from a normal distribution of data and determine the sample size required for a desired margin of error.
**18.0** Students determine the *P*-value for a statistic for a simple random sample from a normal distribution.

### Unit/Topic/Lesson
### UNIT EIGHT
### Inferences from Two Samples

1. Inferences About Two Means
2. Inferences About Matched Pairs

### Mission and Expectations

*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To understand what makes two samples matched pairs.
2. To understand inference about two means if they are matched pairs.

### Essential Question

What are matched pairs and how do we use them to infer about the population?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Eight lessons
2. Chapter Eight exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 19

### *Performance Standards*

***The students will:***
**11.0** Students compute the variance and the standard deviation of a distribution of data.
**18.0** Students determine the *P*-value for a statistic for a simple random sample from a normal distribution.

### Unit/Topic/Lesson
### UNIT EIGHT
### Inferences from Two Samples

1. Inferences About Two Proportions
2. Review of Inferences

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To understand inference about two proportions.
2. To review all concepts involving inference.

### Essential Question

How do we predict proportions for the population given two proportions from two different samples?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Eight lessons
2. Chapter Eight exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Inferences from Two Samples.

**Completion date:**

**Completed by:**

**Comments:**

## Week 20

### *Performance Standards*

***The students will:***
**13.0** Students know what the *correlation coefficient of two variables* means and are familiar with the coefficient's properties.

### Unit/Topic/Lesson
### UNIT NINE
### Correlation and Regression

1. Introduction and Overview of Correlation and Regression
2. Correlation

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To understand correlation.
2. To understand to plot data.
3. To be able to read a scatter plot.

### Essential Question

What is correlation?

### Teacher Resources

*Essentials of Statistics ©2002*

1. Chapter Nine lessons
2. Chapter Nine exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 21

### *Performance Standards*

***The students will:***
**6.0** Students know the definition of the *variance of a discrete random variable* and can determine the variance for a particular discrete random variable.
**12.0** Students find the line of best fit to a given distribution of data by using least squares regression.

### Unit/Topic/Lesson
### UNIT NINE
### Correlation and Regression

1. Regression
2. Linear Regression
3. Quadratic Regression
4. Exponential Regression

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives
1. To understand the concept of regression.
2. To intercept a scatter plot by matching the correct function to the correlation.

### Essential Question
How do we fit the correct function a given scatter plot?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Nine lessons
2. Chapter Nine exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities
**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 22

### *Performance Standards*

***The students will:***
**8.0** Students determine the mean and the standard deviation of a normally distributed random variable.
**15.0** Students are familiar with the notions of a statistic of a distribution of values, of the sampling distribution of a statistic, and of the variability of a statistic.

### Unit/Topic/Lesson
### UNIT NINE
### Correlation and Regression

1. Variations and Prediction Intervals
2. Rank Correlation
3. Percentiles
4. Deciles

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives
1. To understand variation.
2. To understand prediction intervals.
3. To understand rank correlation.
4. To work with percentiles and deciles.

### Essential Question
What is the importance of rank correlation?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Nine lessons
2. Chapter Nine exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities
**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Correlation and Regression.

**Completion date:**

**Completed by:**

**Comments:**

## Week 23

### *Performance Standards*

***The students will:***
**19.0** Students are familiar with the *chi*-square distribution and *chi*-square test and understand their uses.

### Unit/Topic/Lesson
### UNIT TEN
### Chi-Square and Analysis of Variance

1. Introduction and Overview of Chi-Square Analysis of Variance
2. Multinomial Experiments: Goodness-of-Fit

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives
1. To understand Chi-square distribution.
2. To understand the goodness-of-fit.
3. To understand the degrees of freedom for Chi-square distribution.

### Essential Question

What is Chi-squared distribution and what is meant by goodness-of-fit?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Ten lessons
2. Chapter Ten exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 24

### *Performance Standards*

***The students will:***
**19.0** Students are familiar with the *chi*-square distribution and *chi*-square test and understand their uses.

### Unit/Topic/Lesson
### UNIT TEN
### Chi-Square and Analysis of Variance

1. Contingency Tables
2. Independence and Homogeneity
3. Two-Way Frequency Tables
4. Test for Independence

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives
1. To understand Chi-square distribution for contingency tables.
2. To understand homogeneity and independence.

### Essential Question

What is contingency tables and how to we test for independence and homogeneity?

### Teacher Resources
*Essentials of Statistics ©2002*

1. Chapter Ten lessons
2. Chapter Ten exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 25

### *Performance Standards*

***The students will:***
**19.0** Students are familiar with the *chi*-square distribution and *chi*-square test and understand their uses.

### Unit/Topic/Lesson
### UNIT TEN
### Chi-Square and Analysis of Variance

1. Analysis of Variance
2. Test of Homogeneity
3. Degrees of Freedom

### Mission and Expectations
*1. Critical Thinking Skills* *2. Problem Solving Skills* *3. Test Taking Skills*

### Objectives
1. To be able to analysis variance.
2. To understand when a collected data set is homogeneous.

### Essential Question
How do we analyze variance?

### Teacher Resources
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1. Chapter Ten lessons
2. Chapter Ten exercises
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
*Essentials of Statistics ©2002*

1. PowerPoint Presentations
2. Test Bank CD
3. Data Bank Disk for Data Manipulation
4. Internet Resources

### Evaluation/Activities
**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Chi-Square and Analysis of Variance.

**Completion date:**

**Completed by:**

**Comments:**

## Week 26

### *Performance Standards*

***The students will:***
**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.
**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT ELEVEN
### Election Theory

1. An Election Activity
2. Group-Ranking Methods
3. Group-Ranking Algorithms
4. Group-Ranking Paradoxes

### Mission and Expectations
*1. Critical Thinking Skills* *2. Problem Solving Skills* *3. Test Taking Skills*

### Objectives
1. To work with various group-ranking situations.
2. To understand how an election is

### Essential Question
How do we rank or elect the best choice of a group?

### Teacher Resources
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1. Chapter One lessons
2. Chapter One activities
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
1. PowerPoint Presentations
2. Internet Activities
3. TI-nspire Graphing Calculators

### Evaluation/Activities
**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 27

### *Performance Standards*

***The students will:***

**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.

**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT ELEVEN
### Election Theory

1. Arrow's Conditions and Approval Voting
2. Weighted Voting
3. Voting Power
4. Review of Election Theory

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To understand how weighted voting works in practice.
2. To understand how voting power works in practice.

### Essential Question

What is election theory?

### Teacher Resources

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1. Chapter One lessons
2. Chapter One activities
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

1. PowerPoint Presentations
2. Internet Activities
3. TI-nspire Graphing Calculators

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test**: On the concepts of Election Theory.

**Completion date:**

**Completed by:**

**Comments:**

## Week 28

### *Performance Standards*

***The students will:***

**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.

**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT TWELVE
### Fair Division

1. Fair Division Concepts and Activities
2. Estate Division

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To understand how to apply fair division.
2. To fairly divide an estate.

### Essential Question

What is considered fair division?

### Teacher Resources

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1. Chapter Two lessons
2. Chapter Two activities
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

1. PowerPoint Presentations
2. Internet Activities
3. TI-nspire Graphing Calculators

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 29

### *Performance Standards*

***The students will:***
**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.
**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT TWELVE
### Fair Division

1. Apportionment Algorithms
2. Apportionment Paradoxes

### Mission and Expectations
*1. Critical Thinking Skills* *2. Problem Solving Skills* *3. Test Taking Skills*

### Objectives
1. To understand algorithms.
2. To understand how paradoxes arise in practice.

### Essential Question
How do you use an algorithm to understand a paradox?

### Teacher Resources
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1. Chapter Two lessons
2. Chapter Two activities
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
1. PowerPoint Presentations
2. Internet Activities
3. TI-nspire Graphing Calculators

### Evaluation/Activities
**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 30

### *Performance Standards*

***The students will:***
**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.
**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT TWELVE
### Fair Division

1. Fair Division Algorithms
2. The Continuous Case
3. Mathematical Induction

### Mission and Expectations
*1. Critical Thinking Skills* *2. Problem Solving Skills* *3. Test Taking Skills*

### Objectives
1. To understand the concept of fair division.
2. To understand how mathematical induction works.

### Essential Question
What are some paradoxes that are put to rest with mathematical induction?

### Teacher Resources
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1. Chapter Two lessons
2. Chapter Two activities
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources
1. PowerPoint Presentations
2. Internet Activities
3. TI-nspire Graphing Calculators

### Evaluation/Activities
**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test**: On the concepts of Fair Division.

**Completion date:**

**Completed by:**

**Comments:**

## Week 31

### *Performance Standards*

***The students will:***
**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.
**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT THIRTEEN
### Matrix Operations and Applications

1. Addition and Subtraction of Matrices
2. Multiplication of Matrices

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To add and subtract matrices.
2. To multiply matrices.

### Essential Question

How do you multiply and when can you multiply two matrices?

### Teacher Resources
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1. Chapter Three lessons
2. Chapter Three activities
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

1. PowerPoint Presentations
2. Internet Activities
3. TI-nspire Graphing Calculators

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 32

### *Performance Standards*

***The students will:***
**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.
**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT THIRTEEN
### Matrix Operations and Applications

1. Population Growth
2. The Leslie Model

### Mission and Expectations
*1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills*

### Objectives

1. To understand population growth under the Leslie Model.
2. To understand the mathematics behind population growth.

### Essential Question

How does the Leslie Model explain population growth?

### Teacher Resources
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1. Chapter Three lessons
2. Chapter Three activities
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

1. PowerPoint Presentations
2. Internet Activities
3. TI-nspire Graphing Calculators

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Matrix Operations and Applications.

**Completion date:**

**Completed by:**

**Comments:**

## Week 33

### *Performance Standards*

***The students will:***

**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.

**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT FOURTEEN
### Graphs, Applications, and Subgraphs

1. Modeling Projects
2. Critical Paths
3. Graphs (Vocabulary and Representations)
4. Euler Circuits and Paths

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To understand the mathematical representation of graphs.
2. To understand the concepts of critical paths.
3. To understand Euler circuits and paths.

### Essential Question

What is Euler Circuit?

### Teacher Resources

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1. Chapter Four lessons
2. Chapter Four activities
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

1. PowerPoint Presentations
2. Internet Activities
3. TI-nspire Graphing Calculators

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.

**Completion date:**

**Completed by:**

**Comments:**

## Week 34

### *Performance Standards*

***The students will:***

**1.0** Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.

**2.0** Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.

### Unit/Topic/Lesson
### UNIT FOURTEEN
### Graphs, Applications, and Subgraphs

1. Hamiltonian Circuits and Paths
2. Graph Coloring
3. Planarity and Coloring
4. The Traveling Salesperson Problem
5. Shortest Route Problems

### Mission and Expectations

*1. Critical Thinking Skills  2. Problem Solving Skills  3. Test Taking Skills*

### Objectives

1. To understand Hamiltonian circuits and paths.
2. To work with concept of graph coloring.
3. To understand the traveling salesperson problem.
4. To work with and understand the shortest route problem.

### Essential Question

What is a Hamiltonian path?

### Teacher Resources

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1. Chapter Four and Five lessons
2. Chapter Four and Five activities
3. Teacher Made Worksheets
4. Teacher Made Assessments

### Media Resources

1. PowerPoint Presentations
2. Internet Activities
3. TI-nspire Graphing Calculators

### Evaluation/Activities

**Homework:** To be given daily on each introduced topic
**Review:** All weekly concepts.
**Quiz:** Assessments given as warranted by the curriculum.
**Test:** On the concepts involving Graphs, Applications, and Subgraphs.

**Completion date:**

**Completed by:**

**Comments:**