Marietta City Schools

2025 - 2026 District Unit Planner

AP Statistics

Unit title	**Unit 1: Exploring One-Variable Data**	**Unit duration (hours)**	*Approximately 18 hours*

Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): ***What will students learn?***

Unit 1 introduces students to data and the vocabulary of statistics. Students will also learn to talk about data in real-world contexts. Variability in data may seem to suggest certain conclusions about the data distribution, but not all variation is meaningful. Statistics allows us to develop shared understandings of uncertainty and variations. In this unit, students will define and represent categorical and quantitative variables, describe and compare distributions of one-variable data, and interpret statistics calculations to assess claims about individual data points or samples. Students will also begin to apply the normal distribution model as an introduction to how theoretical models for populations can be used to describe some distributions of sample data. Later units will more fully develop probabilistic modeling and inference.

GA DoE Standards

College Board Standards:

1.1 Introducing Statistics: What Can We Learn from Data?

1.2 The Language of Variation: Variables

1.3 Representing a Categorical Variable with Tables

1.4 Representing a Categorical Variable with Graphs

1.5 Representing a Quantitative Variable with Graphs

1.6 Describing the Distribution of a Quantitative Variable

1.7 Summary Statistics for a Quantitative Variable

1.8 Graphical Representations of Summary Statistics

1.9 Comparing Distributions of a Quantitative Variable

1.10 The Normal Distribution

Concepts/Skills to support mastery of standards

Describe data presented numerically or graphically.
Construct numerical or graphical representations of distributions.
Compare distributions or relative positions of points within a distribution.

Vocabulary

Bar Graph	Pie Chart	Segmented Bar Graph	Relative Frequency	Categorical Variable
Quantitative Variable	Two Way Table	Mosaic Plot	Shape	Outliers
Center	Variability	Dot Plot	Histogram	Stemplot
Box Plot	Mean	Median	Range	Standard Deviation
Interquartile Range	Skewed	Bimodal	Symmetric	Percentile
Cumulative Relative Frequency Graph		Empirical Rule	Z Score	

Notation

$\bar{x} = \frac{\Sigma x_i}{n}$ $\quad Standard\ Deviation = \sqrt{\frac{\Sigma(x_i - \bar{x})^2}{n-1}}$ $\quad IQR = Q_3 - Q_1$ $\quad$ *Low Outlier* $< Q_1 - 1.5(IQR)$ $\quad$ *High Outlier* $> Q_3 + 1.5(IQR)$ $\quad z\ score = \frac{x - M}{\sigma}$

Essential Questions

How do we determine if our results are significant or can happen by chance alone?
How can we display and describe categorical data?
How can we display and describe quantitative data?
How do I discuss and compare 1-variable data?
How do I determine what statistic is best to describe a certain data set?
How can I describe a location in a distribution?
How can determine if a distribution of data is approximately normal?

Assessment Tasks

Formative Assessment(s):

Common Formative Assessment – Quiz

Summative Assessment(s):

Common Summative Assessment – Unit 1 Test (50% Multiple Choice/50% Free Response)

Learning Experiences		
Objective or Content	**Learning Experiences**	**Personalized Learning and Differentiation**
1.3 Representing a Categorical Variable with Tables **1.4 Representing a Categorical Variable with Graphs**	**Math Medic Task: " How are your favorite classes related?"** Become familiar with vocabulary used to describe data. Make and interpret graphs for categorical data Identify what makes some graphs of categorical data misleading. Calculate marginal, join and conditional relative frequencies from a 2 way table.	Students will work at their own pace, vocabulary and technology support provided.
1.5 Representing a Quantitative Variable with Graphs **1.6 Describing the Distribution of a Quantitative Variable**	**Math Medic Task: " How many pairs of shoes do you own?"** Make and interpret dotplots, stemplots, and histograms of quantitative data. Identify the shape of a distribution from a graph Describe the overall pattern, shape, center and variability of a distribution and identify major departure from the pattern(outliers)	Students will work at their own pace, vocabulary and technology support provided.

Content Resources
All notes are provided on schoology. The Practice of Statistics 5th edition AP College Board Math Medic