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AP STATISTICS

Course Content

Based on the Understanding by Design® (Wiggins and McTighe) model, this course framework provides a clear and detailed description of the course requirements necessary for student success. The framework specifies what students must know, be able to do, and understand, with a focus on three big ideas that encompass the principles and processes in the discipline of statistics. The framework also encourages instruction that prepares students for advanced coursework in statistics or other fields using statistical reasoning and for active, informed engagement with a world of data to be interpreted appropriately and applied wisely to make informed decisions.

Big Ideas

The big ideas serve as the foundation of the course and allow students to create meaningful connections among concepts. They are often overarching concepts or themes that become threads that run throughout the course. Revisiting the big ideas and applying them in a variety of contexts allows students to develop deeper conceptual understanding. Below are the big ideas of the course and a brief description of each.

BIG IDEA 1: VARIATION AND DISTRIBUTION (VAR)

The distribution of measures for individuals within a sample or population describes variation. The value of a statistic varies from sample to sample. How can we determine whether differences between measures represent random variation or meaningful distinctions? Statistical methods based on probabilistic reasoning provide the basis for shared understandings about variation and about the likelihood that variation between and among measures, samples, and populations is random or meaningful.

BIG IDEA 2: PATTERNS AND UNCERTAINTY (UNC)

Statistical tools allow us to represent and describe patterns in data and to classify departures from patterns. Simulation and probabilistic reasoning allow us to anticipate patterns in data and to determine the likelihood of errors in inference.

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BIG IDEA 3: DATA-BASED PREDICTIONS, DECISIONS, AND CONCLUSIONS (DAT)

Data-based regression models describe relationships between variables and are a tool for making predictions for values of a response variable. Collecting data using random sampling or randomized experimental design means that findings may be generalized to the part of the population from which the selection was made. Statistical inference allows us to make data-based decisions.

UNITS

The course content is organized into commonly taught units. The units have been arranged in a logical sequence frequently found in many college courses and textbooks.

The nine units in AP Statistics, and their weighting on the multiple-choice section of the AP Exam, are listed below.

Pacing recommendations at the unit level and on the Course at a Glance provide suggestions for how to teach the required course content and administer the Personal Progress Checks. The suggested class periods are based on a schedule in which the class meets five days a week for 45 minutes each day. While these recommendations have been made to aid planning, teachers should of course adjust the pacing based on the needs of their students, alternate schedules (e.g., block scheduling), or their school's academic calendar.

TOPICS

Each unit is broken down into teachable segments called topics. The topic pages (starting on p. 36) contain all required content for each topic.

Exam Weighting for the Multiple-Choice Section of the AP Exam

Units	Exam Weighting
Unit 1: Exploring One-Variable Data	**15–23%**
Unit 2: Exploring Two-Variable Data	**5–7%**
Unit 3: Collecting Data	**12–15%**
Unit 4: Probability, Random Variables, and Probability Distributions	**10–20%**
Unit 5: Sampling Distributions	**7–12%**
Unit 6: Inference for Categorical Data: Proportions	**12–15%**
Unit 7: Inference for Quantitative Data: Means	**10–18%**
Unit 8: Inference for Categorical Data: Chi-Square	**2–5%**
Unit 9: Inference for Quantitative Data: Slopes	**2–5%**