AP® Statistics is a two-semester course that gives students hands-on experience collecting, analyzing, graphing, and interpreting real-world data. They will learn to effectively design and analyze research studies by reviewing and evaluating real research examples taken from daily life. The next time they hear the results of a poll or study, they will know whether the results are valid. As the art of drawing conclusions from imperfect data and the science of real-world uncertainties, statistics plays an important role in many fields. The equivalent of an introductory college-level course, AP® Statistics prepares students for the AP® exam and for further study in science, sociology, medicine, engineering, political science, geography, or business.

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Length: Two Semesters

Unit 1: Describing Data

- What Is Statistics?
- Displaying Distributions with Graphs
- Describing Distributions Using Numbers
- Five-Number Summaries
- More on Describing Distributions
- Wrap-Up

Unit 2: The Normal Distribution

- Introduction to the Normal Distribution
- Standardized Scores
- Determining if a Data Set Is Normal
- Wrap-Up

Unit 3: Bivariate Data

- Introduction to Bivariate Data
- The Least-Squares Regression Line
- The Correlation Coefficient
- Influential Points and Outliers
- Transformations to Achieve Linearity
- Categorical Bivariate Data: Two-Way Tables
- Wrap-Up

Unit 4: Planning a Study

- Methods of Data Collection--Experiments and Studies
- Methods of Data Collection--Surveys

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- Wrap-Up

Unit 5: Probability

- What Is Probability?
- Introduction to the Basic Rules of Probability
- More on Conditional Probabilities and the Probabilities of Combined Events
- Probability Distributions
- Means and Variances of Random Variables
- Semester Wrap-Up

Unit 6: Binomials and Distributions

- Introduction to Inferential Statistics
- Binomial Distributions
- Geometric Distribution
- Sampling Distributions: Means and Proportions
- Unit Wrap-Up

Unit 7: Introduction to Inference

- Confidence Intervals for Means
- Statistical Significance and P-Value
- Significance and Hypothesis Testing: Means
- Errors in Hypothesis Testing
- Unit Wrap-Up

Unit 8: t Distribution for Means

- Confidence Intervals and Hypothesis Testing for a Single Mean
- Confidence Intervals for the Difference Between Two Means
- Confidence Intervals and Hypothesis Tests for Two Independent Samples
- Unit Wrap-Up

Unit 9: Inference for Proportions

- Confidence Intervals and Hypothesis Tests for a Single Population Proportion
- The Difference Between Two Proportions
- Unit Wrap-Up

Unit 10: Inference for Tables and Least-Squares

- One-Way Tables: Chi-Square for Goodness-of-Fit
- Two-Way Tables: Chi-Square for Association or Independence
- Inference for the Least-Squares Line
- Unit Wrap-Up

Unit 11: Final Preparation for the AP Statistics Exam

- General Preparation Strategies
- Strategies and Practice for Multiple-Choice and Free-Response Questions
- Putting It Together: Practice Exam and Mixed Practice
- Final Exam

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