AP® Statistics

Course at a Glance

Plan

The Course at a Glance provides a useful visual organization of the AP Statistics curricular components, including:

- Sequence of units, along with approximate weighting and suggested pacing. Please note, pacing is based on 45-minute class periods meeting five days each week for a full academic year.
- Progression of topics within each unit
- Statistical practices across units

Teach

STATISTICAL PRACTICES

Statistical practices spiral throughout the course.

- 1 Formulate Questions
- 2 Collect Data
- 3 Analyze Data
- 4 Interpret Results

Required Course Content

Each topic contains required Learning Objectives and Essential Knowledge statements that form the basis of the assessment on the AP Exam.

Assess

Assign the Progress Checks—either as homework or in class—for each unit. Each Progress Check contains formative multiple-choice and free-response questions. The feedback from each Progress Check shows students the areas where they need to focus.

UNIT 1

Exploring One-Variable Data and Collecting Data

~26 CLASS PERIODS

20–30% AP EXAM WEIGHTING

Statistical Practices	Topics
1*	1.1 Introducing Statistics: What Can We Learn from Data?
2	1.2 Variables
3, 4	1.3 Tabular Representation and Summary Statistics for One Categorical Variable
3, 4	1.4 Graphical Representations for One Categorical Variable
3	1.5 Graphical Representations for One Quantitative Variable
4	1.6 Descriptions for One Quantitative Variable Distributions
3, 4	1.7 Summary Statistics for One Quantitative Variable
3, 4	1.8 Graphical Representations of Summary Statistics for One Quantitative Variable
3, 4	1.9 Comparisons of the Distributions for One Quantitative Variable
1, 2	1.10 The Investigative Question Revisited and Data Collection
2	1.11 Random Sampling
2	1.12 Potential Problems with Sampling
2	1.13 Experimental Design

Progress Check 1

Multiple-choice: ~44 questions
Free-response: 3 questions
- Question 1: Multi-Focus on Practices 1 and 2
- Question 2: Multi-Focus on Practices 3 and 4
- Question 2: Multi-Focus on Practices 3 and 4

UNIT 2

Probability, Random Variables, and Probability Distributions

~24 CLASS PERIODS

15–25% AP EXAM WEIGHTING

Statistical Practices	Topics
4	2.1 Tabular and Graphical Representations for the Distributions of Two Categorical Variables
3, 4	2.2 Summary Statistics for Two Categorical Variables
3	2.3 Estimating Probabilities Using Simulation
3	2.4 Introduction to Probability
4	2.5 Mutually Exclusive Events
3	2.6 Conditional Probability
3	2.7 Independent Events and Unions of Events
3	2.8 Introduction to Random Variables and Probability Distributions
3, 4	2.9 Parameters of Random Variables
3, 4	2.10 The Binomial Distribution
3, 4	2.11 The Normal Distribution
4	2.12 Sampling Distributions and the Central Limit Theorem

Progress Check 2

Multiple-choice: ~42 questions
Free-response: 2 questions
- Question 2: Multi-Focus on Practices 3 and 4
- Question 2: Multi-Focus on Practices 3 and 4

UNIT 3

Inference for Categorical Data: Proportions

~30 CLASS PERIODS

15–25% AP EXAM WEIGHTING

Statistical Practices	Topics
3, 4	3.1 Estimators
3, 4	3.2 Sampling Distributions for Sample Proportions
2, 3, 4	3.3 Constructing a Confidence Interval for a Population Proportion
2, 4	3.4 Justifying a Claim Based on a Confidence Interval for a Population Proportion
2, 4	3.5 Setting Up a Test for a Population Proportion
4	3.6 *p*-Values
3, 4	3.7 Carrying Out a Test for a Population Proportion
2, 3, 4	3.8 Potential Errors When Performing Tests
3, 4	3.9 Sampling Distributions for the Difference Between Sample Proportions
2, 3, 4	3.10 Constructing a Confidence Interval for the Difference Between Two Population Proportions
4	3.11 Justifying a Claim Based on a Confidence Interval for the Difference Between Two Population Proportions
2, 4	3.12 Setting Up a Test for the Difference Between Two Population Proportions
3, 4	3.13 Carrying Out a Test for the Difference Between Two Population Proportions
2, 4	3.14 Setting Up a Chi-Square Test for Homogeneity or Independence
3, 4	3.15 Carrying Out a Chi-Square Test for Homogeneity or Independence

Progress Check 3

Multiple-choice: ~65 questions
Free-response: 3 questions
- Question 3: Inference
- Question 3: Inference
- Question 3: Inference

UNIT 4

Inference for Quantitative Data: Means

~18 CLASS PERIODS

10–20% AP EXAM WEIGHTING

Statistical Practices	Topics
3, 4	4.1 Sampling Distributions for Sample Means
2, 3, 4	4.2 Constructing a Confidence Interval for a Population Mean or Population Mean Difference
2, 4	4.3 Justifying a Claim Based on a Confidence Interval for a Population Mean or Population Mean Difference
2, 4	4.4 Setting Up a Test for a Population Mean or Population Mean Difference
3, 4	4.5 Carrying Out a Test for a Population Mean or Population Mean Difference
3, 4	4.6 Sampling Distributions for the Difference Between Two Sample Means
2, 3, 4	4.7 Constructing a Confidence Interval for the Difference Between Two Population Means
4	4.8 Justifying a Claim Based on a Confidence Interval for the Difference Between Two Population Means
2, 4	4.9 Setting Up a Test for the Difference Between Two Population Means
3, 4	4.10 Carrying Out a Test for the Difference Between Two Population Means

Progress Check 4

Multiple-choice: ~49 questions
Free-response: 3 questions
- Question 3: Inference
- Question 3: Inference
- Question 3: Inference

UNIT 5

Regression Analysis

~9 CLASS PERIODS

10–20% AP EXAM WEIGHTING

Statistical Practices	Topics
3, 4	5.1 Graphical Representations Between Two Quantitative Variables
4	5.2 Correlation
3	5.3 Linear Regression Models
3, 4	5.4 Residuals
3, 4	5.5 Least-Squares Regression

Progress Check 5

Multiple-choice: ~19 questions
Free-response: 2 questions
- Question 4: Multi-Focus on Practices 2, 3, and 4
- Question 4: Multi-Focus on Practices 2, 3, and 4

* 1, 2 indicates that Statistical Practices 1 and 2 are covered by Topic 1.1.