

# 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
- Spiraling of the big ideas and course skills across units

## Teach

### SKILL CATEGORIES

*Skill categories spiral throughout the course.*

- |  |   |
|--|---|
| <b>1</b> Selecting Statistical Methods | <b>3</b> Using Probability and Simulation |
| <b>2</b> Data Analysis                 | <b>4</b> Statistical Argumentation        |

**+** Indicates 3 or more skills for a given topic. See the individual topic for all the relevant skills.

### BIG IDEAS

*Big ideas spiral across topics and units.*

- |                                       |   |
|---------------------------------------|---|
| <b>VAR</b> Variation and Distribution | <b>DAT</b> Data-Based Predictions, Decisions, and Conclusions |
| <b>UNC</b> Patterns and Uncertainty   |   |

## Assess

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

UNIT  
1

## Exploring One-Variable Data

~14–16 Class Periods

15–23% AP Exam Weighting

VAR	1	<b>1.1</b> Introducing Statistics: What Can We Learn from Data?
VAR	2	<b>1.2</b> The Language of Variation: Variables
UNC	2	<b>1.3</b> Representing a Categorical Variable with Tables
UNC	2	<b>1.4</b> Representing a Categorical Variable with Graphs
UNC	2	<b>1.5</b> Representing a Quantitative Variable with Graphs
UNC	2	<b>1.6</b> Describing the Distribution of a Quantitative Variable
UNC	2	<b>1.7</b> Summary Statistics for a Quantitative Variable
UNC	2	<b>1.8</b> Graphical Representations of Summary Statistics
UNC	2	<b>1.9</b> Comparing Distributions of a Quantitative Variable
VAR	2	<b>1.10</b> The Normal Distribution

### Personal Progress Check 1

- Multiple-choice:** ~35 questions  
**Free-response:** 2 questions
- Exploring Data
  - Exploring Data

UNIT  
2

## Exploring Two-Variable Data

~10–11 Class Periods

5–7% AP Exam Weighting

VAR	1	<b>2.1</b> Introducing Statistics: Are Variables Related?
UNC	2	<b>2.2</b> Representing Two Categorical Variables
UNC	2	<b>2.3</b> Statistics for Two Categorical Variables
UNC	2	<b>2.4</b> Representing the Relationship Between Two Quantitative Variables
DAT	2	<b>2.5</b> Correlation
DAT	2	<b>2.6</b> Linear Regression Models
DAT	2	<b>2.7</b> Residuals
DAT	2	<b>2.8</b> Least Squares Regression
DAT	2	<b>2.9</b> Analyzing Departures from Linearity

### Personal Progress Check 2

- Multiple-choice:** ~35 questions  
**Free-response:** 2 questions
- Exploring Data
  - Investigative Task

### UNIT 3

## Collecting Data

~9–10 Class Periods | 12–15% AP Exam Weighting

VAR 1	3.1 Introducing Statistics: Do the Data We Collected Tell the Truth?
DAT 1 4	3.2 Introduction to Planning a Study
DAT 1	3.3 Random Sampling and Data Collection
DAT 1	3.4 Potential Problems with Sampling
VAR 1	3.5 Introduction to Experimental Design
VAR 1	3.6 Selecting an Experimental Design
VAR 4	3.7 Inference and Experiments

### Personal Progress Check 3

- Multiple-choice: ~20 questions  
 Free-response: 2 questions
- Exploring Data and Collecting Data
  - Collecting Data

### UNIT 4

## Probability, Random Variables, and Probability Distributions

~18–20 Class Periods | 10–20% AP Exam Weighting

VAR 1	4.1 Introducing Statistics: Random and Non-Random Patterns?
UNC 3	4.2 Estimating Probabilities Using Simulation
VAR 3 4	4.3 Introduction to Probability
VAR 4	4.4 Mutually Exclusive Events
VAR 3	4.5 Conditional Probability
VAR 3	4.6 Independent Events and Unions of Events
VAR 2 4	4.7 Introduction to Random Variables and Probability Distributions
VAR 3 4	4.8 Mean and Standard Deviation of Random Variables
VAR 3	4.9 Combining Random Variables
UNC 3	4.10 Introduction to the Binomial Distribution
UNC 3 4	4.11 Parameters for a Binomial Distribution
UNC 3 4	4.12 The Geometric Distribution

### Personal Progress Check 4

- Multiple-choice: ~45 questions  
 Free-response: 2 questions
- Probability
  - Investigative Task

### UNIT 5

## Sampling Distributions

~10–12 Class Periods | 7–12% AP Exam Weighting

VAR 1	5.1 Introducing Statistics: Why Is My Sample Not Like Yours?
VAR 3	5.2 The Normal Distribution, Revisited
UNC 3	5.3 The Central Limit Theorem
UNC 4 3	5.4 Biased and Unbiased Point Estimates
VAR 3 4	5.5 Sampling Distributions for Sample Proportions
UNC 3 4	5.6 Sampling Distributions for Differences in Sample Proportions
UNC 3 4	5.7 Sampling Distributions for Sample Means
UNC 3 4	5.8 Sampling Distributions for Differences in Sample Means

### Personal Progress Check 5

- Multiple-choice: ~35 questions  
 Free-response: 2 questions
- Probability and Sampling Distributions
  - Investigative Task

# UNIT 6

## Inference for Categorical Data: Proportions

~16–18 Class Periods | 12–15% AP Exam Weighting

VAR 1	6.1 Introducing Statistics: Why Be Normal?
UNC +	6.2 Constructing a Confidence Interval for a Population Proportion
UNC 4	6.3 Justifying a Claim Based on a Confidence Interval for a Population Proportion
VAR 1 4	6.4 Setting Up a Test for a Population Proportion
VAR DAT 3 4	6.5 Interpreting $p$ -Values
DAT 4	6.6 Concluding a Test for a Population Proportion
UNC +	6.7 Potential Errors When Performing Tests
UNC +	6.8 Confidence Intervals for the Difference of Two Proportions
UNC 4	6.9 Justifying a Claim Based on a Confidence Interval for a Difference of Population Proportions
VAR 1 4	6.10 Setting Up a Test for the Difference of Two Population Proportions
VAR DAT 3 4	6.11 Carrying Out a Test for the Difference of Two Population Proportions

### Personal Progress Check 6

Multiple-choice: ~55 questions  
Free-response: 2 questions

- Inference
- Investigative Task

# UNIT 7

## Inference for Quantitative Data: Means

~14–16 Class Periods | 10–18% AP Exam Weighting

VAR 1	7.1 Introducing Statistics: Should I Worry About Error?
VAR UNC +	7.2 Constructing a Confidence Interval for a Population Mean
UNC 4	7.3 Justifying a Claim About a Population Mean Based on a Confidence Interval
VAR 1 4	7.4 Setting Up a Test for a Population Mean
VAR DAT 3 4	7.5 Carrying Out a Test for a Population Mean
UNC +	7.6 Confidence Intervals for the Difference of Two Means
UNC 4	7.7 Justifying a Claim About the Difference of Two Means Based on a Confidence Interval
VAR 1 4	7.8 Setting Up a Test for the Difference of Two Population Means
VAR DAT 3 4	7.9 Carrying Out a Test for the Difference of Two Population Means
	7.10 Skills Focus: Selecting, Implementing, and Communicating Inference Procedures

### Personal Progress Check 7

Multiple-choice: ~50 questions  
Free-response: 2 questions

- Inference and Collecting Data
- Investigative Task

# UNIT 8

## Inference for Categorical Data: Chi-Square

~10–11 Class Periods | 2–5% AP Exam Weighting

VAR 1	8.1 Introducing Statistics: Are My Results Unexpected?
VAR +	8.2 Setting Up a Chi-Square Goodness of Fit Test
VAR DAT 3 4	8.3 Carrying Out a Chi-Square Test for Goodness of Fit
VAR 3	8.4 Expected Counts in Two-Way Tables
VAR 1 4	8.5 Setting Up a Chi-Square Test for Homogeneity or Independence
VAR DAT 3 4	8.6 Carrying Out a Chi-Square Test for Homogeneity or Independence
	8.7 Skills Focus: Selecting an Appropriate Inference Procedure for Categorical Data

### Personal Progress Check 8

Multiple-choice: ~30 questions  
Free-response: 2 questions

- Inference
- Inference and Exploring Data/Collecting Data

**UNIT**  
**9**

**Inference for  
Quantitative  
Data: Slopes**

**~7-8** Class Periods

**2-5%** AP Exam Weighting

<b>VAR</b> 1	<b>9.1 Introducing Statistics: Do Those Points Align?</b>
<b>UNC</b> +	<b>9.2 Confidence Intervals for the Slope of a Regression Model</b>
<b>UNC</b> 4	<b>9.3 Justifying a Claim About the Slope of a Regression Model Based on a Confidence Interval</b>
<b>VAR</b> 1 4	<b>9.4 Setting Up a Test for the Slope of a Regression Model</b>
<b>VAR</b> <b>DAT</b> 3 4	<b>9.5 Carrying Out a Test for the Slope of a Regression Model</b>
	<b>9.6 Skills Focus: Selecting an Appropriate Inference Procedure</b>



**Personal Progress Check 9**

**Multiple-choice: ~25 questions**

**Free-response: 1 question**

- Inference and Exploring Data