

# **AP STATISTICS – DEEP RUN HIGH SCHOOL**

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### **What is AP Statistics?**

AP Statistics is a college-level introductory statistics class taught in high school. Statistics is much more than making graphs and calculating mean, median, and mode. Rather, it is using data to evaluate claims and make predictions. For example:

- We will learn the principles of experimental design to answer the question “Does drinking caffeine affect your pulse rate?”
- We will learn the principles of survey construction to answer the question “Do the characteristics of an interviewer affect the responses to a survey question?”
- We will learn how to analyze variables to answer questions like: “What is the relationship between fat and calories in McDonalds products?”
- We will learn the principles of statistical inference to answer questions like: “Do the majority of couples kiss to the right?” and “Does drinking milk during a cold increase mucus production?”

### **Why should you take AP Statistics?**

It is a fresh start: This isn't a typical math class. You don't need to remember how to factor a polynomial, graph a sine curve, or prove that triangles are congruent. However, this doesn't mean the class will be easy! You will need good critical thinking and communication skills.

It is a great preparation for college. It is taught over a full year (instead of a semester in college) so you have more time to learn the material and the skills you learn will help you in a wide variety of fields.

You will NEVER ask: “When will we ever use this?” Problems are almost always based on real-world studies in a variety of fields. We will read articles from current newspapers and magazines and learn how to think critically about claims made in the media.

College credit, for much less money than you would pay in college.

### **Who can take AP Statistics?**

Any student who has completed Math Analysis or Advanced Algebra Trig is eligible to take AP Statistics. It counts for Math credit towards graduation, it is a weighted grade, and it will look great on your college applications. In fact, many take AP Statistics simultaneously with another math course, such as Calculus or AP Calculus.

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1. Software Engineer
2. Mathematician
3. Actuary
- 4. Statistician!!!**
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1. Engineering
2. Life sciences
- 3. Statistics!!!**
4. Environmental studies
5. Finance

## Course Description

AP Statistics is the high school equivalent of a one semester, introductory college statistics course. In this course, students develop strategies for collecting, organizing, analyzing, and drawing conclusions from data. Students design, administer, and tabulate results from surveys and experiments. Probability and simulations aid students in constructing models for chance behavior. Sampling distributions provide the logical structure for confidence intervals and hypothesis tests. Students use a TI-84 graphing calculator, Minitab statistical software, and Web-based java applets to investigate statistical concepts. To develop effective statistical communication skills, students are required to prepare frequent written and oral analyses of real data.

## Course Goals

In AP Statistics, students are expected to learn:

### *Skills*

- To produce convincing oral and written statistical arguments, using appropriate terminology, in a variety of applied settings.
- When and how to use technology to aid them in solving statistical problems

### *Knowledge*

- Essential techniques for producing data (surveys, experiments, observational studies), analyzing data (graphical & numerical summaries), modeling data (probability, random variables, sampling distributions), and drawing conclusions from data (inference procedures – confidence intervals and significance tests)

### *Habits of mind*

- To become critical consumers of published statistical results by heightening their awareness of ways in which statistics can be improperly used to mislead, confuse, or distort the truth.

Text: *The Practice of Statistics* (2<sup>nd</sup> edition), by Starnes, Yates, and Moore, W. H. Freeman & Co., 2002