



## AP Statistics Curriculum

The purpose of this course is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. The course will expose students to the four broad conceptual themes: (1) exploring data – describing patterns and departures from patterns, (2) sampling and experimentation – planning and conducting a study, (3) anticipating patterns – exploring 17 random phenomena using probability and simulation, and (4) statistical inference – estimating population parameters and testing hypotheses. Completion of this course will prepare students to take the Advanced Placement test in May. Students are required to have a TI-83 or TI-84 calculator.

### Exploring Data:

- Displaying distributions with graphs
- Displaying distributions with numbers
- Measures of relative standing and density curves
- Normal distributions
- Scatterplots and correlation
- Least squares regression
- Transforming to achieve linearity
- Relationships between categorical data
- Establishing causation

### Sampling and Experimentation:

- Designing samples
- Designing experiments
- General probability rules

### Anticipating Patterns:

- Discrete and continuous random variables
- Means and variances of random variables
- Binomial distributions
- Geometric distributions
- Sampling distributions
- Sample proportions
- Sample means

### Statistical Inference:

- Estimating a population mean and proportion
- Carrying out significance tests
- Tests about a population mean and proportion
- Comparing two means
- Comparing two proportions
- Test for goodness of fit
- Inference for two-way tables
- Estimating the true slope of a regression line
- Tests about the true slope of a regression line