

# AP Statistics

## Overview

Mathematics is a key life skill; it is present in our everyday lives and yet there is a lack of drive to understand how to use it effectively. The purpose of this course is to introduce students to the major concepts and tools for collecting, analysing, and drawing conclusions from data. The four major themes are exploring data to find patterns, planning a study, exploring random phenomena using probability and simulations, and statistical inference, including confidence intervals and hypothesis testing. Through the inculcation of mathematical knowledge and understanding, students will be able to explore real and abstract applications of mathematics, construct arguments and develop mathematical thinking, both with and without the use of technology.

## Objectives

- Understand how to collect data to answer statistical questions
- Improve analysis of collected data
- Develop ability to manipulate and model data and probability distributions
- Interpret analysed data and draw conclusions
- Communicate statistical ideas clearly, completely, and precisely via oral and written arguments

## Structure

- Reflect on current knowledge of the range of topics that AP Statistics covers and identify strengths and weaknesses
  - Develop a personalised curriculum
- Understand patterns and departures from patterns
- Exploring statistical phenomena using probability and simulation
- Planning and conducting a study to conduct statistical analysis
  - Collect data (surveys, experiments, observational studies, simulations)
  - Analyse and interpret the data (inference procedures—confidence intervals, significance tests)
- Work with a mentor to develop data analysis skills
  - Question reliability and validity of data to improve critical thinking
  - Improve evaluative thinking
  - Consolidate presenting and interpreting results
- Exam practice
  - Past papers
  - Planning and structuring responses
  - Analysing, evaluating, and interpreting data

