

Probability and Statistics

Prerequisites: None

Length: One semester

Probability and Statistics provides a curriculum focused on understanding key data analysis and probabilistic concepts, calculations, and relevance to real-world applications. Through a "Discovery-Confirmation-Practice"-based exploration of each concept, students are challenged to work toward a mastery of computational skills, deepen their conceptual understanding of key ideas and solution strategies, and extend their knowledge in a variety of problem-solving applications.

This course covers topics such as types of data; common methods used to collect data; and the various representations of data, including histograms, bar graphs, box plots, and scatterplots. Students learn to work with data by analyzing and employing methods of prediction, specifically involving samples and populations, distributions, summary statistics, regression analysis, transformations, simulations, and inference.

Ideas involving probability — including sample space, empirical and theoretical probability, expected value, and independent and compound events — are covered as students explore the relationship between probability and data analysis. The connection between geometry and probability is explored through basic geometric probability.

To assist students for whom language presents a barrier to learning or who are not reading at grade level, Probability and Statistics includes audio resources in English.

The content is based on the National Council of Teachers of Mathematics (NCTM) standards and is aligned with state standards.