

MATHEMATICS STANDARDS

Probability and Statistics

STANDARD:

Students formulate and test hypotheses and demonstrate understanding that statistics is used to estimate the uncertainty involved in any conclusions that are drawn.

Student Performance Expectations: All students who have completed one year of Probability and Statistics shall be expected to:

Standard 1.0:

Students use the definition of the notion of independent events and dependent events. Students can use the rules for addition, multiplication, and complementation to solve for probabilities of particular events in finite sample spaces.

Standard 2.0

Students use the definition of conditional probability and use it to solve for probabilities in finite sample spaces.

Standard 3.0:

Students demonstrate an understanding of the notion of discrete random variables by using them to solve for the probabilities of outcomes.

Standard 4.0:

Students are familiar with standards (Normal, Binomial, Poisson, and Hyper-geometric) and can use them to solve for events in problems in which the distribution belongs to those families.

Standard 5.0:

Students determine the mean and the standard deviation of a normally distributed random variable.

Standard 6.0:

Students use the definitions of the mean, median, mode, range, inter-quartile, range, and standard deviation.

Standard 7.0:

Students compute the variance, standard deviation, range, and inter-quartile range of a distribution of data.

Standard 8.0:

Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, line and bar graphs, stem-and-leaf displays, scatter-plots, and box-and-whisker plots.