



**KENOSHA UNIFIED SCHOOL DISTRICT NO. 1
CURRICULUM and INSTRUCTIONAL SERVICES**

**STANDARDS AND BENCHMARKS
MATHEMATICS**

AP Statistics (343031 & 343032)
STANDARD A: MATHEMATICAL PROCESSES
Representation, Reasoning, Problem Solving
Communication, Connections
<i>I can use reasoning and logic to formulate, analyze, and solve problems, and to test the reasonableness of my results.</i>
A-1.12PS
<i>I can clearly communicate mathematical concepts either orally or in written form.</i>
A-2.12PS
<i>I can use a computer or a calculator as a problem solving tool.</i>
A-3.12PS
<i>I can read and interpret mathematical text and other mathematical representations (e.g., numbers, symbols, diagrams, models).</i>
A-4.12PS
STANDARD B: NUMBER OPERATIONS AND RELATIONSHIPS
Number Concepts
Number Computation
<i>I can determine the reasonableness of answers.</i>
B-1.12PS
<i>I can use mental math.</i>
B-2.12PS
STANDARD E: STATISTICS AND PROBABILITY
Data Analysis and Statistics
Probability
<i>I can construct a simple random sample using random numbers.</i>
E-1.12PS
<i>I can identify sampling methods (e.g., simple random, stratified, systematic, cluster, and convenience).</i>
E-2.12PS
<i>I can identify control groups, placebo effects, bias, and randomized two-treatment design.</i>
E-3.12PS
<i>I can identify types of statistical studies (e.g., census, sample, simulation, and experiment).</i>
E-4.12PS
<i>I can plan, conduct, and evaluate the validity and conclusions of a statistical experiment.</i>
E-5.12PS
<i>I can organize, display, and interpret the data in a variety of ways (e.g., tables, graphs, histogram, dotplots, stem-and-leaf displays, box-and-whisker plots, normal curves, and scatter plots).</i>
E-6.12PS
<i>I can recognize basic distribution shapes (e.g., uniform, symmetric, bimodal, and skewed).</i>
E-7.12PS
<i>I can calculate, make predictions, and analyze the effects of data on measures of central tendency, dispersion, and position (e.g., mode, median, mean, theorem, outliers, interquartile range, percentile, quartile, and standard scores (z-scores)).</i>
E-8.12PS
<i>I can estimate mean, expected value, variance, and standard deviation of grouped data and probability distributions (e.g., discrete, binomial, linear combinations, and normal approximations).</i>
E-9.12PS
<i>I can understand the effects of changing units on summary measures.</i>
E-10.12PS
<i>I can calculate the weighted average for a set of data.</i>
E-11.12PS

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<i>I can compute the five-number summary from raw data. E-12.12PS</i>
<i>I can determine the probability of compound events (e.g., dependent, independent, mutually exclusive, and tree diagrams). E-13.12PS</i>
<i>I can use combinations and permutations to determine the probability of an event. E-14.12PS</i>
<i>I can compute binomial, geometric, and normal probabilities in a variety of ways (e.g., formula, table, empirical rule, and calculator). E-15.12PS</i>
<i>I can convert raw data into z scores and vice versa. E-16.12PS</i>
<i>I can use central limit theorem to construct a good approximation for the mean. E-17.12PS</i>
<i>I can use compute the mean and standard deviation for a proportion. E-18.12PS</i>
<i>I can construct confidence intervals for the mean (e.g., small and large samples, variability, proportions, independent and dependent samples). E-19.12PS</i>
<i>I can compute the margin of error given the levels of confidence. E-20.12PS</i>
<i>I can compute the sample size for mean and proportions. E-21.12PS</i>
<i>I can interpret the confidence level. E-22.12PS</i>
<i>I can carry out a hypothesis test. E-23.12PS</i>
<i>I can test a claim about a mean (e.g., small and large sample, population proportion, population variance, dependent and independent sample). E-24.12PS</i>
<i>I can use a test statistics to compute a P-value. E-25.12PS</i>
<i>I can find the "best fit" line using linear regression. E-26.12PS</i>
<i>I can use sample data to compute the correlation coefficient. E-27.12PS</i>
<i>I can use sample data to compute the correlation coefficient. E-28.12PS</i>
<i>I can test the correlation coefficient p. E-29.12PS</i>
<i>I can test the slope of the least-squares regression line. E-30.12PS</i>
<i>I can understand the logic of significance testing: null and alternative hypothesis, p-value, one and two-sided tests, and the concepts of Type I and Type II errors. E-31.12PS</i>
<i>I can test for goodness of fit, homogeneity of proportions, variance, and independence (one and two way tables). E-32.12PS</i>