

Perry Local School Guaranteed and Viable Curriculum

AP Statistics

Data Analysis and Probability

MAAS.5.1

Identify patterns and departure from patterns and analyze their meanings and interpretations.

MAAS.5.1.a

Explore data (e.g., display distributions with graphs and describe distributions with graphs and numbers).

MAAS.5.1.b

Describe location in a distribution (e.g., measures of relative standing and density curves and normal distributions).

MAAS.5.1.c

Examine relationships with scatterplots, correlation and least squares regression lines.

MAAS.5.2

Use and apply surveys, observational studies and experiments.

MAAS.5.2.a

Collect, organize, summarize, evaluate, display and draw inferences from data.

MAAS.5.2.b

Compute and apply measures of central tendency and variance.

MAAS.5.2.c

Differentiate between various types of data.

MAAS.5.2.d

Classify data into levels of measurement (e.g., classify data into nominal, ordinal, interval and ratio levels of measurement).

MAAS.5.2.e

Identify the uses and abuses of statistics (e.g., identify bad samples and small samples, loaded questions and misleading graphs and distorted percentages and deliberate distortions).

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MAAS.5.2.f

Identify and apply the various methods of sampling (e.g., random, systematic, convenience, stratified and cluster sampling).

MAAS.5.2.g

Differentiate between and apply the concepts of sampling and non-sampling errors (e.g., recognize a sampling error and a non-sampling error and apply the concepts of sampling and non-sampling errors).

MAAS.5.3

Use and apply the concept of probability.

MAAS.5.3.a

Use probability to represent and solve problems involving uncertainty.

MAAS.5.3.b

Differentiate between and apply the concept of an event and its complement.

MAAS.5.3.c

Find probabilities using the Standard Normal Distribution. (e.g., apply the concept of continuous random variables, find probabilities when given specific z-score values and find z-score values).

MAAS.5.3.d

Find probabilities involving a nonstandard normal distribution (e.g., find probabilities after converting nonstandard values to standard z-scores and find a specific value when given a particular probability involving a nonstandard normal distribution).

MAAS.5.3.e

Use and apply the Central Limit Theorem to find probability.

MAAS.5.4

Apply the concept of a discrete random variable to generate and interpret discrete probability distributions.

MAAS.5.4.a

Identify random variables.

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MAAS.5.4.b

Distinguish between discrete and continuous random variables.

MAAS.5.4.c

Find probabilities using probability distributions.

MAAS.5.4.d

Use appropriate formulas to calculate the mean, variance and standard deviation for a probability distribution.

MAAS.5.4.e

Use probabilities to determine whether results are “unusual.”

MAAS.5.4.f

Calculate the expected value of a discrete random variable.

MAAS.5.4.g

Identify a binomial probability distribution.

MAAS.5.4.h

Use the Binomial Distribution Table to evaluate and analyze data.

MAAS.5.4.i

Calculate the mean, variance and standard deviation for a binomial distribution.

MAAS.5.5

Use and apply the fundamentals of hypothesis testing.

MAAS.5.5.a

Use sample data to test hypotheses about population parameters.

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MAAS.5.5.b

Given a claim, identify the null hypothesis and the alternative hypothesis and express both in symbolic form.

MAAS.5.5.c

Given a particular significance level, identify the critical value(s)

MAAS.5.5.d

Given a claim and sample data, calculate the value of the test statistic.

MAAS.5.5.e

Given a claim, state the conclusion of a hypothesis test in simple, non-technical terms.

MAAS.5.5.f

Test claims about a large sample mean.

MAAS.5.5.g

Test claims about a small sample mean.

MAAS.5.6

Use statistics tables and Technology to evaluate and analyze data.

MAAS.5.6.a

Use the Standard Normal Distribution Table to evaluate and analyze data.

MAAS.5.6.b

Use the T Distribution Table to evaluate and analyze data.

MAAS.5.6.c

Use Chi Square Tables, Test for Goodness of Fit Tables, use two way tables to evaluate and analyze data.

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MAAS.5.7

Use and compare data to make inferences.

MAAS.5.7.a

Use data from two samples to make inferences about the populations from which they come.

MAAS.5.7.b

Make inferences about two means using independent and large samples.

MAAS.5.7.c

Make inferences about two means using independent and small samples.

MAAS.5.7.d

Use Chi Square Procedures and Test for Goodness of Fit.

MAAS.5.OTH.1

Differentiate between and apply the various rounding rules of statistics.

MAAS.5.OTH.2

Use the graphing calculator where appropriate as a resource in applying statistical concepts.

MAAS.5.OTH.3

Use statistical software, where appropriate, as a resource in applying statistical concepts.