

Grade 9-12 Unpacked Core Math Standards – Statistics & Probability

9-12.S.1.1. Students are able to **draw** conclusions from a set of data.

Webb Level: 3

Bloom: Analysis

Verbs Defined:

Draw: arrive at, generate

Key terms defined:

Conclusions: conjectures

Set of data: collection of numbers or information

Teacher Speak:

Students are able to draw (arrive at, generate) conclusions from a set of data.

Student Speak

- I can identify an outlier in a data set (collection of numbers or information).
 - I can give the five number summary (minimum, first quartile, median, third quartile, and maximum) of a data set (collection of numbers or information).
 - I can determine which statistical value (mean, median, mode) is appropriate for a specific situation.
 - I can use the statistical values to make appropriate predictions.
 - I can determine which questions can or cannot be answered from a given data set (collection of numbers or information).
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9-12.S.1.2. Students are able to **compare** multiple one-variable data sets, **using** range, interquartile range, mean, mode, and median.

Webb Level: 2

Bloom: Comprehension

Verbs Defined:

Compare: Identify the similarities and differences

Using: applying

Key terms defined:

One-variable data set: A collection of numbers or information representing one variable.

Range: The difference between the greatest and least values in a data set.

Interquartile range: The difference between the values of the third (upper) and first (lower) quartiles in a data set.

Mean: The arithmetic average which is the sum of two or more quantities divided by the number of quantities.

Mode: The value that occurs most frequently in a data set.

Median: The quantity designated the central value in a set of numbers. The center number (or the average of the two central numbers) of a list of data when the numbers are arranged in order from least to greatest.

Teacher Speak:

Students are able to compare (identify the similarities and differences of) multiple one-variable data sets, using (applying) range, interquartile range, mean, mode, and median.

Student Speak:

- I can apply (use) the appropriate statistical values to identify the similarities and differences of (compare) two or more one-variable data sets (collection of numbers or information representing one variable.)
 - In a one-variable data set (collection of numbers or information representing one variable), I can find the:
 - range (The difference between the greatest and least values in a data set.)
 - interquartile range (The difference between the values of the third (upper) and first (lower) quartiles in a data set.)
 - mean (The arithmetic average which is the sum of two or more quantities divided by the number of quantities.)
 - mode (The value that occurs most frequently in a data set.)
 - median (The quantity designated the central value in a set of numbers. The center number (or the average of the two central numbers) of a list of data when the numbers are arranged in order from least to greatest.)
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9-12.S.1.3. Students are able to **represent** a set of data in a variety of graphical forms and **draw** conclusions.

Webb Level: 3

Bloom: Analysis

Verbs Defined:

Represent: display

Draw: arrive at, generate

Key terms defined:

Set of data: collection of numbers or information

Conclusions: conjectures

Graphical forms: pictorial representations

Teacher Speak:

Represent (display) a set of data in a variety of graphical forms and draw (generate) conclusions.

Student Speak:

- I can draw a line of best fit on a scatterplot and use it make appropriate predictions.
 - I can determine the most appropriate graphical form (pictorial representations) to display (represent) a data set (of numbers or information).
 - Given a set of data I can make a:
 - Box-and-whisker plot
 - Histogram
 - Stem-and-leaf plot
 - Scatterplot
 - Frequency table
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9-12.S.2.1. Students are able to **distinguish** between experimental and theoretical probability.

Webb Level: 1

Bloom: Knowledge

Verbs Defined:

Distinguish: differentiate

Key terms defined:

Experimental probability: the ratio of successes to total trials

Theoretical probability: the ratio of favorable outcomes to possible outcomes

Teacher Speak:

Students are able to distinguish (differentiate) between experimental and theoretical probability.

Student Speak:

Given a probability situation, I can determine if the given probability is experimental (the ratio of successes to total trials) or theoretical (the ratio of favorable outcomes to possible outcomes).

9-12.S.2.2. Students are able to **predict** outcomes of simple events **using** given theoretical probabilities.

Webb Level: 1

Bloom: Comprehension

Verbs Defined:

Predict: conjecture

Using: applying

Key terms defined:

Outcome: one of the possible events in a probability situation

Simple events: the result of a single probability situation

Theoretical probability: the ratio of favorable outcomes to possible outcomes

Teacher Speak:

Students are able to predict (conjecture) outcomes of simple events using (applying) given theoretical probabilities.

Student Speak:

- I can conjecture (make predictions) based on given probabilities.
- I can find the geometric probability $\left(\frac{\text{favorable measurement}}{\text{total measurement}} \right)$ in a problem situation.