Middle & High School Math Standards with Related GAISE II Concepts

Grade 6

CCSS.Math.Content.6.SP.A.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages*.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Formulate Statistical Investigative Questions I.A.1 Understand when a statistical investigation is appropriate
- Formulate Statistical Investigative Questions I.B.2 Understand that statistical investigative questions take into account context as well as variability present in data

CCSS.Math.Content.6.SP.A.2: Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Collect Data/ Consider Data II.A.3 Understand that a variable measures the same characteristic on several individuals or objects and results in data values that may fluctuate
- Analyze the Data III.A.3 Describe key features of distributions for quantitative variables, such as: °Center: mean as the equal share, and median as the middle-ordered value of the data °Variability: range as the difference between the greatest and least value, and dispersion as how many units from the equal share value °Shape: number of clusters, symmetric or not, and gaps
- Analyze the Data III.B.2 Learn to use the key features of distributions for quantitative variables, such as: ° center: mean as a balance point, and median as the middle-ordered value ° variability: interquartile range and mean absolute deviation (MAD) ° shape: symmetric or asymmetric and number of modes

CCSS.Math.Content.6.SP.A.3: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Analyze the Data III.A.3 Describe key features of distributions for quantitative variables, such as: °Center: mean as the equal share, and median as the middle-ordered value of the data °Variability: range as the difference between the greatest and least value, and dispersion as how many units from the equal share value °Shape: number of clusters, symmetric or not, and gaps

- Analyze the Data III.B.2 Learn to use the key features of distributions for quantitative variables, such as: ° center: mean as a balance point, and median as the middle-ordered value ° variability: interquartile range and mean absolute deviation (MAD) ° shape: symmetric or asymmetric and number of modes

CCSS.MATH.CONTENT.6.SP.B.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots

Related GAISE II concepts that can be addressed while focused on this math standard:

- Analyze the Data III.A.2 Represent the variability of categorical variables or quantitative variables using appropriate displays (e.g., tables, picture graphs, dotplots, bar graphs)
- Analyze the Data III.B.1 Represent the variability of quantitative variables using appropriate displays (e.g., dotplots, boxplots)

CCSS.MATH.CONTENT.6.SP.B.5: Summarize numerical data sets in relation to their context, such as by...

Related GAISE II concepts that can be addressed while focused on this math standard:

- Interpret Results: IV.B.2 Acknowledge that looking beyond the data is feasible

CCSS.MATH.CONTENT.6.SP.B.5.A: Reporting the number of observations.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Interpret Results IV.B.5 State the limitations of sample information (e.g., a sample may or may not be representative of the larger population, measurement variability)

CCSS.MATH.CONTENT.6.SP.B.5.B: Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Interpret Results IV.B.5 State the limitations of sample information (e.g., a sample may or may not be representative of the larger population, measurement variability)

CCSS.MATH.CONTENT.6.SP.B.5.C: Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Analyze the Data III.A.3 Describe key features of distributions for quantitative variables, such as: °Center: mean as the equal share, and median as the middle-ordered value of the data °Variability: range as the difference between the greatest and least value, and dispersion as how many units from the equal share value °Shape: number of clusters, symmetric or not, and gaps
- Analyze the Data III.B.2 Learn to use the key features of distributions for quantitative variables, such as: ° center: mean as a balance point, and median as the middle-ordered

value ° variability: interquartile range and mean absolute deviation (MAD) ° shape: symmetric or asymmetric and number of modes

- Interpret Results IV.A.1 Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through structured answers with teacher guidance

CCSS.MATH.CONTENT.6.SP.B.5.D: Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Analyze the Data III.A.3 Describe key features of distributions for quantitative variables, such as: °Center: mean as the equal share, and median as the middle-ordered value of the data °Variability: range as the difference between the greatest and least value, and dispersion as how many units from the equal share value °Shape: number of clusters, symmetric or not, and gaps
- Analyze the Data III.B.2 Learn to use the key features of distributions for quantitative variables, such as: ° center: mean as a balance point, and median as the middle-ordered value ° variability: interquartile range and mean absolute deviation (MAD) ° shape: symmetric or asymmetric and number of modes

Grade 7

CCSS.MATH.CONTENT.7.SP.A.1: Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Formulate Statistical Investigative Questions I.A.1 Understand when a statistical investigation is appropriate
- Formulate Statistical Investigative Questions I.B.3 Pose summary, comparative, and association statistical investigative questions about a broader population using samples taken from the population
- Collect Data/ Consider Data II.A.1 Understand that data are information; recognize that to answer a statistical investigative question, a person may collect data themselves specifically for that purpose, or a person may use data that have been collected by other people for another purpose
- Collect Data/ Consider Data II.B.2 Understand that a sample can be used to answer statistical investigative questions about a population. Recognize the limitations and scope of the data collected by describing the group or population from which the data are collected
- Collect Data/ Consider Data II.C.4 Understand the role of random selection in sample surveys and the effect of sample size on the variability of estimates
- Collect Data/ Consider Data II.C.9 Understand that in some circumstances, the data collected or considered may not generalize to the desired population, or this data may be the entire population
- Interpret Results IV.A.2 Make statements about the group or population from which the data were collected, recognizing that conclusions are limited to these groups and cannot be generalized to other groups
- Interpret Results IV.B.3 Generalize beyond the sample providing statistical evidence for the generalization and including a statement of uncertainty and plausibility when needed
- Interpret Results IV.B.5 State the limitations of sample information (e.g., a sample may or may not be representative of the larger population, measurement variability)

CCSS.MATH.CONTENT.7.SP.A.2: Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be*.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Formulate Statistical Investigative Questions I.B.3 Pose summary, comparative, and association statistical investigative questions about a broader population using samples taken from the population
- Collect Data/ Consider Data II.A.1 Understand that data are information; recognize that to answer a statistical investigative question, a person may collect data themselves specifically for that purpose, or a person may use data that have been collected by other people for another purpose
- Collect Data/ Consider Data II.B.2 Understand that a sample can be used to answer statistical investigative questions about a population. Recognize the limitations and scope of the data collected by describing the group or population from which the data are collected
- Collect Data/ Consider Data II.C.4 Understand the role of random selection in sample surveys and the effect of sample size on the variability of estimates
- Collect Data/ Consider Data II.C.9 Understand that in some circumstances, the data collected or considered may not generalize to the desired population, or this data may be the entire population
- Interpret Results IV.B.3 Generalize beyond the sample providing statistical evidence for the generalization and including a statement of uncertainty and plausibility when needed
- Interpret Results IV.B.4 Recognize the uncertainty caused by sample to sample variability
- Interpret Results IV.C.7 Communicate statistical reasoning and results to others in a variety of formats (verbal, written, visual)

CCSS.MATH.CONTENT.7.SP.B.3: Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. ***For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable*****.**

Related GAISE II concepts that can be addressed while focused on this math standard:

- Collect Data/ Consider Data II.B.3 Understand that data can be used to make comparisons between different groups at one point in time and the same group over time
- Analyze the Data III.A.2 Represent the variability of categorical variables or quantitative variables using appropriate displays (e.g., tables, picture graphs, dotplots, bar graphs)
- Analyze the Data III.A.3 Describe key features of distributions for quantitative variables, such as: °Center: mean as the equal share, and median as the middle-ordered value of the data °Variability: range as the difference between the greatest and least value, and dispersion as how many units from the equal share value °Shape: number of clusters, symmetric or not, and gaps
- Analyze the Data III.A.4 Recognize distributions can be used to compare two groups

- Analyze the Data III.B.1 Represent the variability of quantitative variables using appropriate displays (e.g., dotplots, boxplots)
- Analyze the Data III.B.2 Learn to use the key features of distributions for quantitative variables, such as: ° center: mean as a balance point, and median as the middle-ordered value ° variability: interquartile range and mean absolute deviation (MAD) ° shape: symmetric or asymmetric and number of modes
- Analyze the Data III.B.3 Use reasoning about distributions to compare two groups based on quantitative variables

CCSS.MATH.CONTENT.7.SP.B.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book*.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Collect Data/ Consider Data II.B.3 Understand that data can be used to make comparisons between different groups at one point in time and the same group over time
- Analyze the Data III.A.3 Describe key features of distributions for quantitative variables, such as: °Center: mean as the equal share, and median as the middle-ordered value of the data °Variability: range as the difference between the greatest and least value, and dispersion as how many units from the equal share value °Shape: number of clusters, symmetric or not, and gaps
- Analyze the Data III.A.4 Recognize distributions can be used to compare two groups
- Analyze the Data III.B.2 Learn to use the key features of distributions for quantitative variables, such as: ° center: mean as a balance point, and median as the middle-ordered value ° variability: interquartile range and mean absolute deviation (MAD) ° shape: symmetric or asymmetric and number of modes
- Analyze the Data III.B.3 Use reasoning about distributions to compare two groups based on quantitative variables
- Interpret Results IV.A.3 Describe the difference between two groups with different conditions
- Interpret Results IV.B.3 Generalize beyond the sample providing statistical evidence for the generalization and including a statement of uncertainty and plausibility when needed
- Interpret Results IV.C.7 Communicate statistical reasoning and results to others in a variety of formats (verbal, written, visual)

Grade 8

CCSS.MATH.CONTENT.8.SPA.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.

Related GAISE II concepts that can be addressed while focused on this math standard:

- Analyze the Data III.A.5 Observe whether there appears to be an association between two variables
- Analyze the Data III.B.1 Represent the variability of quantitative variables using appropriate displays (e.g., dotplots, boxplots)
- Analyze the Data III.B.4 Explore patterns of association between two quantitative variables or two categorical variables: ° measures of correlation: quadrant count ratio (QCR) ° comparison of conditional proportions across categorical variables
- Analyze the Data III.C.3 Summarize and describe relationships among multiple variables
- Interpret Results IV.B.1 Use statistical evidence from analyses to answer the statistical investigative questions and communicate results with comprehensive answers and some teacher guidance
- Interpret Results IV.C.1 Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through more formal reports and presentations
- Interpret Results IV.C.2 Evaluate and interpret the impact of outliers on the results
- Interpret Results IV.C.6 Use multivariate thinking to understand how variables impact one another

CCSS.MATH.CONTENT.8.SPA.2: Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line

Related GAISE II concepts that can be addressed while focused on this math standard:

- Analyze the Data III.A.5 Observe whether there appears to be an association between two variables
- Analyze the Data III.B.1 Represent the variability of quantitative variables using appropriate displays (e.g., dotplots, boxplots)
- Analyze the Data III.C.3 Summarize and describe relationships among multiple variables
- Interpret Results IV.C.2 Evaluate and interpret the impact of outliers on the results
- Interpret Results IV.C.6 Use multivariate thinking to understand how variables impact one another

CCSS.MATH.CONTENT.8.SP.A.3: Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as*

***meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height*.**

Related GAISE II concepts that can be addressed while focused on this math standard:

- Analyze the Data III.C.3 Summarize and describe relationships among multiple variables
- Interpret Results IV.C.6 Use multivariate thinking to understand how variables impact one another

CCSS.MATH.CONTENT.8.SP.A.4: Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*

Related GAISE II concepts that can be addressed while focused on this math standard:

- Analyze the Data III.B.4 Explore patterns of association between two quantitative variables or two categorical variables: ° measures of correlation: quadrant count ratio (QCR) ° comparison of conditional proportions across categorical variables
- Analyze the Data III.C.3 Summarize and describe relationships among multiple variables
- Interpret Results IV.A.1 Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through structured answers with teacher guidance
- Interpret Results IV.A.2 Make statements about the group or population from which the data were collected, recognizing that conclusions are limited to these groups and cannot be generalized to other groups
- Interpret Results IV.C.1 Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through more formal reports and presentations
- Interpret Results IV.C.6 Use multivariate thinking to understand how variables impact one another

High School

CCSS.Math.Content.HSS.CP.A.4

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Analyze the Data III.C.6** Describe associations between two categorical variables using measures such as difference in proportions and relative risk

CCSS.MATH.CONTENT. HSS.IC.A.1

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Formulate Statistical Investigative Questions I.A.1** Understand when a statistical investigation is appropriate
- **Formulate Statistical Investigative Questions I.B.3** Pose summary, comparative, and association statistical investigative questions about a broader population using samples taken from the population
- **Collect Data/ Consider Data II.B.2** Understand that a sample can be used to answer statistical investigative questions about a population. Recognize the limitations and scope of the data collected by describing the group or population from which the data are collected
- **Collect Data/ Consider Data II.C.4** Understand the role of random selection in sample surveys and the effect of sample size on the variability of estimates
- **Interpret Results IV.A.2** Make statements about the group or population from which the data were collected, recognizing that conclusions are limited to these groups and cannot be generalized to other groups

CCSS.MATH.CONTENT. HSS.IC.A.2

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Interpret Results IV.C.3** Understand what it means for an outcome or an estimate of a population characteristic to be plausible or not plausible compared to chance variation

CCSS.MATH.CONTENT.HSS.IC.B.3

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Formulate Statistical Investigative Questions I.C.2** Pose summary, comparative, and association statistical investigative questions for surveys, observational studies, and experiments using primary or secondary data
- **Collect Data/ Consider Data II.B.4** Recognize that data can be collected using surveys and measurements, and develop a critical attitude in analyzing data collection methods

- **Collect Data/ Consider Data II.B.8** Understand how random assignment in comparative experiments is used to control for characteristics that might affect responses
- **Collect Data/ Consider Data II.C.2** Distinguish between surveys, observational studies, and experiments
- **Collect Data/ Consider Data II.C.3** Understand what constitutes good practice in designing a sample survey, an experiment, and an observational study
- **Collect Data/ Consider Data II.C.5** Understand the role of random assignment in experiments and its implications for cause-and-effect interpretations

CCSS.MATH.CONTENT.HSS.IC.B.4

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Analyze the Data III.C.4** Understand how sampling distributions (developed through simulation) are used to describe the sample-to-sample variability of sample statistics
- **Analyze the Data III.C.5** Develop simulations to determine approximate sampling distributions and compute p-values from those distributions
- **Interpret Results IV.B.4** Recognize the uncertainty caused by sample to sample variability
- **Interpret Results IV.C.4** Interpret the margin of error associated with an estimate of population characteristic
- **Interpret Results IV.C.7** Communicate statistical reasoning and results to others in a variety of formats (verbal, written, visual)

CCSS.MATH.CONTENT.HSS.IC.B.5

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Collect Data/ Consider Data II.B.8** Understand how random assignment in comparative experiments is used to control for characteristics that might affect responses
- **Collect Data/ Consider Data II.C.5** Understand the role of random assignment in experiments and its implications for cause-and-effect interpretations
- **Analyze the Data III.A.4** Recognize distributions can be used to compare two groups
- **Analyze the Data III.C.4** Understand how sampling distributions (developed through simulation) are used to describe the sample-to-sample variability of sample statistics
- **Analyze the Data III.C.5** Develop simulations to determine approximate sampling distributions and compute p-values from those distributions

- **Interpret Results IV.A.1** Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through structured answers with teacher guidance
- **Interpret Results IV.A.3** Describe the difference between two groups with different conditions
- **Interpret Results IV.B.6** Compare results for different conditions in an experiment
- **Interpret Results IV.C.1** Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through more formal reports and presentations

CCSS.MATH.CONTENT.HSS.IC.B.6

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Interpret Results IV.A.2** Make statements about the group or population from which the data were collected, recognizing that conclusions are limited to these groups and cannot be generalized to other groups
- **Interpret Results IV.B.5** State the limitations of sample information (e.g., a sample may or may not be representative of the larger population, measurement variability)
- **Interpret Results IV.C.1** Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through more formal reports and presentations

CCSS.MATH.CONTENT.HSS.1D (ALL STANDARDS)

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Formulate Statistical Investigative Questions I.A.2** Pose statistical investigative questions of interest to students where the context is such that students can collect or have access to all required data
- **Formulate Statistical Investigative Questions I.A.3** Pose summary (or descriptive) statistical investigative questions about one variable regarding small, well-defined groups (e.g., subset of a classroom, classroom, school, town) and extend these to include comparison and association statistical investigative questions between variables
- **Formulate Statistical Investigative Questions I.B.6** Pose statistical investigative questions for data collected from online sources and websites, smartphones, fitness devices, sensors, and other modern devices

CCSS.MATH.CONTENT.HSS.ID.A.1

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Analyze the Data III.A.2** Represent the variability of categorical variables or quantitative variables using appropriate displays (e.g., tables, picture graphs, dotplots, bar graphs)
- **Analyze the Data III.B.1** Represent the variability of quantitative variables using appropriate displays (e.g., dotplots, boxplots)
- **Analyze the Data III.C.2** Identify appropriate ways to summarize quantitative or categorical data using tables, graphical displays, and numerical
- summary statistics, which includes using standard deviation as a measure of variability and a modified boxplot for identifying outliers

CCSS.MATH.CONTENT.HSS.ID.A.2

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Analyze the Data III.A.3** Describe key features of distributions for quantitative variables, such as: °Center: mean as the equal share, and median as the middle-ordered value of the data °Variability: range as the difference between the greatest and least value, and dispersion as how many units from the equal share value °Shape: number of clusters, symmetric or not, and gaps
- **Analyze the Data III.A.4** Recognize distributions can be used to compare two groups
- **Analyze the Data III.B.2** Learn to use the key features of distributions for quantitative variables, such as: ° center: mean as a balance point, and median as the middle-ordered value ° variability: interquartile range and mean absolute deviation (MAD) ° shape: symmetric or asymmetric and number of modes
- **Analyze the Data III.B.3** Use reasoning about distributions to compare two groups based on quantitative variables
- **Analyze the Data III.C.2** Identify appropriate ways to summarize quantitative or categorical data using tables, graphical displays, and numerical summary statistics, which includes using standard deviation as a measure of variability and a modified boxplot for identifying outliers
- **Interpret Results IV.C.1** Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through more formal reports and presentations
- **Interpret Results IV.C.7** Communicate statistical reasoning and results to others in a variety of formats (verbal, written, visual)

CCSS.MATH.CONTENT.HSS.ID.A.3

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Analyze the Data III.A.3** Describe key features of distributions for quantitative variables, such as: °Center: mean as the equal share, and median as the middle-ordered value of the data °Variability: range as the difference between the greatest

and least value, and dispersion as how many units from the equal share value °Shape: number of clusters, symmetric or not, and gaps

- **Analyze the Data III.B.2** Learn to use the key features of distributions for quantitative variables, such as: ° center: mean as a balance point, and median as the middle-ordered value ° variability: interquartile range and mean absolute deviation (MAD) ° shape: symmetric or asymmetric and number of modes
- **Interpret Results IV.C.1** Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through more formal reports and presentations
- **Interpret Results IV.C.2** Evaluate and interpret the impact of outliers on the results
- **Interpret Results IV.C.7** Communicate statistical reasoning and results to others in a variety of formats (verbal, written, visual)

CCSS.MATH.CONTENT.HSS.ID.A.4

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Analyze the Data III.B.2** Learn to use the key features of distributions for quantitative variables, such as: ° center: mean as a balance point, and median as the middle-ordered value ° variability: interquartile range and mean absolute deviation (MAD) ° shape: symmetric or asymmetric and number of modes
- **Interpret Results IV.C.7** Communicate statistical reasoning and results to others in a variety of formats (verbal, written, visual)

CCSS.MATH.CONTENT.HSS.ID.B.5

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Analyze the Data III.B.4** Explore patterns of association between two quantitative variables or two categorical variables: ° measures of correlation: quadrant count ratio (QCR) ° comparison of conditional proportions across categorical variables
- **Analyze the Data III.C.6** Describe associations between two categorical variables using measures such as difference in proportions and relative risk
- **Interpret Results IV.C.1** Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through more formal reports and presentations
- **Interpret Results IV.C.6** Use multivariate thinking to understand how variables impact one another
- **Interpret Results IV.C.7** Communicate statistical reasoning and results to others in a variety of formats (verbal, written, visual)

CCSS.MATH.CONTENT.HSS.ID.B.6

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Analyze the Data III.A.5** Observe whether there appears to be an association between two variables
- **Analyze the Data III.B.4** Explore patterns of association between two quantitative variables or two categorical variables: ° measures of correlation: quadrant count ratio (QCR) ° comparison of conditional proportions across categorical variables
- **Analyze the Data III.C.2** Identify appropriate ways to summarize quantitative or categorical data using tables, graphical displays, and numerical summary statistics, which includes using standard deviation as a measure of variability and a modified boxplot for identifying outliers
- **Analyze the Data III.C.3** Summarize and describe relationships among multiple variables
- **Analyze the Data III.C.7** Describe the relationship between two quantitative variables by interpreting Pearson's correlation coefficient and a least-squares regression line
- **Interpret Results IV.C.1** Use statistical evidence from analyses to answer the statistical investigative questions and communicate results through more formal reports and presentations
- **Interpret Results IV.C.6** Use multivariate thinking to understand how variables impact one another
- **Interpret Results IV.C.7** Communicate statistical reasoning and results to others in a variety of formats (verbal, written, visual)

CCSS.MATH.CONTENT.HSS.ID.B.9

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Interpret Results IV.C.6** Use multivariate thinking to understand how variables impact one another

CCSS.MATH.CONTENT.HSS.ID.C.8

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Analyze the Data III.C.7** Describe the relationship between two quantitative variables by interpreting Pearson's correlation coefficient and a least-squares regression line

CCSS.MATH.CONTENT.HSS.ID.C.9

Related GAISE II concepts that can be addressed while focused on this math standard:

- **Formulate Statistical Investigative Questions I.C.3** Pose inferential statistical investigative questions regarding causality and prediction

- **Collect Data/ Consider Data II.C.6** Understand the issues of bias and confounding variables in observational studies and their implications for interpretation