

Summarize, represent, and interpret data on a single count or measurement variable (Standards S.ID.1–3).	
Standard I.S.ID.1: Represent data with plots on the real number line (dot plots, histograms, and box plots).	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Represent numerical data using dot plots, histograms, and box plots. • Represent one or more numerical data sets on the same scale. • Describe data sets from graphical representations. • Recognize attributes that may be revealed by different representations (dot plots, histograms, and box plots). 	
Related Standards: Current Course	Related Standards: Future Courses
I.S.ID.2 , I.S.ID.3 , I.N.Q.1 , I.N.Q.2 , I.N.Q.3	III.S.ID.4 , III.S.IC.1 , III.S.IC.6

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Display numerical data in plots on a number line, including dot plots, histograms, and box plots (6.SP.4) • Summarize a data set using mean, median, interquartile range, and mean absolute deviation (6.SP.5c) • Make a line plot (2.MD.9, 3.MD.4, 4.MD.1, and 5.MD.2) and draw a picture graph and a bar graph (2.MD.10 and 3.MD.3)
Academic Vocabulary
mean, median, interquartile range, center, spread, shape, dot plot, histogram, box plot, quartiles, minimum, maximum, spread, side-by-side (parallel) plots
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5600#70304

Summarize, represent, and interpret data on a single count or measurement variable (Standards S.ID.1–3).	
Standard I.S.ID.2: Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Understand standard deviation as a measure of spread. Use basic calculations to understand the concept (possibly connecting to MAD). Use technology when appropriate. (Standard deviation is applied to the normal distribution in Secondary Mathematics III.) • Given two sets of data (numerically or graphically), identify similarities and differences in shape, center and spread. • Compare data sets by describing the similarities and differences between their shapes, measures of center, and measures of spread. 	
Related Standards: Current Course	Related Standards: Future Courses
I.S.ID.1 , I.S.ID.3 , I.N.Q.1 , I.N.Q.2 , I.N.Q.3	III.S.ID.4 , III.S.IC.1 , III.S.IC.6

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Represent numerical data in plots on a number line, including dot plots, histograms, and box plots (6.SP.4 and I.S.ID.1) • Use measures of center and spread to draw informal inferences about two data sets (7.SP.3 and 7.SP.4) • Summarize a data set using mean, median, interquartile range, and mean absolute deviation (6.SP.5c) • Make a line plot (2.MD.9, 3.MD.4, 4.MD.1, and 5.MD.2) and draw a picture graph and a bar graph (2.MD.10 and 3.MD.3)
Academic Vocabulary
mean, median, interquartile range, standard deviation, center, spread, shape, dot plot, histogram, box plot, quartiles, minimum, maximum, spread, side-by-side (parallel) plots
Resources
Curriculum Resources: http://www.uen.org/core/core.do?courseNum=5600#70304

Summarize, represent, and interpret data on a single count or measurement variable (Standards S.ID.1–3).	
Standard I.S.ID.3: Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers). Calculate the weighted average of a distribution and interpret it as a measure of center.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Interpret similarities and differences between the shape, and measures of centers and spreads of data sets. • Describe the influence of outliers on measures of center and spread. • Calculate the weighted average (for example, determining a student’s grade when category scores are weighted differently) and interpret it as a measure of center (balance point). 	
Related Standards: Current Course	Related Standards: Future Courses
I.S.ID.1 , I.S.ID.2 , I.N.Q.1 , I.N.Q.2 , I.N.Q.3	III.S.ID.4 , III.S.IC.1 , III.S.IC.6

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Represent numerical data in plots on a number line, including dot plots, histograms, and box plots (6.SP.4 and I.S.ID.1) • Use measures of center and spread to draw informal inferences about two data sets (7.SP.3 and 7.SP.4) • Summarize a data set using mean, median, interquartile range (6.SP.5c), and standard deviation (I.S.ID.2) • Make a line plot (2.MD.9, 3.MD.4, 4.MD.1, and 5.MD.2) and draw a picture graph and a bar graph (2.MD.10 and 3.MD.3)
Academic Vocabulary
outliers, skewed, mean, median, interquartile range, standard deviation, center, spread, shape, dot plot, histogram, box plot, quartiles, minimum, maximum, spread, side-by-side (parallel) plots
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5600#70304

Summarize, represent, and interpret data on two categorical and quantitative variables (Standard S.ID.6).	
Standard I.S.ID.6: Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.	
<ul style="list-style-type: none"> a. Fit a linear function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions, or choose a function suggested by the context. Emphasize linear and exponential models. b. Informally assess the fit of a function by plotting and analyzing residuals. Focus on situations for which linear models are appropriate. c. Fit a linear function for scatter plots that suggest a linear association. 	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Represent data on two quantitative variables on a scatter plot and describe how variables are associated. • Given a set of bivariate data, use residuals to assess the appropriateness of a given model to determine if the data has a linear relationship. • Find the line of best fit using technology. • Understand what a residual represents. 	
Related Standards: Current Course	Related Standards: Future Courses
I.F.IF.4 , I.F.BF.1 , I.F.LE.1 , I.F.LE.5 , I.S.ID.7 , I.S.ID.8	II.F.IF.4 , III.F.IF.4 , III.S.IC.6

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Construct and interpret scatter plots for bivariate data (8.SP.1) • Informally fit a line (trend line) to bivariate data (8.SP.2) • Use the equation of a linear model to solve problems in context of bivariate data (8.SP.3) • Construct a function to model a linear relationship (8.F.4)
Academic Vocabulary
Line of best fit, residuals, bivariate data, linear model, scatter plot
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5600#70304

Interpret linear models building on students' work with linear relationships, and introduce the correlation coefficient (Standards S.ID.7–9).	
Standard I.S.ID.7: Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Interpret the slope in context of the situation. • Interpret the y-intercept in context of the situation. 	
Related Standards: Current Course	Related Standards: Future Courses
I.F.IF.4 , I.F.IF.6 , I.F.IF.7 , I.F.BF.1 , I.F.LE.1 , I.F.LE.5 , I.S.ID.6 , I.S.ID.8	All functions standards (throughout high school), III.S.IC.6

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Construct and interpret scatter plots for bivariate data (8.SP.1) • Informally fit a line (trend line) to bivariate data (8.SP.2) • Use the equation of a linear model to solve problems in context of bivariate data (8.SP.3) • Construct a function to model a linear relationship (8.F.4) • Determine the slope and y-intercept of a line (8.F.3)
Academic Vocabulary
slope (rate of change), y-intercept
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5600#70304

Interpret linear models building on students' work with linear relationships, and introduce the correlation coefficient (Standards S.ID.7–9).	
Standard I.S.ID.8: Compute (using technology) and interpret the correlation coefficient of a linear fit.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Compute the correlation coefficient using technology. • Interpret the direction (positive, negative, or none) and strength (strong, moderate, weak) of the relationship based on the correlation. 	
Related Standards: Current Course	Related Standards: Future Courses
I.F.IF.6 , I.S.ID.6 , I.S.ID.7 , I.S.ID.9	II.F.IF.6 , III.F.IF.6

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Construct and interpret scatter plots for bivariate data to investigate patterns of association (8.SP.1) • Construct a function to model a linear relationship (8.F.4)
Academic Vocabulary
correlation coefficient, correlation, r
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5600#70304

Interpret linear models building on students’ work with linear relationships, and introduce the correlation coefficient (Standards S.ID.7–9).	
Standard I.S.ID.9: Distinguish between correlation and causation.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Understand the difference between correlation and causation. • Using a context situation when correlation exists, determine if the correlation is a result of causation. • Understand a strong correlation may not mean causation. 	
Related Standards: Current Course	Related Standards: Future Courses
I.S.ID.6 , I.S.ID.7 , I.S.ID.8	II.F.IF.6 , III.F.IF.6

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Interpret the meaning of correlation (I.S.ID.8)
Academic Vocabulary
correlation, causation
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5600#70304