

Develop understanding of statistical variability of data (Standards 6.SP.1–3)	
Standard 6.SP.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. <i>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.</i>	
Concepts and Skills to Master	
<ul style="list-style-type: none"> Recognize that responses to statistical questions have variations that can be used to draw conclusions. Identify the difference between a statistical and non-statistical question. 	
Related Standards: Current Course	Related Standards: Future Courses
6.SP.2 , 6.SP.3 , 6.SP.4 , 6.SP.5	Foundational for all Statistics and Probability standards.

Support for Teachers

Critical Background Knowledge (Access Background Knowledge)
<ul style="list-style-type: none"> Organize, represent, and interpret categorical data using picture graphs and bar graphs (1.MD.4, 2.MD.10, 3.MD.3) Generate measurement data by measuring lengths of several objects and show the data by making a line plot (2.MD.9, 3.MD.4) Make a line plot to display a data set of measurements in fractions of a unit (4.MD.4, 5.MD.2)
Academic Vocabulary
Data, variability, statistics
Resources
Curriculum Resources: https://www.uen.org/core/core.do?courseNum=5160#70082

Develop understanding of statistical variability of data (Standards 6.SP.1–3)	
Standard 6.SP.2: Understand that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread/range and overall shape.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> Describe a set of data using its center (mean, median, mode), spread (the difference between the maximum and minimum), range (the number set from minimum to maximum), and overall shape (informal variability). 	
Related Standards: Current Course	Related Standards: Future Courses
6.SP.1 , 6.SP.3 , 6.SP.4 , 6.SP.5	7.SP.1 , 7.SP.3 , 7.SP.4 , I.S.ID.1 , I.S.ID.2 , I.S.ID.3 , III.S.ID.4 , III.S.IC.1 , III.S.IC.4

Support for Teachers

Critical Background Knowledge (Access Background Knowledge)
<ul style="list-style-type: none"> Generate measurement data by measuring lengths of several objects and show the data by making a line plot (2.MD.9, 3.MD.4) Make a line plot to display a data set of measurements in fractions of a unit (4.MD.4, 5.MD.2)
Academic Vocabulary
Center, shape, spread, range, mean, median, mode, variability
Resources
Curriculum Resources : https://www.uen.org/core/core.do?courseNum=5160#70082

Develop understanding of statistical variability of data (Standards 6.SP.1–3)	
Standard 6.SP.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.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> Recognize that a measure of center for a numerical data set summarizes all of its values with a single number (mean, median, mode). Recognize that a measure of variation describes how its values vary with a single number (spread). 	
Related Standards: Current Course	Related Standards: Future Courses
6.SP.1 , 6.SP.2 , 6.SP.4 , 6.SP.5	7.SP.1 , 7.SP.2 , 7.SP.3 , 7.SP.4 , I.S.ID.1 , I.S.ID.2 , I.S.ID.3 , III.S.ID.4 , III.S.IC.1 , III.S.IC.4

Support for Teachers

Critical Background Knowledge (Access Background Knowledge)
<ul style="list-style-type: none"> Generate measurement data by measuring lengths of several objects and show the data by making a line plot (2.MD.9, 3.MD.4) Make a line plot to display a data set of measurements in fractions of a unit (4.MD.4, 5.MD.2)
Academic Vocabulary
Center, spread, mean, median, mode, variability
Resources
Curriculum Resources : https://www.uen.org/core/core.do?courseNum=5160#70082

Summarize and describe distributions (Standards 6.SP.4–5).	
Standard 6.SP.4: Display numerical data in plots on a number line, including dot plots, histograms and box plots. Choose the most appropriate graph/plot for the data collected.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Represent given data on the most appropriate graph/plot: <ul style="list-style-type: none"> ○ Dot plot (A method of visually displaying a distribution of data values where each data value is shown as a dot or mark above a number line. Also known as a line plot.) ○ Histogram (A method of visually displaying numerical data that has been grouped into intervals.) ○ Box plot (A method of visually displaying a distribution of data values by using the median, quartiles, and extremes of the data set. A box shows the middle 50% of the data.) 	
Related Standards: Current Course	Related Standards: Future Courses
6.SP.1 , 6.SP.2 , 6.SP.3 , 6.SP.5	7.SP.3 , 7.SP.4 , I.S.ID.1 , I.S.ID.2 , I.S.ID.3 , III.S.ID.4 , III.S.IC.1 , III.S.IC.4 , III.S.IC.6

Support for Teachers

Critical Background Knowledge (Access Background Knowledge)
<ul style="list-style-type: none"> • Represent whole numbers (2.MD.6), fractions (3.NF.2) and decimals (4.NF.6) on a number line • Generate measurement data by measuring lengths of several objects and show the data by making a line plot (2.MD.9, 3.MD.4) • Make a line plot to display a data set of measurements in fractions of a unit (4.MD.4, 5.MD.2)
Academic Vocabulary
Center, range, maximum, minimum, mean, median, mode, variability, dot plot, histogram, box plot, quartile
Resources
Curriculum Resources : https://www.uen.org/core/core.do?courseNum=5160#70082

Summarize and describe distributions (Standards 6.SP.4–5).	
<p>Standard 6.SP.5: Summarize numerical data sets in relation to their context, such as by:</p> <p>a. Reporting the number of observations.</p> <p>b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.</p> <p>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 (for example, outliers) from the overall pattern with reference to the context in which the data were gathered.</p> <p>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.</p>	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Perform statistical investigations, including the collection, organization, and analysis of the data. Analysis includes appropriate statistics from mean, median, interquartile range, measures of center, measures of variability, data, mean absolute deviation, and quartiles. • Calculate mean absolute deviation (MAD) for a data set and explain that the MAD is the mean of the absolute values of the differences of each point in the data set from the mean of the data set. • Communicate an understanding of observations, appropriate measure of center and spread, appropriate section of a graph to represent data collected, and overall patterns of distribution, including outliers, through statistical investigation. 	
Related Standards: Current Course	Related Standards: Future Courses
6.SP.1 , 6.SP.2 , 6.SP.3 , 6.SP.4	7.SP.1 , 7.SP.2 , 7.SP.3 , 7.SP.4 , I.S.ID.1 , I.S.ID.2 , I.S.ID.3 , III.S.ID.4 , III.S.IC.1 , III.S.IC.4 , III.S.IC.6

Support for Teachers

Critical Background Knowledge (Access Background Knowledge)
<ul style="list-style-type: none"> • Generate measurement data by measuring lengths of several objects and show the data by making a line plot (2.MD.9, 3.MD.4) • Make a line plot to display a data set of measurements in fractions of a unit (4.MD.4, 5.MD.2)
Academic Vocabulary
Data set, sample size, center, mean, median, range, maximum, minimum, variability, interquartile range, mean absolute deviation, outlier
Resources
Curriculum Resources : https://www.uen.org/core/core.do?courseNum=5160#70082