

DATA ABOUT US Statistics and Data Analysis

<p>Instructional Time and Investigations</p>	<p>$22\frac{1}{2}$ days</p>	<ul style="list-style-type: none"> • Inv. 1: What’s in a Name? Organizing, Representing, and Describing Data (3 Problems) • Inv. 2: Who’s in Your Household? Using the Mean (4 Problems) • Inv. 3: What’s Your Favorite ...? Measuring Variability (3 Problems) • Inv. 4: What Numbers Describe Us? Using Graphs to Group Data (3 Problems)
<p>Goals</p>	<p>Statistical Process: Understand and use the process of statistical investigation.</p> <ul style="list-style-type: none"> • The process of statistical investigation involves posing questions, collecting and analyzing data, and interpreting answers. 	<p>Attributes of Data: Distinguish data and data types.</p> <ul style="list-style-type: none"> • The answers to a statistical question are called data. Data can be either numerical or categorical.
	<p>Data Displays: Understand the role of multiple representations of data distributions.</p> <ul style="list-style-type: none"> • Finding measures of center or variability and graphing data are useful for summarizing the information in a variable data set. Visual representations of a data set can help you interpret the measures of center and spread and relate this to the overall shape of the representation. 	<p>Measures of Central Tendency and Variability: Understand that a single number may be used to characterize the center of a distribution of data and the degree of variability (or spread).</p> <ul style="list-style-type: none"> • There are several ways to try to say what is typical of a set of data; in each case a single number, called a measure of center, summarizes the data. Because various measures of center are calculated differently, they respond differently to changes in the data or to unusual data values. • The variability of a set of data can be measured, interpreted, and compared with the variability of other data sets. Measures of variability tell you how spread out the data are in relation to each other or to the center.
<p>Common Core Standards</p>	<p>Common Core Standards for Mathematical Practice</p> <p>MP.1: Make sense of problems and persevere in solving them.</p> <p>MP.2: Reason abstractly and quantitatively.</p> <p>MP.3: Construct viable arguments and critique the reasoning of others.</p> <p>MP.4: Model with mathematics.</p> <p>MP.5: Use appropriate tools strategically.</p> <p>MP.6: Attend to precision.</p> <p>MP.7: Look for and make use of structure.</p> <p>MP.8: Look for and express regularity in repeated reasoning.</p>	<p>Common Core Content Standards</p> <p>6.SPA.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.</p> <p>6.SPA.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.</p> <p>6.SPA.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.</p> <p>6.SP.B.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.</p> <p>6.SP.B.5: Summarize numerical data sets in relation to their context.</p> <p>Also 6.RP.A.3, 6.RP.A.3a, 6.SP.B.5a–d, 6.NS.C.6, 6.NS.C.7</p>

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Content Connections to Other Units

Goals of the Unit	Prior Work	Future Work
<p>Statistical Process: Understand and use the process of statistical investigation.</p> <p>Attributes of Data: Distinguish data and data types.</p>	<ul style="list-style-type: none"> Analyzing and classifying counting and rational numbers (<i>Prime Time; Comparing Bits and Pieces; Let's Be Rational; Decimal Ops</i>). 	<ul style="list-style-type: none"> Gathering and organizing data collected from conducting experiments or trials of games (<i>What Do You Expect?; Samples and Populations; Thinking With Mathematical Models</i>)
<p>Data Displays: Understand the role of multiple representations of data distributions.</p>	<ul style="list-style-type: none"> Representing the number of factors of a counting number (<i>Prime Time</i>) Graphing rectangular lengths and widths with constant perimeter or constant area (<i>Covering and Surrounding</i>) 	<ul style="list-style-type: none"> Representing data to aid with statistical analysis (<i>Samples and Populations; Thinking With Mathematical Models</i>)
<p>Measures of Central Tendency and Variability: Understand that a single number may be used to characterize the center of a distribution of data and the degree of variability (or spread).</p>	<ul style="list-style-type: none"> Ordering numbers from least to greatest, counting (<i>Elementary School; Comparing Bits and Pieces; Let's Be Rational; Decimal Ops</i>) Comparing, counting, and ordering numbers (<i>Elementary School</i>) Using arithmetic operations (particularly addition and division); learning the meaning of rational numbers (<i>Elementary School; Prime Time; Comparing Bits and Pieces; Let's Be Rational; Decimal Ops</i>) 	<ul style="list-style-type: none"> Using measures of center and variability to make inferences and predictions about events or populations (<i>Samples and Populations; Thinking With Mathematical Models</i>) Using variability in data sets to make judgments about the accuracy and reliability of the data and to make inferences and predictions about the group to which the data pertains (<i>Samples and Populations; Thinking With Mathematical Models</i>) Developing further understanding about what measures of center do or do not measure about a data set using the measures of center and variability to make inferences and predictions about the group to which the data pertains (<i>Samples and Populations; Thinking With Mathematical Models</i>)