Dear Family,

The next Unit in your child's mathematics class is ***Data About Us: Statistics and Data Analysis***. The focus of the Unit is statistical investigation. In this Unit, students organize, display, analyze, and interpret data. Your child will compute statistics from and describe different types of data displays.

Unit Goals

Data About Us gives students opportunities to ask questions about people around them, then collect data to answer these questions. Students investigate name lengths, household sizes, pet ownership, cereal serving sizes and nutritional values, distances from home to school, jump-rope records, and heights.

Students will construct line plots, dot plots, frequency charts, ordered-value bar graphs, histograms, and box-and-whisker plots. They will interpret patterns they see in these displays. Your child will also learn to compute the mode, median, mean, range, interquartile range (IQR), and mean absolute deviation (MAD) of a data set. He or she will use these statistics to describe data and make predictions.

Helping With Homework and Having Conversations About the Mathematics

In your child's notebook, you can find problems that were completed in class, notes on the mathematics of the Unit, and descriptions of the vocabulary words. You can help with homework and encourage sound mathematical habits as your child studies this Unit by asking questions such as:

- *What is the question being asked in this statistical investigation?*
- *How can you organize the data?*
- *Which type of display should you use to help you analyze the data distribution?*
- *Which measure of center should you use to describe the data distribution? What does this measure tell you about the distribution?*
- *How can you use graphs and statistics to describe a data distribution? How can you use graphs and statistics to compare two data distributions?*

You can help your child with his or her work for this Unit in several ways:

- Look for data in magazines, in newspapers, and on TV with your child.
- Ask your child questions about the information shown in real-world graphical displays.
- Ask your child about the data he or she has studied in class. What were the typical (mode, median, or mean) values for these data?
- Look over your child's homework and make sure that all questions are answered and that explanations are clear.

Common Core State Standards

Students develop and use all of the Standards of Mathematical Practice throughout the curriculum. In this Unit, students focus on modeling with mathematics as they represent data sets with tables, graphs, and plots, and on using precision when computing measures of center and spread. *Data About Us* focuses largely on the Statistics and Probability domain. Students occasionally scale values up and down, which allows them to practice skill in the Ratios and Proportional Relationships domain.

A few important mathematical ideas that your child will learn in *Data About Us* are given on the next page. As always, if you have any questions or concerns about this Unit or your child's progress in class, please feel free to call. We are interested in your child and want to be sure that this year's mathematics experiences are enjoyable and promote a firm understanding of mathematics.

Sincerely,
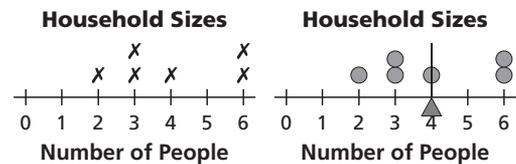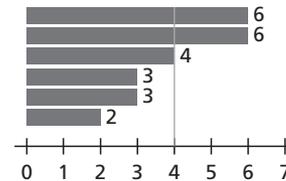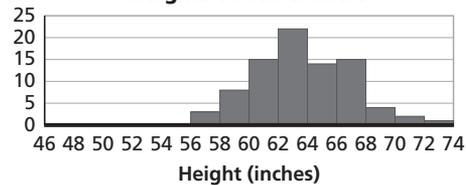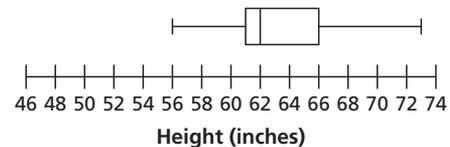
Important Concepts	Examples
Representing Data Distributions Statisticians use data displays or statistics to analyze information. Examples of data displays are shown below. Line Plot: Each case is represented by an "✗" positioned over a labeled number line. Dot Plot: Each case is represented by a "●" positioned over a labeled number line. Ordered-Value Bar Graph: A bar's height is the value of an individual case. Each case is represented by one bar. The bars may be displayed horizontally or vertically and may be ordered by magnitude of data values. Histogram: Numerical data is displayed using intervals. The vertical axis shows the frequency in either numbers or percents; the height of each bar indicates the count or percent of data values for that interval. The bars touch to depict the continuity of the number line. Box-and-Whisker Plot, or Box Plot: Data is divided into quarters, or quartiles. The first and fourth quartiles are the whiskers, while the box surrounds the second and third quartiles.	**Household Sizes** **Household Sizes** **Number of People** **Number of People** **Household Size for Six Households** 6 6 4 3 3 2 0 1 2 3 4 5 6 7 **Number of People** **Heights of 6th Graders** 25 20 15 10 5 0 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 **Height (inches)** **Heights of 6th Graders** 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 **Height (inches)**
Reading Standard Data Representations To *read the data,* you find information to answer explicit questions. To *read between the data,* you interpret and integrate information. To *read beyond the data,* you extend, predict, or infer to answer questions.	In the household data, the least number of people in a household is two. Five households have more than two people in them. The typical household has four people in it.
Measures of Center Mode: The data value that occurs most frequently. Median: The midpoint of an ordered set of data. Mean: The value found when all the data are combined and then redistributed evenly.	For the data set 0, 0, 1, 1, 2, 2, 2, 2, 3, 5, the mode is 2, the median is 2, and the mean is 1.8.
Measures of Spread/Variability Range: The maximum value – the minimum value. Interquartile Range (IQR): The range of the middle 50% of the data values. Mean Absolute Deviation (MAD): A measure of how close or spread out the data values are, on average, from the mean.	For the data set 0, 0, 1, 1, 2, 2, 2, 2, 3, 5, the range is 5, the IQR is 1, and the MAD is 1.04.
Types of Data Numerical data: Counts, measurements, or ratings Categorical data: Words or responses within categories	pulse, height, time spent watching TV favorite color, month of birth, types of pets owned