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| **Standards:** | **Cluster: Develop understanding of statistical variability.****MCC6.SP1 (DOK 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.***MCC6.SP2 (DOK 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.**MCC6.SP.3 ( DOK1)**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.**Cluster: Summarize and describe distributions.****MCC6.SP.4 (DOK 3)**Display numerical data in plots on a number line, including dot plots, histograms, and box plots.**MCC6.SP.5 (DOK 3)**Summarize numerical data sets in relation to their context, such as by:1. Reporting the number of observations.
2. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
3. 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.
4. 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.
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**6th Grade– CCGPS Math**

**LFS Unit 3: Statistics**

**K-U-D Unit 6: Statistics**

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| **understand…****By the end of the unit, I want my students to understand…****Statistical variability and how to describe, summarize, and interpret data distribution in the context it is given.** |
| **Know** | **Do** |
| * Statistical questions have variability in their answers. (6.SP.1)
* The difference between statistical and non-statistical data (i.e.- the question, “How tall am I?" is **not** a statistical question because there is only one response; however, the question, “How tall are the students in my class?” **is** a statistical question since the responses would allow for differences.) (6.SP.1)
* Answers to statistical questions can be described by its center, spread, and overall shape. (6.SP.2)
* Outliers can change the overall shape of the data. (6.SP.2)
* Median and mean are measures of center. (6.SP.2)
* Interquartile range and mean absolute deviation are measures of variation. (6.SP.2))
* **MODE AND RANGE ARE NOT ADDRESSED IN CCGPS AND AS SUCH ARE NOT A FOCUS OF INSTRUCTION.**
* Numerical data can be summarized with a single number measure of center. (6.SP.3)
* A single number can describe measure of variation in a set of numerical data. (6.SP.3)
* Numerical data can be recorded in a variety of ways (dot plots, histograms, and box plots.) (6.SP.4)
* The most appropriate way to display numerical data (6.SP.4)
* Context of the numerical data affects how the number of observations are reported (6.SP.5a)
* Context of the numerical data affects the attributes of the data including its units of measure (6.SP.5b)
* Context of the numerical data affects the overall pattern of how the data looks (6.SP.5c,d)
 | * Recognize and create statistical questions (6.SP.1)
* Collect variable data (6.SP.1)
* Describe a data set’s distribution, center, spread, spread and overall shape (6.SP.2)
* Determine the measure of center (mean and/or median) and overall spread of data (6.SP.2)
* Determine the measure of variability (interquartile range and mean absolute deviation) (6.SP.3)
* Describe overall patterns of data including any striking deviations from the pattern. (6.SP.3)
* Display data in or on a line graph, frequency table, histogram, dot plot, box plot, or stem and leaf plot (6.SP.4)
* Summarize numerical data by providing the context of the data (what is being measured, unit of measurement, and the context of the data collection activities) (6.SP.5)
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**SLM Unit 3: Statistics**

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| **Key Learning** |
| **Develop an understanding of statistical variability and understand how to describe, summarize and interpret data distribution in the context it is given.** |
| **Unit EQ** |
| **How can I investigate and interpret the world around me using statistics?** |
| **Concept** | **Concept** | **Concept** | **Concept** |
| **Collect and organize data** | **Describe data with measures of central tendency.** | **Describe data with measures of variance.** | **Summarize and interpret data** |
| **Lesson EQ’s** | **Lesson EQ’s** | **Lesson EQ’s** | **Lesson EQ’s** |
| 1. **How can I investigate the world around me with statistics?**
2. **What should I consider when creating a statistical question?**
3. **What are different ways to represent data?**
4. **How do I organize my data?**
5. **How do I determine which tool to use to organize data?**
 | 1. **How do I describe the results of my data?**
2. **Why would I use measures of central tendency to describe data?**
3. **How do I describe the distribution of data?**
4. **What are some patterns of data distribution?**
 | 1. **Why would I use measures of variability to describe data?**
2. **What are real world applications of absolute mean deviation?**
 | 1. **How do I use context to interpret data?**
2. **How do I share the results of my data with others?**
3. **What can I inference from data?**
4. **How can I use correspondence to interpret data?**
5. **What do patterns and deviations from patters tell me?**
6. **How do I make conclusions from data?**
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| **Vocabulary** | **Vocabulary** | **Vocabulary** | **Vocabulary** |
| **Statistics; Statistical Question; Sample; Numerical Data; Observation; Data Set; Frequency; Frequency Table; Frequency Graph; Number Line; Histogram; Dot Plot** | **Box & Whiskers Plot; Mean; Median; Mode; Quartile; Distribution; Measure of Central Tendency; Deviation; Skew** | **Range; Interquartile Range; Outlier; Variability; Cluster; Mean Absolute Deviation; Variance; Lower Extreme; Upper Extreme** | **Units of Measure; Bias; Inference; Context; Correspondence** |