A. Develop understanding of statistical variability.
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.
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.
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.

B. Summarize and describe distributions.
4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
5. Summarize numerical data sets in relation to their context, such as by:
   a. Reporting the number of observations.
   b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
   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 from the overall pattern with reference to the context in which the data were gathered.
   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.

Mathematical Practice

MP. The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

MP.1. Make sense of problems and persevere in solving them.
MP.2. Reason abstractly and quantitatively.
MP.3. Construct viable arguments and critique the reasoning of others.
MP.5. Use appropriate tools strategically.
MP.6. Attend to precision.
MP.7. Look for and express regularity in repeated reasoning.
MP.8. Look for and express regularity in repeated reasoning.

### 21st Century Student Outcomes: K-12

Be self-directed learners

Think creatively and use a wide range of idea creation techniques (such as brainstorming)

Work creatively with others and view failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes

Reason Effectively • Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation

### Enduring Understandings

The rules of probability can lead to more valid and reliable predictions about the likelihood of an event occurring.

### Essential Questions

How is the probability used to make informed decisions about uncertain events?

### Content Knowledge

Introduction to Statistics and Measures of Central Tendency

### Skills

- Explain what makes a good statistical question.
- Develop questions that can be used to collect statistical information.
- Explain that there are three ways that distribution of a set of data can be described: by its center, its spread, and overall shape.
- Describe the center of a set of statistical data in terms of the mean, median, and the mode.
- Describe the spread of a set of statistical data in terms of extremes, clusters, gaps, and outliers.
- Describe the overall shape of the set of data in terms of its symmetry or skewness.
- Define a measure of center as a single value that summarizes a data set.
- Find measures of center by calculating the mean, median, and mode of a set of numerical
Define measures of variation as the range of the data, relative to the measures of center. Find the measures of variation by calculating the interquartile range or mean absolute deviation of a set of numerical data. Organize and display data as a line plot or dot plot. Organize and display data in a histogram. Organize and display data in a box plot. Determine the upper and lower extremes, median, and upper and lower quartiles of a set of data and use this information to display the data in a box plot. Identify the similarities and differences of representing the same data in a line plot, a histogram, or a box plot. Decide and explain which type of plot (dot plot, line plot, histogram, or box plot) is the best way to display data depending on what I want to communicate about the data. Write a data collection summary that includes the number of observations, what is being investigated, how it is measured, and the units of measurement. Determine the measures of center and measures of variability of the collected data. Justify the use of a particular measure of center or measure of variability based on the shape of the data. Use the measure of center and a measure of variation to draw inferences about the shape of the data distribution. Describe overall patterns in the data and how they relate the context of the problem. Describe any deviations from the overall pattern and how they relate to the context of the problem.
Unit Resources
Chapter 9: Lessons 1-6; Problem Solving Investigations
Chapter 10: Lessons 1-5; Problem Solving Investigations

PARCC Mathematics Operational Evidence Statements
https://docs.google.com/spreadsheets/d/1dl0ICvMNdXGxbLwz8abQQblELsdFm31xVHHtAVDCwTc/edit?ts=5a5fc655#gid=554025491

PARCC Released Items
http://www.parcc-assessment.org/released-items

6th grade Flip Book:

North Carolina Dept of Ed. Wikispaces:
http://maccss.ncdpi.wikispaces.net/Middle+School

101 Math Discourse Questions:

Assessments:

Pre-Assessments
Quizzes
Mid Chapter Assessments
End of Chapter Assessments
Performance Tasks
Benchmark Tests

Special Education in the Math Classroom

- Chunk content
- Small group instruction
- Notes packets/graphic organizers provided
- Anchor charts/multiplication charts/reference sheets provided
- Calculators provided as needed
- Modified assessments/assignments and extra time given
- YouTube clips used to supplement content visually
- STRIDE Academy used to individually strengthen student weaknesses
- Number Lines
English Language Learners

All WIDA Can Do Descriptors can be found at this link:
https://www.wida.us/standards/CAN_DOs/

☐ Grades 6-8 WIDA Can Do Descriptors:
☐ Listening
☐ Speaking
☐ Reading

At Risk

- After-School Extended Day Program
- One-on-One tutoring/small group instruction
- Counseling Groups through the guidance office
- PBIS strategies and activities