Unit 9: Statistical Measures

Content Area: **Math**
Course(s): **Math**
Time Period: **May**
Length: **4 weeks**
Status: **Published**

Unit Overview

In this unit, students will learn about the following topics:

- Determining whether questions are considered statistical or not

- Making a dot plot

- Mean

- Median

- Mode

- Using measures of center to describe a data set

- Range and interquartile range

- Mean absolute deviation

- Describing the variation of a data set using range, interquartile range, and mean absolute deviation

Enduring Understandings

SWBAT:

- Label a question as statistical or not, along with providing an explanation

- Make a dot plot

- Use a dot plot to answer a statistical question

- Find the mean of a data set and use it to answer a statistical question

- Find the median of a data set and use it to answer a statistical question

- Find the mode of a data set and use it to answer a statistical question

- Choose the best measure of center to describe a data set

- Find the range and interquartile range of a data set

- Find the mean absolute deviation of a data set

- Describe the variation of a data set using the appropriate measure of variation

Essential Questions

How can we:

- recognize questions that anticipate a variety of answers?
- construct and interpret a dot plot?
- use data to answer a statistical question?

How can we:

- describe how the mean summaries a data set with a single number?
- find and interpret the mean of a data set?
- use the mean to answer a statistical question?

How can we:

- describe how the median and mode summarize a data set with a single number?
- find and interpret the median of a data set?
- find and interpret the mode of a data set?
- describe how changes to the data set affect the measure of center?
- use a measure of center to answer a statistical question?

How can we:

- discover how the range and the interquartile range describe the variability of a data set with a single number?
- find and interpret the range of a data set?
- find and interpret the interquartile range of a data set?
- use the interquartile range to identify outliers?

How can we:

- discover how the mean absolute deviation describes the variation of a data set with a single number?
- find and interpret the mean absolute deviation of a data set?
- compare data sets using the mean absolute deviation?

Instructional Strategies & Learning Activities

- Guided Practice
- Daily Do Now
- Extra Practice & Puzzle Time (Resources)

- Scavenger Hunts
- Coloring Activities
- Task Cards (Around the World)
- Maze Activities
- Quizizz Online Assignments
- Kahoot! Online Games
- GimKit Online Games

Integration of 21st Century Themes and Skills

9.4.8.CT.1	Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.
9.4.8.TL.3	Select appropriate tools to organize and present information digitally.
9.1.8.PB.5	Identify factors that affect one's goals, including peers, culture, location, and past experiences.
CRP.K-12.CRP1.1	Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.

Technology Design & Integration

TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.C.CS3	Develop cultural understanding and global awareness by engaging with learners of other cultures.
TECH.8.1.8.E.CS1	Plan strategies to guide inquiry.
TECH.8.1.8.F.CS1	Identify and define authentic problems and significant questions for investigation.

Interdisciplinary Connections

L.KL.6.2.A	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.

L.KL.6.2.B	Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
L.VL.6.3.A	Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
L.VL.6.3.D	Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
VPA.1.3.P.D.2	Create two and three-dimensional works of art while exploring color, line, shape, form, texture, and space.

Differentiation

Definitions of Differentiation Components:

- Content – the specific information that is to be taught in the lesson/unit/course of instruction.
- Process – how the student will acquire the content information.
- Product – how the student will demonstrate understanding of the content.
- Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

- High-achieving students will assist low-achieving students in mixed ability groupings for games and activities.

- High-achieving students can complete sudoku puzzles and logic puzzles as extension activities.
- Limit number/difficulty of problems for low-achieving students to demonstrate mastery.
- Narrow down problem choice to core concepts for low-achieving students.
- Leveled group-based activities, determined by formative assessment.

Modifications & Accommodations

- High-achieving students will assist low-achieving students in mixed ability groupings for games and activities.

- High-achieving students can complete sudoku puzzles and logic puzzles as extension activities.
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Benchmark Assessments

Schoolwide Benchmark assessments:

- Linkit Benchmarks (Form A in September, Form B in January, Form C in June): Linked to NJSLA standards

Additional Benchmarks used in this unit:

- IXL Diagnostic + continued practice during IXL periods

Formative Assessments

Formative Assessments used in this unit:

- Kahoot! Games
- Quizizz Games
- Homework
- Q & A
- Scavenger Hunts
- Coloring Activities
- Task Cards
- Partner Activities

Summative Assessments

Summative assessments for this unit:

- Chapter Test
- Quizzes

Instructional Materials

1. Big Ideas Math: Math & You 6th Grade Textbook

2. Quizizz
3. Kahoot!
4. Scavenger Hunts
5. Task Cards
6. Coloring Activities
7. GimKit

Standards

6.SP.A.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
6.SP.A.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.
6.SP.A.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.
6.SP.B.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
6.SP.B.5.a	Reporting the number of observations.
6.SP.B.5.b	Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
6.SP.B.5.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.