Unit 10: Data Displays

Content Area: **Math**
Course(s): **Math**
Time Period: **June**
Length: **2 weeks**
Status: **Published**

Unit Overview

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

- stem-and-leaf plots

- histograms

- shapes of distributions

- choosing appropriate measures to describe the center and variation of a data set

- box-and-whisker plots

- analyzing data displays

Enduring Understandings

SWBAT:

- Create a stem-and-leaf plot representing a numerical data set

- Answer questions about a stem-and-leaf plot

- Create a histogram representing a numerical data set

- Answer questions about a histogram

- Describe the shape of a distribution as symmetric or skewed either left or right

- Use the shape of a distribution to determine the best measures of center and variation to use when describing the data set

- Create a box-and-whisker plot representing a numerical data set

- Answer questions about a box-and-whisker plot

Essential Questions

How can we:

- set up a stem-and-leaf plot so all data values fit and are represented appropriately?
- create and interpret a stem-and-leaf plot?
- use a stem-and-leaf plot to describe the distribution of a data set?

How can we:

- set up the x-axis of our histogram using intervals?
- create and interpret a histogram?
- determine whether a question can be answered using a histogram?

How can we:

- label a distribution as symmetric, skewed left, or skewed right?
- use data displays to describe shapes of distributions?
- use shapes of distributions to compare data sets?

How can we:

- use the shape of the distribution to determine which measure of center/variation best describes a data set?

How can we:

- find the five-number summary of a data set?
- create a box-and-whisker plot?
- interpret the five numbers in the summary and relate them to the box-and-whisker plot?
- compare data sets represented by box-and-whisker plots?

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

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.
PFL.9.1.8.E.6	Compare the value of goods or services from different sellers when purchasing large quantities and small quantities.
PFL.9.1.8.E.8	Recognize the techniques and effects of deceptive advertising.
TECH.9.4.8.CI.2	Repurpose an existing resource in an innovative way (e.g., 8.2.8.NT.3).
TECH.9.4.8.CT.3	Compare past problem-solving solutions to local, national, or global issues and analyze the factors that led to a positive or negative outcome.

Technology Design & Integration

TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.A.4	Graph and calculate data within a spreadsheet and present a summary of the results.
TECH.8.1.8.B.CS1	Apply existing knowledge to generate new ideas, products, or processes.
TECH.8.1.8.C.CS2	Communicate information and ideas to multiple audiences using a variety of media and formats.

Interdisciplinary Connections

SCI.MS-PS1-1	Develop models to describe the atomic composition of simple molecules and extended structures.
ELA.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.
ELA.L.VL.6.3.B	Determine the meaning of words and phrases as they are used, including figurative, connotative, and technical meanings.
ELA.L.VL.6.3.C	Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).
ELA.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.
ELA.L.VL.6.3.E	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
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.

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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

MATH.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.
MATH.6.SP.B.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
MATH.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.
MATH.6.SP.B.5.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.