Unit 5 - Statistics and Probability

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **Full Year**
Status: **Published**

Unit Overview

Develop understanding of statistical variability. Summarize and describe distributions. Module 10.

Enduring Understandings

Statistical data has a distribution that can be described by its center or by its spread.

Statistical data can be represented in a variety of ways.

Essential Questions

How can you describe a set of data using the measures of center?

How can the measure of variability be used to describe a set of data?

How do outliers affect the measures of center?

What is a statistical question?

How can we analyze data distributions?

Learning Objectives

Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.

Describe a data set (collected to answer a statistical question) by its center, spread, and overall shape.

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.

Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

Summarize numerical data sets in relation to their context such as by: reporting the number of observations, describing the nature of the attribute under investigation, giving quantitative measures of center and variability, 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.

Standards: Content

6.SP	Statistics and Probability
6.SP.A	Develop understanding of statistical variability
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	Summarize and describe distributions
6.SP.B.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
6.SP.B.5	Summarize numerical data sets in relation to their context, such as by:
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.
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.

Standards: Interdisciplinary

9.4.8.CI.4	Explore the role of creativity and innovation in career pathways and industries.
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.
8.1.8.DA.5	Test, analyze, and refine computational models.

Assessment Evidence

Formative	Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Games, Exit Slips, Pre-Assessments, Math Message – Warm up, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day, Problem of the Week, Entrance Slips, Pre-Assessments
Summative	LinkIt Benchmark Assessments, Tests, Pre-Assessments, Quizzes, Written Responses

Alternative & Benchmark	Alternative – Reteaching, One on One Conferencing, Learning Centers, Levels Homework, Higher Order Thinking Problems, Additional leveled practice Benchmark - LinkIt Benchmark Assessments, Totowa TPA
Assessment Evidence Resource	

Instructional Resources

Smartboard, Computers, iPads, websites and digital interactives/models, multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Assorted Manipulatives, Khan Academy, Crosswalk Coach for the Common Core Standards, Ready Common Core Mathematics Instruction and Practice, Common Core Coach, Calculators, Reveal Math Resources.

Instructional Resource List

Curricular Mandates

Below are the curricular requirements as defined in NJ Administrative Code and Statute

	Amistad		Diversity, Equity, and Inclusion
	Holocaust		LGBT and Disabilities (Grades 6-12)
	Climate Change		Asian American & Pacific Islander

Social Emotional Learning (SEL) Competencies

NJ Social and Emotional Learning Competencies & Sub-Competencies

	Self-Awareness	X	Relationship Skills
X	Responsible Decision-Making		Social Awareness
X	Self-Management		

21st Century Skills & Themes

	Global and Cultural Awareness	X	Technology Literacy		Planning and Budgeting
X	Creativity and Innovation		Financial Institutions		Risk Management and Insurance
X	Information and Media Literacy		Digital Citizenship		Economic and Government Influences
	Critical Thinking and Problem Solving		Credit Profile		Career Awareness and Planning
	Civic Financial Responsibility		Financial Psychology		