

Red Bank Charter School

Grade 6 Mathematics Curriculum

Recommended Pacing Guide	
Unit 1: The Number System	30 Days
Unit 2: Expressions and Equations	55 Days
Unit 3: Ratios & Proportional Relationships	57 Days
Unit 4: Geometry	30 Days
Unit 4: Statistics and Probability	8 Days

Suggested Accommodations For All Units
<p>English Language Learners:</p> <ul style="list-style-type: none">● Pair ELL student with student who speaks English and understands/ able to communicate with student's native language● Simplify content● Google Translator● Multi - language word wall● Provide extended time● Speak clearly and slowly, avoid slang and idiomatic expressions
<p>Special Education/504 Plans/Students with Disabilities:</p> <ul style="list-style-type: none">● Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
<p>Gifted and Talented:</p> <ul style="list-style-type: none">● Provide appropriate challenges for a wide ranging skills and development.● Participate in inquiry and project-based learning units of study.● Provide options, alternatives and choices to differentiate and broaden the curriculum
<p>Students at Risk of Failure:</p> <ul style="list-style-type: none">● Students Motivation<ul style="list-style-type: none">○ Interest○ Build confidence○ Independence○ Enjoyment

Economically Disadvantaged:

- Build a safe and nurturing atmosphere
- Providing needed academic resources (paper, pencils, computer time,)
- Be flexible with assignments

Culturally Diverse:

- Involve families in student learning
- Provide immediate praise and feedback
- Respect cultural traditions
- Provided students with necessary academic resources and materials
- Provide visuals

Unit 1: The Number System**Duration: 30 Days****Standards/Learning Targets****New Jersey Student Learning Focus Standards: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.****NJSLS.MATH.CONTENT.6.NS.A.1**

- Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient.
- Use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ -cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?.
- Compute fluently with multi-digit numbers and find common factors and multiples.

NJSLS.MATH.CONTENT.6.NS.B.2

- Fluently divide multi-digit numbers using the standard algorithm.

NJSLS.MATH.CONTENT.6.NS.B.3

- Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

NJSLS.MATH.CONTENT.6.NS.B.4

- Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.
- Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$. Apply and extend previous understandings of numbers to the system of rational numbers.

NJSLS.MATH.CONTENT.6.NS.C.5

- Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge).
- Use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

NJSLS.MATH.CONTENT.6.NS.C.6

- Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

NJSLS.MATH.CONTENT.6.NS.C.6.A

- Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.

NJSLS.MATH.CONTENT.6.NS.C.6.B

- Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

NJSLS.MATH.CONTENT.6.NS.C.6.C

- Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

NJSLS.MATH.CONTENT.6.NS.C.7

- Understand ordering and absolute value of rational numbers.

NJSLS.MATH.CONTENT.6.NS.C.7.A

- Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.

NJSLS.MATH.CONTENT.6.NS.C.7.B

- Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .

NJSLS.MATH.CONTENT.6.NS.C.7.C

- Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars.

NJSLS.MATH.CONTENT.6.NS.C.7.D

- Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.

NJSLS.MATH.CONTENT.6.NS.C.8

- Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Primary Interdisciplinary Connections:

Literacy Connection

- NJSLSA.6.2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- NJSLSA.R4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
- NJSLSA.R7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

Science Connection

- MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.
- MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. [Clarification Statement: Emphasis is on using mathematical models, probability]
- MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

Technology Standards:

- 8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools
- 8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the results
- 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities

21st Century Themes/Career Readiness:

Career Ready Practices

CRP1. Act as a responsible and contributing citizen and employee.

CRP2. Apply appropriate academic and technical skills.

CRP4. Communicate clearly and effectively and with reason.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them

Personal Financial Literacy

- 9.1.8.A.2 Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.
- 9.1.8.B.7 Construct a budget to save for long-term, short-term, and charitable goals.

- 9.1.8.D.1 Determine how saving contributes to financial well-being.

Career Awareness Exploration and Preparation

- 9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career

Career and Technical Education

- 9.3.12.BM.1 Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision-making in business.
- 9.3.12.FN.1 Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision making in the finance industry.

Evidence of Student Learning

Formative Tasks:

- Teacher Observation
- Teacher Checklist
- Verbal question & answer
- Self-evaluation of performance and progress

Alternative Assessments:

- End of unit project

Summative Assessments:

- Student participation
- Rubric score
- Performance Test

Benchmark Assessments:

- Baseline SGO
- Mid-year SGO
- End of year SGO

Knowledge & Skills

Enduring Understandings:

- Numbers can be represented in multiple ways.
- The same operations can be applied in problem situations that seem quite different from another.
- Being able to compute fluently means making smart choices about which tools to use and when to use them.
- Knowing the reasonableness of an the answer comes from using good number sense and estimation strategies.

Essential Questions:

- What makes an estimate reasonable?
- What makes an answer exact?
- What makes a strategy both effective and efficient?
- What makes a solution optimal?

Core Instructional & Supplemental Materials

Suggested Activities/Resources:

- STEAM Performance Tasks
- Activities
- Blackline Masters
- Virtual Manipulatives

Varied Levels of Text/Resources:

- Big Ideas Math Modeling Real Life
- Teacher Resources
- <https://www.bigideasmath.com/BI>

- Interactive Explorations
- Digit Examples
- Skills Trainer
- Mini-Assessments
- STEAM videos
- Game Library
- Multi-language glossary
- Cross-Curricular Projects
- Graphic organizers
- Math Tool Paper
- Dry Erase Boards
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- M/login
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- Warm-Ups
- Extra Practice
- Reteach
- Enrichment and Extension
- Puzzle Time
- Prerequisite Skills Practice
- Pre and Post Course Assessments
- Course Benchmark Assessments
- Alternative Assessments
- Chapter Assessments

Unit 2: Expressions and Equations	Duration: 55 Days
Standards/Learning Targets	
<p>New Jersey Student Learning Focus Standards: Apply and extend previous understandings of arithmetic to algebraic expressions.</p>	
<p>NJSLS.MATH.CONTENT.6.EE.A.1</p> <ul style="list-style-type: none"> • Write and evaluate numerical expressions involving whole-number exponents. 	
<p>NJSLS.MATH.CONTENT.6.EE.A.2</p> <ul style="list-style-type: none"> • Write, read, and evaluate expressions in which letters stand for numbers. 	
<p>NJSLS.MATH.CONTENT.6.EE.A.2.A</p> <ul style="list-style-type: none"> • Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as $5 - y$. 	
<p>NJSLS.MATH.CONTENT.6.EE.A.2.B</p> <ul style="list-style-type: none"> • Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms. 	
<p>NJSLS.MATH.CONTENT.6.EE.A.2.C</p> <ul style="list-style-type: none"> • Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. • Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$. 	
<p>NJSLS.MATH.CONTENT.6.EE.A.3</p> <ul style="list-style-type: none"> • Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$. 	
<p>NJSLS.MATH.CONTENT.6.EE.A.4</p> <ul style="list-style-type: none"> • Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for. 	

- Reason about and solve one-variable equations and inequalities.

NJSLS.MATH.CONTENT.6.EE.B.5

- Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true?
- Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

NJSLS.MATH.CONTENT.6.EE.B.6

- Use variables to represent numbers and write expressions when solving a real- world or mathematical problem.
- Understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

NJSLS.MATH.CONTENT.6.EE.B.7

- Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.

NJSLS.MATH.CONTENT.6.EE.B.8

- Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem.
- Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
- Represent and analyze quantitative relationships between dependent and independent variables.

NJSLS.MATH.CONTENT.6.EE.C.9

- Use variables to represent two quantities in a real-world problem that changes in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable.
- Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.

Primary Interdisciplinary Connections:

Literacy Connection

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technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

- NJLSA.R7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

Science Connection

- MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.
- MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. [Clarification Statement: Emphasis is on using mathematical models, probability]
- MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

Technology Standards:

- 8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools
- 8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the results
- 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities

21st Century Themes/Career Readiness:

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Career Awareness Exploration and Preparation

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- 9.3.12.FN.1 Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision making in the finance industry.

Evidence of Student Learning

<p>Formative Tasks:</p> <ul style="list-style-type: none"> ● Teacher Observation ● Teacher Checklist ● Verbal question & answer ● Self-evaluation of performance and progress 	<p>Alternative Assessments:</p> <ul style="list-style-type: none"> ● End of unit project
<p>Summative Assessments:</p> <ul style="list-style-type: none"> ● Student participation ● Rubric score ● Performance Test 	<p>Benchmark Assessments:</p> <ul style="list-style-type: none"> ● Baseline SGO ● Mid-year SGO ● End of year SGO

Knowledge & Skills

<p>Enduring Understandings:</p> <ul style="list-style-type: none"> ● Change is fundamental to understanding functions. ● Numbers or objects that repeat in predictable ways can be described or generalized. ● An operation can be “undone” by its inverse. ● Rules of arithmetic and algebra can be used together with notions of equivalence to transform equations and inequalities so solutions can be found. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> ● How can change be described mathematically? ● How are patterns of change related to the behavior of functions? ● How do mathematical models/representations shape our understanding of mathematics?
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Core Instructional & Supplemental Materials

<p>Suggested Activities/Resources:</p> <ul style="list-style-type: none"> ● STEAM Performance Tasks ● Activities ● Blackline Masters Virtual ● Manipulatives Interactive ● Explorations Digit ● Examples ● Skills Trainer ● Mini-Assessments ● STEAM videos ● Game Library ● Multi-language glossary ● Cross-Curricular Projects ● Graphic organizers ● Math Tool Paper ● Dry Erase Boards ● Smart Notebook 	<p>Varied Levels of Text/Resources:</p> <ul style="list-style-type: none"> ● Big Ideas Math Modeling Real Life - Teacher Resources ● https://www.bigideasmath.com/BIM/login ● Big Ideas Math Manipulative Kit ● Student Edition ● Teaching Edition ● Family Letters ● Warm-Ups ● Extra Practice ● Reteach ● Enrichment and Extension ● Puzzle Time ● Prerequisite Skills Practice ● Pre and Post Course Assessments ● Course Benchmark Assessments
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- Khan Academy
- IXL

- Alternative Assessments
- Chapter Assessments

Unit 3: Ratios & Proportional Relationships**Duration: 57 Days****Standards/Learning Targets****New Jersey Student Learning Focus Standards: Understand ratio concepts and use ratio reasoning to solve problems.****NJSLS.MATH.CONTENT.6.RP.A.1**

- Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak”. “For every vote candidate A received, candidate C received nearly three votes”.

NJSLS.MATH.CONTENT.6.RP.A.2

- Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”

NJSLS.MATH.CONTENT.6.RP.A.3

- Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

NJSLS.MATH.CONTENT.6.RP.A.3.A

- Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

NJSLS.MATH.CONTENT.6.RP.A.3.B

- Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

NJSLS.MATH.CONTENT.6.RP.A.3.C

- Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $30/100$ times the quantity); solve problems involving finding the whole, given a part and the percent.

NJSLS.MATH.CONTENT.6.RP.A.3.D

- Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

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Science Connection

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- [Clarification Statement: Emphasis is on using mathematical models, probability]
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Alternative Assessments:

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Unit 4: Geometry

Duration: 30 Days

Standards/Learning Targets

New Jersey Student Learning Focus Standards: Solve real-world and mathematical problems involving area, surface area, and volume.

NJSLS.MATH.CONTENT.6.G.A.1

- Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes.
- Apply these techniques in the context of solving real-world and mathematical problems.

NJSLS.MATH.CONTENT.6.G.A.2

- Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism.
- Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

NJSLS.MATH.CONTENT.6.G.A.3

- Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate.
- Apply these techniques in the context of solving real-world and mathematical problems.

NJSLS.MATH.CONTENT.6.G.A.4

- Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures.
- Apply these techniques in the context of solving real-world and mathematical problems.

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- 9.3.12.BM.1 Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision-making in business.
- 9.3.12.FN.1 Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision making in the finance industry.

Evidence of Student Learning**Formative Tasks:**

- Teacher Observation
- Teacher Checklist

Alternative Assessments:

- End of unit project

<ul style="list-style-type: none"> ● Verbal question & answer ● Self-evaluation of performance and progress 	
Summative Assessments: <ul style="list-style-type: none"> ● Student participation ● Rubric score ● Performance Test 	Benchmark Assessments: <ul style="list-style-type: none"> ● Baseline SGO ● Mid-year SGO ● End of year SGO

Knowledge & Skills

Enduring Understandings: <ul style="list-style-type: none"> ● Two- and three-dimensional objects can be described, classified, and analyzed by their attributes. ● An object in a plane or in space can be oriented in an infinite number of ways while maintaining its size or shape. ● An object's location on a plane or in space can be described quantitatively. ● Linear measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other. 	Essential Questions: <ul style="list-style-type: none"> ● Why do we compare contrast and classify objects? ● How do decomposing and recomposing shapes help us build our understanding of mathematics? ● How can transformations be described mathematically?
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Core Instructional & Supplemental Materials

Suggested Activities/Resources: <ul style="list-style-type: none"> ● STEAM Performance Tasks ● Activities ● Blackline Masters Virtual ● Manipulatives Interactive ● Explorations Digit ● Examples ● Skills Trainer ● Mini-Assessments ● STEAM videos ● Game Library ● Multi-language glossary ● Cross-Curricular Projects ● Khan Academy ● IXL 	Varied Levels of Text/Resources: <ul style="list-style-type: none"> ● Big Ideas Math Modeling Real Life - Teacher Resources ● https://www.bigideasmath.com/BIM/login ● Big Ideas Math Manipulative Kit ● Student Edition ● Teaching Edition ● Family Letters ● Warm-Ups ● Extra Practice ● Reteach ● Enrichment and Extension ● Puzzle Time ● Prerequisite Skills Practice ● Pre and Post Course Assessments ● Course Benchmark Assessments ● Alternative Assessments ● Chapter Assessments
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Unit 5: Statistics and Probability

Duration: 8 Days

Standards/Learning Targets

New Jersey Student Learning Focus Standards: Develop understanding of statistical variability.

NJSLS.MATH.CONTENT.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. 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.

NJSLS.MATH.CONTENT.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.

NJSLS.MATH.CONTENT.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.
- Summarize and describe distributions.

NJSLS.MATH.CONTENT.6.SP.B.4

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

NJSLS.MATH.CONTENT.6.SP.B.5

Summarize numerical data sets in relation to their context, such as by:

NJSLS.MATH.CONTENT.6.SP.B.5.A

- Reporting the number of observations.

NJSLS.MATH.CONTENT.6.SP.B.5.B

- Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

NJSLS.MATH.CONTENT.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.

NJSLS.MATH.CONTENT.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.

Primary Interdisciplinary Connections:

Literacy Connection

- NJSLSA.6.2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- NJSLSA.R4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
- NJSLSA.R7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

Science Connection

- MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.
- MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. [Clarification Statement: Emphasis is on using mathematical models, probability]
- MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

Technology Standards:

- 8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools
- 8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the result
- 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities

21st Century Themes/Career Readiness:**Career Ready Practices**

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Personal Financial Literacy

- 9.1.8.A.2 Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.
- 9.1.8.B.7 Construct a budget to save for long-term, short-term, and charitable goals.
- 9.1.8.D.1 Determine how saving contributes to financial well-being.

Career Awareness Exploration and Preparation

- 9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career

Career and Technical Education

- 9.3.12.BM.1 Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision-making in business.
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Evidence of Student Learning**Formative Tasks:**

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Alternative Assessments:

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Summative Assessments:

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Benchmark Assessments:

- Baseline SGO
- Mid-year SGO
- End of year SGO

Knowledge & Skills**Enduring Understandings:**

- The question to be answered determines the data to be collected and how best to collect it.
- Basic statistical techniques can be used to analyze data in the workplace.
- The probability of an event can be used to predict the probability of future events.

Essential Questions:

- What is average?
- What makes a data representation useful?
- How does my sample affect confidence in my prediction?
- What is fair?

Core Instructional & Supplemental Materials**Suggested Activities/Resources:**

- STEAM Performance Tasks
- Blackline Masters
- Virtual Manipulatives
- Interactive Explorations
- Digit Examples
- Skills Trainer
- Mini-Assessments
- STEAM videos
- Game Library
- Multi-language glossary
- Cross-Curricular Projects
- Graphic organizers
- Math Tool Paper

Varied Levels of Text/Resources:

- Big Ideas Math Modeling Real Life Teacher Resources
- <https://www.bigideasmath.com/BIM/login>
- Big Ideas Math Manipulative Kit
- Student Edition
- Teaching Edition
- Family Letters
- Warm-Ups
- Extra Practice
- Reteach
- Enrichment and Extension
- Puzzle Time

- Dry Erase Boards
- Smart Notebook
- Khan Academy
- IXL

- Prerequisite Skills Practice
- Pre and Post Course Assessments
- Course Benchmark Assessments
- Alternative Assessments
- Chapter Assessments