Greenwich-Stow Creek Partnership Schools

Sixth Grade
Math Curriculum

6th Grade

Domain: The Number System	**Marking:** Period: 1

Cluster Headings: Apply and extend previous understandings of multiplication and division to divide fractions by fractions; Compute fluently with multi-digit numbers and find common factors and multiples; Apply and extend previous understandings of numbers to the system of rational numbers.

Overview of Unit:

- Use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense
- Use the operations of multiplication and division to solve problems
- Extend student's previous understanding of numbers and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers
- Reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane

Learning Targets—Big Idea and Standards

Big Ideas:

- Find the Greatest Common Factor of two numbers
- Find the Least Common Factor of two numbers
- Compute quotients of fractions and solve problems involving division
- Compute quotients and mixed numbers and solve problems involving division with mixed numbers
- Add, subtract, and multiply decimals and solve problems involving addition, subtraction and multiplication of decimals
- Multiply decimals and solve problems involving multiplication of decimals
- Divide whole numbers and solve problems involving division of whole numbers and decimals

Mathematics Standards: 6.NS.A, 6.NS.B

6.NS.A: Apply and extend previous understandings of multiplication and division to divide fractions by fractions

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 $\left(\dfrac{2}{3}\right) \div \left(\dfrac{3}{4}\right)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $\left(\dfrac{2}{3}\right) \div \left(\dfrac{3}{4}\right) = \dfrac{8}{9}$ because $\dfrac{3}{4}$ of $\dfrac{8}{9}$ is $\dfrac{2}{3}$. (In general, $\left(\dfrac{a}{b}\right) \div \left(\dfrac{c}{d}\right) = \dfrac{ad}{bc}$). How much chocolate will each person get if 3 people share $\dfrac{1}{2}$ lb. of chocolate equally? How many $\dfrac{3}{4}$ cup servings are in $\dfrac{2}{3}$ of a cup of yogurt? How wide is a rectangular strip of land with length $\dfrac{3}{4}$ mi and area $\dfrac{1}{2}$ square mi?

6.NS.B: *Compute fluently with multi-digit numbers & find common factors & multiples*

2. With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.

3. With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

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 $4(9 + 2)$.

Success Criteria

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- Model different types of multiples
- Write products of repeated factors as powers
- Evaluate powers
- Explain why there is a need for a standard order of operations
- Evaluate numerical expressions involving several operations, exponents, and grouping symbols
- Write numerical expressions involving exponents to represent a real-life problem
- Identify equivalent expressions
- Use properties of operations to rewrite expressions
- Find factor pairs of a number
- Explain the meanings of prime and composite numbers
- Create a factor tree to find the prime factors of a number
- Write the prime factorization of a number
- Explain the meaning of factors of a number
- Use lists of factors and prime factors to identify the greatest common factor of numbers
- Explain the meaning of multiples of a number
- Use lists of multiples and prime factors to identify the least common multiple of numbers
- Draw a model to explain fraction addition and subtraction
- Add and subtract fractions
- Write a mixed number as an improper fraction

- Add and subtract mixed numbers
- Draw a model to explain fraction multiplication
- Multiply and divide fractions by fractions, whole numbers, and with improper fractions
- Find products involving mixed numbers
- Interpret products involving fractions and mixed numbers to solve real-life problems
- Draw a model to explain division of fractions and mixed numbers
- Find reciprocals of numbers
- Write a mixed number as an improper fraction
- Evaluate expressions involving mixed numbers using the order of operations
- Use place value to explain addition and subtraction of decimals
- Add and subtract decimals
- Evaluate expressions involving addition and subtraction of decimals
- Draw a model to explain multiplication of decimals
- Multiply decimals by whole numbers and by decimals
- Evaluate expressions involving multiplication of decimals
- Use long division to divide whole numbers
- Write a remainder as a fraction
- Interpret quotients in real-life problems
- Divide decimals and whole numbers by whole numbers and decimals

Evidence of Learning—District Assessment Tools

- Model Curriculum Unit Assessment
- Teacher-made tests and quizzes
- Publisher's tests and quizzes
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Daily assignments

District Learning Plan and Materials

Materials:

- Text: *Math and You 2025*
- *Math and You* Record and Practice Journal
- *Math and You* Assessment Book
- See *Math and You* Materials List

Learning Plan:

Math and You 2025

- Chapter 1, Sections 1.1-1.6
- Chapter 2, Sections 2.1-2.8

Web-based activities

- ALEKS, Khan Academy, *Math and You…*)
- Concept and Tools Videos
- Standards Based Practice
- Interactive Whiteboard Lessons
- Online Lesson Video

Differentiation:

Math and You 2025 Website- "Differentiating the Lesson"

- STEAM Performance Task
- Intensive Intervention Activities
- Lesson Tutorials (videos)
- Skills Review Handbook
- Basic Skills Handbook

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)

- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Web-based Activities

- ALEKS, Khan Academy, *Math and You…*)
- Concept and Tools Videos
- Standards Based Practice
- *Math and You 2025* ELL Support
- Vocabulary Cards

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

x__Interdisciplinary Standards: NJSLS

X   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.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content

X   NJSLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☐ **9.1 Personal Financial Literacy**

Financial Health: *Financial Psychology, Civic Financial Responsibility*

Financial Landscape: *Financial Institutions, Economic & Government Influences*

Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and*

Debit Management, Credit Profile

☐**9.2 Career Awareness and Planning**

☐**9.4 Life Literacies and Key Skills**

Creativity and Innovation

Critical Thinking and Problem Solving

Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

☐**8.1 Computer Science**

☐**8.2 Design Thinking**

☐**9.4 Life Literacies and Key Skills**

Digital Citizenship

Information and Media Literacy

Technology Literacy

Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☐**1.2 Media Arts**

Creating - Conceive, Develop, and/or Construct

Performing - Integrate, Practice, and/or Present

Responding - Perceive, Evaluate, and/or Interpret

Connecting - Synthesize and/or Relate

6th Grade

Domains: Number and Operations – Fractions; Expressions and Equations	**Marking Period**: 2

Cluster Headings: Ratios and Proportional Relationships; Understand the use of variables in mathematical expressions; Write expressions that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems; Understand that expressions in different forms can be equivalent and they use the properties of operations to rewrite expressions in equivalent forms

Overview of Unit:

- Use reasoning about multiplication and division to solve ratio and rate problems about quantities
- By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates
- Expand the scope of problems for which students can use multiplication and division to solve problems and connect ratios and fractions
- Solve a wide variety of problems involving ratios and rates
- Writing, interpreting, and using expressions

Learning Targets—Big Idea and Standards

Big Idea(s):

- Understand the concept of ratios and equivalent ratios
- Use tape diagrams to model and solve ratio problems
- Use ratio tables to represent ratios and solve and compare ratio problems
- Represent ratio relationships in a coordinate plane
- Understand the concept of a unit rate and solve rate problems
- Use ratio reasoning to convert units of measure
- Write percents as fractions and fractions as percents
- Write percents as decimals and decimals percents
- Compare and order fractions, decimals, and percents
- Find a percent of a quantity and solve percent problems
- Evaluate algebraic expressions given values of their variables
- Write algebraic expressions and solve problems involving algebraic expressions
- Apply properties of operations to generate equivalent algebraic expressions
- Factor numerical and algebraic expressions
- Represent ratio relationships in a coordinate plane

Mathematics Standards: 6.RP.A, 6.EE.A.1, 6.EE.A.2a-b, 6.EE.A.3, 6.EE.A.4, 6.EE.C.9

6.RP.A: Understand ratio concepts and use ratio reasoning to solve problems

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."

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 ¾-cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger." (Clarification: Expectations for unit rates in this grade are limited to non-complex fractions.)

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.

   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.

   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?

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

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

6.EE.A: Apply and extend previous understandings of arithmetic to algebraic expressions

1. Write and evaluate numerical expressions involving whole-number exponents.

2. Write, read, and evaluate expressions in which letters stand for numbers.

   a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as $5 - y$.

   b. 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.

3. 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 $3y$.

4. 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.

6.EE.C.9: Represent and analyze quantitative relationships between dependent and independent variables

9. Use variables to represent two quantities in a real-world problem that change 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.

Success Criteria

- Write and interpret ratios using appropriate notation and language
- Recognize multiplicative relationships in ratios and describe how to determine whether ratios are equivalent
- Write ratios that are equivalent to a given ratio
- Draw and interpret tape diagrams that represent and model ratio relationships
- Use tape diagrams to solve ratio problems
- Use various operations to create, solve and complete tables of equivalent ratios
- Create graph and plot ordered pairs from a ratio relationship
- Create graphs to compare ratios
- Find and use unit rates to solve and compare rate problems
- Convert units of measure and unit rates by using ratio tables and conversion factors
- Draw models to represent and write fractions, decimals, and percents
- Write equivalent fractions with denominators of 100
- Explain why the decimal point moves when multiplying and dividing by 100
- Rewrite a group of fractions, decimals, and percents using the same representation
- Explain how to compare fractions, decimals, and percents
- Order fractions, decimals, and percents from least to greatest
- Represent percents of numbers using an equation, a ratio table, or a model
- Find percents of numbers
- Find the whole given a part and a percent
- Identify parts of an algebraic expression
- Evaluate algebraic expressions with one or more variables and operations
- Write numerical and algebraic expressions that represent real-life problems
- Explain what it means for algebraic expressions to be equivalent

- Apply the Commutative, Associative, and Distributive Properties to simplify algebraic expressions
- Use the Distributive Property to combine like terms, factor numerical expressions, and factor algebraic variables
- Identify the greatest common factor of terms including variables
- Interpret factored expressions in real-life problems

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- Chapter 3, Sections 3.1-3.6
- Chapter 4, Sections 4.1-4.4
- Chapter 5, Sections 5.1-5.4

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Responding - Perceive, Evaluate, and/or Interpret

Connecting - Synthesize and/or Relate

6th Grade

Domain: Expressions and Equations; Geometry; The Number System	**Marking Period**: 3

Cluster Headings: Reason about and solve one-variable equations and inequalities; Represent and analyze quantitative relationships between dependent and independent variables; Solve real-world and mathematical problems involving area, surface area, and volume; Apply and extend previous understandings of numbers to the system of rational numbers.

Overview of Unit:

- Write equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems
- Know that the solutions of an equation are the values of the variables that make the equation true
- Use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations
- Construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as $3x = y$) to describe relationships between quantities

- Apply reasoning about relationships among shapes to determine area, surface area, and volume
- Find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles
- Use methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms
- Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine
- Reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths
- Prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane
- Extend student's previous understanding of numbers and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers
- Reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane
- Use reasoning about multiplication and division to solve ratio and rate problems about quantities

Learning Targets—Big Idea and Standards

Big Idea(s):

- Represent ratio relationships in a coordinate plane
- Write equations in one variable and write equations that represent real-life problems
- Write and solve equations using addition, subtraction, multiplication, or division
- Find areas and missing dimensions of parallelograms, triangles, trapezoids, kites, and composite figures
- Describe and draw three-dimensional figures
- Represent prisms and pyramids using nets and use nets to find surface areas of prisms
- Find volumes and missing dimensions of rectangular prisms
- Write inequalities and represent solutions of inequalities on a number line

- Find areas and missing dimensions of parallelograms, triangles, trapezoids, kites, and composite figures
- Represent prisms using nets and use nets to find surface are of prisms and pyramids
- Find volumes and missing dimensions of rectangular prisms
- Understand the concept of negative numbers and that they are used along with positive numbers to describe quantities
- Compare and order integers and rational numbers
- Understand the concept of absolute value

Mathematics Standard(s): 6.EE.A.2c, 6.EE.B.5-8, 6.G.A, 6.NS.C.5-8

6.EE.A: Apply and extend previous understandings of arithmetic to algebraic expressions

2. Write, read, and evaluate expressions in which letters stand for numbers.

a. 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 $V = 6s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \dfrac{1}{2}$.

6.EE.B: Reason about and solve one-variable equations and inequalities

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.

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.

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

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.

6.G.A: Solve real-world and mathematical problems involving area, surface area, and volume

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.

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.

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.

4. Represent three-dimensional figures (e.g., pyramid, triangular prism, rectangular prism) 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.

6.NS.C.5-8: Apply and extend previous understandings of numbers to the system of rational numbers

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.

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.

    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.

    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.

    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.

7. Understand ordering and absolute value of rational numbers.

    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.

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

    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.

    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.

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.

Success Criteria

- Identify key words and phrases that indicate equality
- Write word sentences as equations

- Create equations to represent real-life problems
- Determine whether a value is a solution of an equation
- Apply the Addition, Subtraction, Multiplication and Division Properties of Equality to generate equivalent equations.
- Solve equations using addition, subtraction, multiplication or division
- Create equations involving addition, subtraction, multiplication or division to solve real-life problems
- Determine whether an ordered pair is a solution of an equation in two variables and what represents the independent and dependent variables
- Write, create, and graph an equation in two variables to solve real-life problems
- Explain how the area of a rectangle is used to find the area of a parallelogram
- Use the base(s) and the height of a parallelogram, triangle, and trapezoid to find its area
- Use the area of a parallelogram and one of its dimensions to find the other dimension
- Explain how the area of a parallelogram is used to find the area of a triangle
- Use the area of a triangle and one of its dimensions to find the other dimension
- Use decomposition to find the area of a figure
- Explain how the area of a parallelogram is used to find the area of a trapezoid
- Identify faces, edges, and vertices
- Sketch prisms and pyramids and its net to find the surface area of prisms and pyramids
- Use a formula to find the surface area and volume of a cube and rectangular prisms
- Apply surface areas of prisms and pyramids to solve real-life problems
- Solve for a missing dimension of a rectangular prism
- Solve real-life problems involving volumes of rectangular prisms
- Write and graph rational numbers on a number line to represent real-life quantities
- Find the opposite of an integer
- Apply integers to model real-life problems
- Order a set of integers, rational numbers, and absolute numbers from least to greatest and determine which of two integers is greater
- Interpret statements about order in real-life problems
- Explain the meaning of a rational number
- Find the absolute value of a number
- Apply absolute value in real-life problems
- Identify and plot ordered pairs in a coordinate plane and describe their locations
- Identify reflections of points in the x-axis or the y-axis
- Apply plotting points in all four quadrants to solve real-life problems
- Draw polygons in the coordinate plane and find distances between points in the coordinate plane with the same x-coordinates or the same y-coordinates
- Find horizontal and vertical side lengths of polygons in the coordinate plane
- Draw polygons in the coordinate plane to solve real-life problems
- Write and graph word sentences as inequalities
- Determine whether a value is a solution of an inequality

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Learning Plan:

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- Chapter 6, Sections 6.1-6.4
- Chapter 7, Sections 7.1-7.7
- Chapter 8, Sections 8.1-8.7

Web-based activities

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- Tools (rulers, calculators, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Web-based Activities

- ALEKS, Khan Academy, *Math and You…*)
- Concept and Tools Videos
- Standards Based Practice
- Game Closet
- *Math and You 2025* ELL Support
- Vocabulary Cards

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

x_Interdisciplinary Standards: NJSLS

X   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.

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Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☐ **9.1 Personal Financial Literacy**

Financial Health: *Financial Psychology, Civic Financial Responsibility*

Financial Landscape: *Financial Institutions, Economic & Government Influences*

Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and Debit Management, Credit Profile*

☐ **9.2 Career Awareness and Planning**

☐ **9.4 Life Literacies and Key Skills**

Creativity and Innovation

Critical Thinking and Problem Solving

Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

☐ **8.1 Computer Science**

☐ **8.2 Design Thinking**

☐ **9.4 Life Literacies and Key Skills**

Digital Citizenship

Information and Media Literacy

Technology Literacy

Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☐**1.2 Media Arts**

Creating - Conceive, Develop, and/or Construct

Performing - Integrate, Practice, and/or Present

Responding - Perceive, Evaluate, and/or Interpret

Connecting - Synthesize and/or Relate

6ᵗʰ Grade

Domain: Statistics and Probability; Personal Financial Literacy	**Marking Period:** 4

Cluster Headings: Develop understanding of statistical variability; Summarize and describe distributions; Financial Health

Overview of Unit:

- Build on and reinforce understanding of numbers where students begin to develop their ability to think statistically
- Recognize that a data distribution may not have a definite center and that there are different ways to measure center that yield different values
- The median measures center in the sense that it is roughly the middle value
- The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally and in the sense that it is a balance point
- Recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different sets of data can have the same mean and median yet be distinguished by their variability
- Learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected

- Develop the necessary knowledge, skills and dispositions to thrive in an interconnected global economy

Learning Targets—Big Idea and Standards

Big Idea(s):

- Build on and reinforce understanding of numbers where students begin to develop their ability to think statistically
- Recognize that a data distribution may not have a definite center and that there are different ways to measure center that yield different values
- The median measures center in the sense that it is roughly the middle value
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- Learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected
- Explore money management
- Explore the psychology of spending and saving that influences decisions related to finances

Mathematics Standards: 6.SP.A, 6.SP.B:

6.SP.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.

6.SP.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

Financial Literacy Standards:

- 9.1.2.FP.1: Explain how emotions influence whether a person spends or saves
- 9.1.2.FP.2: Differentiate between financial wants and needs
- 9.1.2.FP.3: Identify the factors that influence people to spend or save (e.g., commercials, family, culture, society)
- 9.1.2.PB.2: Explain why an individual would choose to save money
- 9.1.5.CP.1: Identify the advantages of maintaining a positive credit history
- 9.1.5.EG.3: Explain the impact of the economic system on one's personal financial goals
- 9.1.5.FI.1: Identify various types of financial institutions and the services they offer including banks, credit unions, and credit card companies
- 9.1.5.FP.1: Illustrate the impact of financial traits on financial decisions
- 9.1.5.FP.3: Analyze how spending choices and decision-making can result in positive or negative consequences

Success Criteria

- Recognize questions that anticipate a variety of answers
- Construct and interpret a dot plot using data to answer a statistical question
- Explain how the mean, median, and mode summarizes a data set with a single number
- Find the mean, median, and mode of a data set
- Explain how changes to a data set affect the measures of center
- Use a measure of centers to answer a statistical question
- Explain how the range and interquartile range describe the variability of a data set with a single number
- Find the range and interquartile range of a data set with and without an outlier
- Use the interquartile range to identify outliers
- Find the mean absolute deviation of a data set explain how it describes the variability of a data set with a single number
- Make, interpret, and explain how to choose a stem and-leaf plot
- Use a stem-and leaf plot to describe the distribution of a data set
- Make and explain how to draw and interpret a histogram
- Determine whether a question can be answered using a histogram
- Explain what it means for a distribution to be skewed left, skewed right, or symmetric
- Use data displays to describe shapes of distributions
- Use shapes of distributions to compare data sets and describe the shape of a distribution
- Use the shape of a distribution to determine which measure of center or variation best describes the data.
- Find the five number summary of a data set

- Make a box-and whisker plot and explain what the box and the whiskers of a box-and-whisker plot represent
- Compare data sets represented by box-and whisker plots
- Understand how taxes affect one's personal finances
- Explain how a budget aligned with an individual's financial goals can help prepare for life events
- Credit management includes making informed choices about sources of credit and requires an understanding of the cost of credit

Evidence of Learning

- Model Curriculum Unit Assessment
- Teacher-made tests and quizzes
- Publisher's tests and quizzes
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Daily assignments

District Learning Plan and Materials

Materials:

- Text: *Math and You 2025*
- *Math and You* Record and Practice Journal
- *Math and You* Assessment Book
- See *Math and You* Materials List

Learning Plan:

Math and You 2025
- Chapter 9, Sections 9.1-9.5
- Chapter 10, Sections 10.1-10.5
- Banzai.org

Web-based activities

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- Concept and Tools Videos
- Standards Based Practice
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- Interactive Whiteboard Lessons
- Online Lesson Video
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Differentiation:

Math and You 2025 Website- "Differentiating the Lesson"
- STEAM Performance Task
- Intensive Intervention Activities
- Lesson Tutorials (videos)
- Skills Review Handbook
- Basic Skills Handbook

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