Greenwich-Stow Creek Partnership Schools

Seventh Grade Math Curriculum

Approved by the Board of Education

Stow Creek Board of Education: 8-22-2024

Greenwich Board of Education: 8-21-2024

7th Grade

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

Cluster Heading: Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Overview of Unit:

- Develop a unified understanding of numbers, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers
- Extend addition, subtraction, multiplication, and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division
- View negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero) where students can explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers
- Use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems

Learning Targets—Big Idea and Standards

Big Ideas:

- Understand absolute values of and comparing rational numbers
- Find sums, differences, products, and quotients of integers and rational numbers
- Convert between different forms of rational numbers
- Simplify algebraic expressions
- Find sums and differences of linear expressions
- Apply properties of operations to generate equivalent expressions
- Factor algebraic expressions

Mathematics Standards: 7.NS.A, 7.EE.A

7.NS.A: Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers

1) Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram

a) Describe situations in which opposite quantities combine to make 0. For example, in the first round of a game, Maria scored 20 points. In the second round of the same game, she lost 20 points. What is her score at the end of the second round?

b) Understand $p+q$ as the number located a distance $|q|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts

c) Understand subtraction of rational numbers as adding the additive inverse, $p-q=p+(-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts

d) Apply properties of operations as strategies to add and subtract rational numbers

2) Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers

a) Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1)=1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts

b) Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If q and q are integers, then $-\left(\frac{p}{q}\right)=\frac{(-p)}{q}=\frac{p}{(-q)}$. Interpret quotients of rational numbers by describing real world contexts.

c) Apply properties of operations as strategies to multiply and divide rational numbers

d) Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats

3) Solve real-world and mathematical problems involving the four operations with rational numbers (Clarification: Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)

7.EE.A: Use properties of operations to generate equivalent expressions

1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients

2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a+0.05a=1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."

Success Criteria

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- Graph and compare rational numbers on a number line
- Find the absolute value of a rational number
- Explain how to model addition and subtraction of integers and rational numbers on a number line
- Find sums and differences of integers and rational numbers by reasoning about absolute values
- Explain why the sum of a number and its opposite is 0
- Use properties of addition to efficiently add rational numbers
- Explain how subtracting integers is related to adding integers
- Find distances between numbers on a number line
- Explain the rules for multiplying and dividing integers
- Find products and quotients of integers and rational numbers with the same and different signs
- Explain the difference between terminating and repeating decimals
- Write fractions and mixed numbers as decimals
- Write decimals as fractions and mixed numbers
- Explain the rules for multiplying and dividing rational numbers
- Identify terms and like terms of algebraic expressions
- Combine like terms to simplify algebraic expressions
- Write and simplify algebraic expressions to solve real-life problems
- Explain the difference between linear and nonlinear expressions
- Find opposites of terms that include variables
- Apply properties of operations to add and subtract linear expressions
- Explain how to apply and use the Distributive Property to factor algebraic expressions
- Use properties of operations to simplify algebraic expressions
- Determine whether two expressions are equivalent
- Identify the greatest common factor of terms, including variable terms
- Write a term as a product involving a given factor

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 1.1-1.5
- Chapter 2, Sections 2.1-2.5
- Chapter 3, Sections 3.1-3.4

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	

7th Grade

Domains: Expressions and Equations; Ratios and Proportional Relationships	**Marking Period**: 2

Cluster Headings: Solve real-life and mathematical problems using numerical and algebraic expressions and equations; Analyze proportional relationships and use them to solve real-world and mathematical problems.

Overview of Unit:

- Use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems
- Extend understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems
- Use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease
- Solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects
- Graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships

Learning Targets—Big Idea and Standards

Big Idea(s):

- Write and solve equations using addition, subtraction, multiplication, and division
- Write and solve two-step equations and inequalities
- Write inequalities and represent solutions of inequalities on number lines
- Write and solve inequalities using addition, subtraction multiplication, and division
- Understand ratios of rational numbers and use ratio tables to represent equivalent rations
- Understand rates involving fractions and use unit rates to solve problems
- Determine whether two quantities are in proportional relationship
- Use proportions to solve ratio problems and make circle graphs

- Represent proportional relationships using graphs and equations
- Solve problems involving scale drawings

Mathematics Standards: 7.EE.B.4. 7.RP.A.1-2, 7.G.A.1

7.EE.B: Solve real-life and mathematical problems using numerical and algebraic expressions and equations

1. Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems by reasoning about the quantities

    a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms with accuracy and efficiency. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

    b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make and describe the solutions.

7.RP.A: Analyze proportional relationships and use them to solve real-world and mathematical problems

1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $(\frac{1}{2})/(\frac{1}{4})$ miles per hour, equivalently 2 miles per hour

2. Recognize and represent proportional relationships between quantities

    a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin

    b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationship

    c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$

    d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and $(1, r)$ where r is the unit rate

7.G.A: Draw, construct, and describe geometrical figures and describe the relationships between them

1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale

Success Criteria

- Apply the Addition, Subtraction, Multiplication, and Division Properties of Equality to produce equivalent equations
- Solve equations using addition, subtraction, multiplication, or division
- Apply equations involving addition, subtraction, multiplication, and division to solve real-life problems
- Apply properties of equality to produce equivalent equations
- Apply and solve two-step equations using the basic operations and real-life problems
- Apply two-step equations to solve real-life problems
- Write word sentences as inequalities
- Determine whether a value is a solution of an inequality
- Graph the solutions of inequalities
- Apply the Addition and Subtraction Properties of Inequality to produce and solve equivalent inequalities.
- Apply inequalities involving addition, subtraction, multiplication, or division to solve real-life problems
- Apply the Multiplication and Division Properties of Inequality to produce equivalent inequalities
- Apply properties of inequality to generate equivalent inequalities
- Apply and solve two-step inequalities using the basic operations and real-life problems
- Write and interpret ratios involving rational numbers
- Use various operations to create tables of equivalent ratios
- Use ratio tables and unit rate to solve ratio problems
- Find unit rates for rates involving fractions
- Determine whether ratios form a proportion
- Explain how to determine whether quantities are proportional
- Distinguish between proportional and nonproportional situations
- Solve proportions using various methods
- Find a missing value that makes two ratios equivalent and use proportions to represent and solve real-life problems
- Make circle graphs
- Find and determine whether quantities are proportional using a graph
- Create equations to represent proportional relationships
- Find an actual distance in a scale drawing and find the actual lengths and areas of real-life objects
- Explain the meaning of scale and scale factor

Evidence of Learning—District Assessment Tools

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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 4, Sections 4.1-4.7
- Chapter 5, Sections 5.1-5.6

Web-based activities

- ALEKS, Khan Academy, *Math and You*…)
- Concept and Tools Videos
- Standards Based Practice
- Game Closet
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- Refer to student IEP

Accommodations for at Risk Students (504):

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- Tools (rulers, calculators, etc.)
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- Multi-leveled cooperative learning groups
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7th Grade

Domain: Ratio and Proportional Relationships; Expressions and Equations; Statistics and Probability	**Marking Period**: 3

Cluster Headings: Analyze proportional relationships and use them to solve real-world and mathematical problems; Solve real-life and mathematical problems using numerical and algebraic expressions and equations; Use random sampling to draw inferences about a population; Draw informal comparative inferences about two populations; Investigate chance processes and develop, use, and evaluate probability models.

Overview of Unit:

- Use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems
- Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations
- Begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences

Learning Targets—Big Idea and Standards

Big Idea(s):

- Rewrite fractions, decimals, and percents using different representations
- Use percent proportion and percent equations to find missing quantities
- Find percents of change in quantities
- Solve percent problems involving discounts and markups
- Understand and apply the simple interest formula
- Understand how the probability of an event indicates its likelihood
- Develop probability models using experimental and theoretical probability
- Find sample spaces and probabilities of compound events
- Design and simulate to find probabilities of compound events
- Understand how to use random samples to make conclusions about population
- Understand the variability in samples of a population
- Compare populations using measures of center and variation
- Use random sampling to compare populations

Mathematics Standards: 7.RP.A.3, 7.EE.A.2, 7.EE.B.3, 7.SP.A.1-2, 7.SP.B.3-4, 7.SP.C.5-8

7.RP.A: Analyze proportional relationships and use them to solve real-world mathematical problems

3. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

7.EE.A: Use properties of operations to generate equivalent expressions

2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."

7.EE.B: Solve real-life and mathematical problems using numerical and algebraic expressions and equations

3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.

7.SP.A: Use random sampling to draw inferences about a population

1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.

2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.

7.SP.B: Draw informal comparative inferences about two populations

3. Informally assess the degree of visual overlap of two numerical data distributions with similar variability, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.

4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.

7.SP.C: Investigate chance processes and develop, use, & evaluate probability models

5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around ½ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.

7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.

a. Develop a uniform probability model by assigning equal probability to all outcomes and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.

b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?

8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.

b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.

c. Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?

Success Criteria

- Write percents as decimals and decimals as percents
- Write fractions as decimals and percents
- Compare and order fractions, decimals, and percents
- Write proportions and equations to represent percent problems
- Solve a proportion or a percent equation to find a percent, a part, or a whole
- Explain the meaning of percent of change
- Find the percent of increase, decrease, or percent error in a quantity
- Use percent models to solve problems involving discounts and markups
- Write and solve equations to solve problems involving discounts and markups
- Explain the meaning of and use formula to solve simple interest
- Find the sample space of an experiment
- Use probability and relative frequency to describe the likelihood of an event
- Use relative frequency to make predictions
- Explain the meanings of experimental and theoretical probabilities
- Find and compare experimental and theoretical probabilities
- Use simulations to find experimental probabilities
- Find the sample space of two or more events
- Find the total number of possible outcomes and find the probabilities of compound event
- Design a simulation to model a real-life situation
- Recognize favorable outcomes in a simulation
- Explain why a sample is biased or unbiased and why conclusions made from a biased sample may not be valid
- Use an unbiased sample to make a conclusion about a population
- Use multiple random samples to make conclusions about a population and to examine variation in estimates
- Find the measures of center and variation of a data set and determine whether there is a significant difference in the measures of center of two data sets
- Describe the visual overlap of two data distributions numerically
- Compare random samples using measures of center and variation

- Recognize whether random samples are likely to be representative of a population
- Compare populations using multiple random samples

Evidence of Learning—District Assessment Tools

- Model Curriculum Unit Assessment
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District Learning Plan and Materials

Materials:

- Text: *Math and You 2025*
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Learning Plan:

Math and You 2025

- Chapter 6, Sections 6.1-6.6
- Chapter 7, Sections 7.1-7.4
- Chapter 8, Sections 8.1-8.4

Web-based activities

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Accommodations for Special Education:

- Visual models/drawings
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- 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):

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- Use of manipulatives
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- Multi-leveled cooperative learning groups
- Reduced assignments

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

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☐**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

7th Grade

Domain: Geometry; Personal Financial Literacy	**Marking Period:** 4

Cluster Headings: Draw, construct and describe geometrical figures and describe the relationships between them; Solve real-life and mathematical problems involving angle measure, area, surface area, and volume; Financial Health

Overview of Unit:

- Solve problems involving the area and circumference of a circle and surface area of three-dimensional objects

- Reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions and gain familiarity with the relationships between angles formed by intersecting lines
- Work with three-dimensional figures, relating them to two-dimensional figures by examining cross-sections
- Solve real-world and mathematical problems involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms
- Develop the necessary knowledge, skills and dispositions to thrive in an interconnected global economy

Learning Targets—Big Idea and Standards

Big Idea(s):

- Find the circumference and area of a circle
- Find perimeters and areas of composite figures
- Construct a polygon with given measures
- Use facts about angle relationships to find unknow angle measures
- Understand geometric shapes and angle
- Find surface area of prisms, cylinders, and pyramids
- Find volume of prisms and pyramids
- Describe the cross sections of a solid
- Explore money management
- Explore the psychology of spending and saving that influences decisions related to finances

Mathematics Standards: 7.EE.B.4a, 7.G.A.2-3, 7.G.B.4-6

7.EE.B: Solve real-life and mathematical problems using numerical and algebraic expressions and equations

- Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems by reasoning about the quantities.
    - Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms with accuracy and efficiency. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

7.G.A: Draw, construct, and describe geometrical figures and describe the relationships between them

- Draw (with technology, with ruler and protractor, as well as freehand) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

- Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

7.G.B: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume

- Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
- Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
- Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

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

- Explain the relationship between the diameter and circumference of a circle
- Use a formula to find the circumference and area of a circle
- Estimate the area of a circle
- Use a grid to estimate perimeters and areas
- Identify the shapes that make up a composite figure and find the perimeter and areas
- Determine whether given measures result in one triangle, many triangles, or no triangle
- Draw polygons given angle measures or side lengths
- Identify adjacent, complementary, supplementary, and vertical angles
- Use equations to find unknown angle measures in real-life situations
- Use a formula to find the surface area of a prism, cylinder, or a regular pyramid
- Find the lateral surface area of a prism, cylinder, or a regular pyramid
- Use a formula to find the volume of a prism and to find a missing dimension

- Use a formula to find the volume of a pyramid and to solve a real-life problem
- Explain the meaning of a cross section and describe cross sections of prisms, pyramids, cylinders, and cones
- 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

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

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, 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.

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	