Readington Township Public Schools

Grade 5 Honors & Advanced 6th Math Curriculum

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Grade 5 Honors/Grade 6 Advanced Mathematics
Overview
Readington Township Public Schools' K-8 mathematics curriculum provides students with a strong foundati mathematics content while promoting and instilling the skills of problem-solving, communication in mather making mathematical connections, and reasoning. This course is created with the goal of developing strong, cogent mathematical thinking, and independent mathematical problem-solving skills. The course is directly correlated to the sixth and seventh-grade New Jersey Student Learning Standards (NJSLS). All sixth-grade co is covered and students study approximately half of the seventh-grade content.
STUDENT OUTCOMES   (Linked to **Jersey Student Learning Standards for Mathematics 2023**)

RATIOS AND PROPORTIONS (6.RP & 7.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 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.
   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 ½ mile in each ¼ hour, compute the unit rate as the complex fraction (½)/ (¼) 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 relationships.

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.

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.

THE NUMBER SYSTEM (6.NS & 7.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 (⅔) ÷ (¾) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (⅔)÷(¾) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b)÷ (c/d) = ad/bc). How much chocolate will each person get if 3 people share ½ lb. of chocolate equally? How many ¾ cup servings are in ⅔ of a cup of yogurt? How wide is a rectangular strip of land with length ¾ mi and area ½ square mi?

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).

C. 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℃ > -7℃ to express the fact that −3℃ is warmer than −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.

      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.

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 realworld 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 -(p/q) = (-p)/q = 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.)

EXPRESSIONS AND EQUATIONS (6.EE & 7.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.

      c. 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 $s = \frac{1}{2}$.

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.

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 $x+p = q$ 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.

C.   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 $d\,t = 65$ to represent the relationship between distance and time.

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."

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 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 ¾ inches long in the center of a door that is 27 ½ 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.

4. 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.

GEOMETRY (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.

STATISTICS AND PROBABILITY (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.

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.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.

6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Strategies

- Teacher presentation
- Teacher read-aloud
- Group discussion
- Small Group instruction
- Group presentations
- Interactive Smartboard Lessons
- Partner work
- Museum walks
- Math talk (students explain their thinking)
- Small Group Work
- Daily 5 Math
- Centers/ stations

Accommodations

Accommodations and Modification Addendum

Assessments

Formative	Summative
- Independent student work - Ready Classroom Lesson Quizzes - Teacher Observations - Class Participation - Class Discussions - Class Assignments - Homework Assignments - Notebooks - Anecdotal Records	- Mid-Unit Test - Unit Test
Benchmark	**Alternative**
- I-Ready Diagnostic - Performance Assessments	- Live Online Assessment Tools (Kahoot, Brainpop) - Student Projects - Student Presentations - Self-Assessments

Resources

Required/Primary	Supplemental
Big Ideas Math 6 textbook (Ron Larson and Laurie Boswell; published by Big Ideas Learning) - Associated *Big Ideas Record and Practice Journal*	- Brain Pop - IXL - Reflex Math - Online Tutorials (Learnzillion, Khan Academy, Math Antics) - Online Math Games (Math is Fun, Funbrain, Cool Math Games, Math Playground) - Illustrative Mathematics (www.illustratviemathematics.org) - Explore Learning Gizmos - Estimation 180

Essential Questions And Content

The Number System

Numerical Expression and Factors

- How can you use repeated factors in real-life situations?
- Without dividing, how can you tell when a number is divisible by another number?
- How can you find the greatest common factor and least common multiple of two numbers?

Fractions and Decimals

- What does it mean to multiply or divide fractions?
- What does it mean to multiply or divide decimals?

Integers

- How can you represent numbers on a coordinate plane or number line in relation to 0?
- How can you use a number line to better understand integers?
- How can you use integers to represent real-life situations including the velocity and speed of an object?
- How can you tell if the sum or quotient of two integers is positive, negative or zero?
- How are adding integers and subtracting integers related?

Rational Numbers

- How can you use a number line to order rational numbers?
- How can you use what you know about adding integers to add rational numbers?
- Why is the product of two negative rational numbers positive?

Expressions and Equations

Algebraic Expression and Properties

- How can you write and evaluate an expression that represents a real-life problem?
- How can you write an expression that represents an unknown quantity?
- Does the order in which you perform an operation matter?

Equations, Inequalities & Equations

- How can you use addition, subtraction, multiplication and/or division to solve an equation?
- How can you write an equation with two variables?
- How can you represent the solution to an inequality?
- How can you simplify an algebraic expression?
- How can you use algebra tiles to solve one-step and two-step equations?

Ratios and Proportional Relationships

Ratios and Rates

- How can you find, represent, and compare the relationship between two quantities?
- What is the connection between ratios, fractions, and percent?
- How can you compare lengths between the customary and metric systems Proportions?
- How do rates help you describe real-life problems in words and graphically?
- How can proportions help you decide when things are "fair"?
- How can you use a graph or equation to show the relationship between two quantities that vary directly

Percents

- How does the decimal point move when you rewrite a percent as a decimal and vice versa?
- How can you order numbers that are written as fractions, decimals, and percents?
- How can you use models to estimate percent questions?
- What is the percent of decrease and percent of increase?

Geometry

Areas of Polygons
- How can you derive a formula for the area of a parallelogram, triangle, and trapezoid?
- How do you find the lengths of the line segments in a coordinate plane?

Surface Area and Volume

- How can you draw a three-dimensional figure?
- How can you find the area of the entire surface of a prism?
- How can you find the volume of a rectangular prism with fractional edge lengths?

Statistics and Probability
Statistical Measures
- How can you find and describe the average of a data set?
- How can you describe the spread of a data set? Data Displays
- How can you use intervals, tables, and graphs to organize data?
- How can you describe the shape of a distribution of a data set?
- How can you use quartiles to represent data graphically?

Pacing and Interdisciplinary Connections

<u>**The Number System**</u>
Numerical Expressions and Factors (15 days, Ch 1)
Fractions and Decimals (15 days, Ch 2)
Integers and the Coordinate Plane (10 days, Ch 6)
Integers (10 days, Ch 11)
Rational Numbers (10 days, Ch 12)
Interdisciplinary Connections:
Science 5-ESS-1-2 Represent data in graphical displays to reveal patterns.
<u>Activity:</u> Students will create tables and graphs to record patterns in multiplying and dividing integers, using the pattern visible to generate an algorithm. They will also read graphs to determine how negative and positive numbers are used to represent real-world altitude above and below sea level.

<u>**Expressions and Equations**</u>
Algebraic Expressions and Properties (10 days, Ch 3)
Equations and Inequalities (15 days, Ch 7)
Expressions and Equations (10 days, Ch 13)
Interdisciplinary Connections:
RI.CR.5.1. Quote accurately from a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.
<u>Activity:</u> Students will learn to carefully attend to the words in context and relate key phrases to different mathematical operation symbols and inequality symbols. Students will also tend carefully to text to write numerical and algebraic expressions to represent the word problem.

<u>**Ratios and Proportional Relationships**</u>
Ratios and Rates (10 days, Ch 5)
Ratios and Proportions (10 days, Ch 14) Percent (10 days, Ch 15)
Interdisciplinary Connections:
Science: 5-PS1-2 Measure and graph quantities such as weight to address scientific and engineering questions and problems.
<u>Activity:</u> Students will measure the amount of food coloring added to an icing to make different shades. They will compare the resulting colors. The students will graph the relationships between food coloring drops and icing amount, to determine how the graph shows which ratio is greater.

Geometry
Areas of Polygons (10 days, Ch 4)
Surface Area and Volume (10 days, Ch 8)
Interdisciplinary Connections:
Science 5-PS1-3 Make observations and measurements to identify materials based on their properties.
Activity: Students will categorize and find the area of polygons based on their properties. They will demonstrate an understanding of which properties apply to ALL shapes or SOME shapes in each category. They will use these properties to determine shape type and then apply the correct formula to find its area/surface area/volume.

Statistics and Probability
Statistical Measures (10 days, Ch 9)
Data Displays (8 days, Ch 10)
Interdisciplinary Connections:
SL.PI.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
Activity: Students will create a survey to describe what is typical of a 5th grader, students will analyze data using measures of center and spread. They will decide on a pictorial representation for this data and make posters for each characteristic measured. The class, as a whole, will create a book or bulletin board display with what is typical (e.g., height, age, eye color, favorites, etc).

Career, Computer Science, and Key Skills

The Number System
- **Career Ready Practices**
  Act as a responsible and contributing community member and employee
  Utilize critical thinking to make sense of problems and persevere in solving them.
  Activity: Students have a problem-solving board from which they select a new problem, at least weekly. These problems require logical thinking and the utilization of multiple strategies in order to reach a solution successfully. Students must describe their solution, in writing or video, to convince the reader they are correct.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
  Activity: Students, in small groups, will create a newsletter to be sent to families. They will include a short description of a career that frequently involves arithmetic. This will require students to identify the qualifications for the career they chose.

- **9.4 Life Literacies and Key Skills**
  9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.
  9.4.5.DC.4: Model safe, legal, and ethical behavior when using online or offline technology
  9.4.5.IML.2: Create a visual representation to organize information about a problem or issue.
  9.4.5.TL.1: Compare the common uses of at least two different digital tools and identify the advantages and disadvantages of using each.
  Activity: Using the teacher-created word problems involving typical household finances, students will discuss what tools/technology could be used to help solve household financial problems. Students will then use a digital tool to help them solve problems.

- **Computer Science**
  8.1.5.DA.5: Propose cause and effect relationships, predict outcomes, or communicate ideas using data.

Activity: Students will use a spreadsheet to analyze the impact of exponents on numbers. They will understand that while a calculator can be used for this purpose when repeatedly making the same computation, a spreadsheet is a more effective tool.

Expressions and Equations

- **Career Ready Practices**
  Act as a responsible and contributing community member and employee.
  Attend to financial well-being.
  Activity: Students will utilize equations to determine how long to reach a savings goal. When working together in class and online, students will show respect for each other, provide each other with necessary information and assistance through this challenging unit, and work together cooperatively to develop and describe their equations, and the life situations that are represented. They will choose a savings goal, and determine under different circumstances, how much they would have to save to reach it in different time periods. Also, consider how they would earn the money necessary to save.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
  Activity: The activity above will include communication, collaboration and leadership skills required in a career. It will also require students to research the minimum wage in NJ and other jobs to determine pay scale.

- **9.4 Life Literacies and Key Skills**
  9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community, and global.
  9.4.5.DC.4: Model safe, legal, and ethical behavior when using online or offline technology.
  9.4.5.IML.5: Distinguish how media are used by individuals, groups, and organizations for varying purposes.
  Activity: Students will utilize equations to determine how long to reach a savings goal. Students will discuss what programs or online platforms can be used to help maintain savings goals.

- **Computer Science**
  8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships and support a claim.
  Activity: The activity above will provide an opportunity to use digital tools to create line graphs in a coordinate plane. Students will then print that image, and add it to a document, with text, to demonstrate to their readers the importance of saving money over time to reach their goal.

Ratios & Proportions

- **Career Ready Practices**
  Act as a responsible and contributing community member and employee.
  Utilize critical thinking to make sense of problems and persevere in solving them.
  Activity: Students will complete Chapter 5, Alternate Assessment as an in class activity.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification and examples of these requirements.
  Activity: Students will include a self-created survey of families and community members to further enhance its applicability to career standards. Survey questions to include topics related to the position of employment and education achieved.

- **9.4 Life Literacies and Key Skills**

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process.
9.4.5.TL.2: Sort and filter data in a spreadsheet to analyze findings.
9.4.5.DC.3: Distinguish between digital images that can be reused freely and those that have copyright restrictions.
Activity: Students will include a self-created survey of families and community members to further enhance its applicability to career standards. Survey questions to include topics related to the position of employment and education achieved.

- **Computer Science**
  8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
  Activity: In the activity above, students will use calculators, spreadsheets and graphing tools to graph their results and explain their findings.

Geometry
- **Career Ready Practices**
  Act as a responsible and contributing community member and employee.
  Consider the environmental, social and economic impacts of decisions.
  Demonstrate creativity and innovation
  Use technology to enhance productivity, increase collaboration and communicate
  effectively.
  Work productively in teams while using cultural/global competence.
  Activity: Students will make several models of a juice box package. For each, students will analyze the impacts various designs have on cost, material usage and societal enjoyment of the resulting product. They will select the best product packaging based on their analysis and present to the company design selection committee.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.5.CAP.7: Identify factors to consider before starting a business.
  Activity: During the course of the project above, students will discuss the factors involved in starting a juice box business.

- **9.4 Life Literacies and Key Skills**
  9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process.
  9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images, graphics, or symbols.
  9.4.5.IML.4: Determine the impact of implicit and explicit media messages on individuals, groups, and society as a whole.
  Activity: During the course of the project above, students will research and discuss the process of developing a product.

- **Computer Science**
  8.1.5.AP.2: Create programs that use clearly named variables to store and modify the data.
  Activity: Students will create a program to compute the volume of their juice box that will modify their data as they change their juice box dimensions.

Statistics and Probability
- **Career Ready Practices**
  Act as a responsible and contributing community member and employee
  Demonstrate creativity and innovation.
  Utilize critical thinking to make sense of problems and persevere in solving them.

Activity: Students will create and send surveys to students and/or parents to analyze and create a "What's Typical about a 5th grader" product at the conclusion of this unit.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
  Activity: This will be incorporated into the project as described above.

- **9.4 Life Literacies and Key Skills**
  9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity.
  9.4.5.TL.5: Collaborate digitally to produce an artifact.
  9.4.8.DC.7: Collaborate within a digital community to create a digital artifact using strategies such as crowdsourcing or digital surveys.
  Activity: This will be incorporated into the project as described above.

- **Computer Science**
  8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
  Activity: This will be incorporated into the project as described above