Readington Township Public Schools

Seventh Grade Math

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Seventh Grade Mathematics

Overview

The Seventh Grade Math course is directly aligned with the New Jersey Student Learning Standards ("NJSLS") for grade 7. Through their work in this course, students will understand and apply their knowledge in real-world applications. The focus will be on the content as specified in the NJSLS, as well as the NJSLS Practice Standards. The Practice Standards focus on the development of competencies used by mathematicians in all grades and throughout life.

Students in this course will develop an understanding of and apply proportional relationships including percent problems. Students will develop an understanding of operations with rational numbers and work with expressions and linear equations. Students will solve problems involving scale drawings and informal geometric constructions, and work with two- and three-dimensional shapes to solve problems involving area, surface area, and volume. Students in this course will make inferences based on samples, and examine probability models.

STUDENT OUTCOMES

(Linked to New Jersey Student Learning Standards for Mathematics 2023)

RATIOS & PROPORTIONAL RELATIONSHIPS (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 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 (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 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 & EQUATIONS (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."

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 (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.
2. 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.
3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

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

4 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.

5 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.

6 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.

STATISTICS & PROBABILITY (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.

B. Draw informal comparative inferences about two populations

3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, 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.

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?

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	• Mid-Unit Test • Unit Test

• Class Discussions • Class Assignments • Homework Assignments • Notebooks • Anecdotal Records	
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 7* 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

- How can I represent addition and subtraction on a horizontal or vertical number line?
- How can I interpret sums of rational numbers in real-world situations?
- How can I show that the distance between two rational numbers on the number line is the absolute value of their difference?
- How do I multiply and divide signed numbers?
- How do I use division to convert a rational number to a decimal?
- How do I add and subtract rational numbers?
- How do I multiply and divide rational numbers using the properties of operations?
- How can I apply the convention of order of operations to add, subtract, multiply, and divide rational numbers?
- How do I solve real-world problems involving the four operations with rational numbers?

Expressions and Equations

- How can I add and subtract linear expressions having rational coefficients, using properties of operations?
- How do I factor and expand linear expressions having rational coefficients, using properties of operations?
- How do I write expressions in equivalent forms to shed light on the problem and interpret the relationship between the quantities in the context of the problem?
- How can I solve multi-step real-life problems and mathematical problems using rational numbers in any form?
- How do I convert between decimals and fractions and apply properties of operations when calculating rational numbers?
- How do I estimate to determine the reasonableness of answers?
- How do I compare an arithmetic solution to a word problem to the algebraic solution for the word problem, identifying the sequence of operations in each solution?
- How do I write and fluently solve an equation of the form $px + q + r$ or $p(x + q) = r$ in order to solve a word problem?

- How do I write an inequality of the form $px + q > r$, $px + q < r$, $px + q \geq r$, or $px + q \leq r$ to solve a word problem?
- How do I graph the solution set of the inequality?
- How do I interpret the solution to an inequality in the context of the problem?

Ratios and Proportional Relationships

- How can I compute unit rates with ratios of fractions?
- How can I compute unit rates with ratios of fractions representing measurement quantities in both like and different units of measure?
- How can I use tables and graphs to determine if two quantities are in a proportional relationship?
- How do I identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships?
- How do I write equations representing proportional relationships?
- How do I interpret the origin and (1,r) on the graph of a proportional relationship in context?
- How do I interpret a point on the graph of a proportional relationship in context?
- How can I use proportions to solve multi-step percent problems including simple interest, tax, markups, discounts, gratuities, commissions, fees, percent increase, percent decrease, and percent error?
- How can I use proportions to solve multi-step ratio problems?
- How can I use ratios and proportions to create scale drawings?
- How can I reproduce a scale drawing at a different scale?
- How can I compute actual lengths and areas from a scale drawing?
- How do I solve problems involving scale drawings using populations?

Geometry

- How do I solve problems by finding the area and circumference of circles?
- How can I show that the area of a circle can be derived from the circumference?
- How can I use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations?
- How can I solve mathematical problems by writing and solving simple algebraic equations based on the relationships between and properties of angles (supplementary, complementary, vertical, and adjacent)?
- How can I solve real-world and mathematical problems involving area of two-dimensional objects composed of triangles, quadrilaterals, and polygons?
- How can I solve real-world and mathematical problems involving volume and surface area of three-dimensional objects composed of cubes and right prisms?
- How can I draw geometric shapes with given conditions, including constructing triangles from three measures of angles or sides?
- How do I recognize conditions determining a unique triangle, more than one triangle, or no triangle?
- How do I analyze three-dimensional shapes (right rectangular pyramids and prisms) by examining and describing all of the two-dimensional figures that result from slicing it at various angles?

Statistics and Probability

- How can I analyze and distinguish between representative and non-representative samples of a population?
- How do I analyze data from a sample to draw inferences about the population?
- How do I generate and analyze the variation in multiple samples of the same size?
- How can I locate, approximately, the measure of center (mean or median) of a distribution?
- How do I visually assess, given the distribution, the measure of spread (mean absolute deviation or interquartile range)?
- How do I visually compare two numerical data distributions and describe the degree of overlap?
- How do I measure or approximate the difference between the measures of center and express it as a multiple of a measure of variability?
- How can I use measures of center and variability to draw inferences and compare them about two populations?
- How can I draw conclusions about the likelihood of events given their probability?
- How can I collect data on chance processes, noting the long-run relative frequency?
- How can I predict the approximate relative frequency given the theoretical probability?
- How can I develop and use a uniform probability model to determine the probability of events?

- How do I develop (non-uniform) probability models by observing frequencies in data that has been generated from a chance process?
- How can I use organized lists, tables, and tree diagrams to represent sample spaces?
- How can I identify the outcomes in a sample space that make up the described event given a description of an event using everyday language?
- How can I design and use simulations to generate frequencies for compound events?

Pacing and Interdisciplinary Connections

The Number System

Integers (15 days)

1. Integers and Absolute Value
2. Adding Integers
3. Subtracting Integers
4. Multiplying Integers
5. Dividing Integers

Rational Numbers (15 days)

1. Rational Numbers
2. Adding Rational Numbers
3. Subtracting Rational Numbers
4. Multiplying and Dividing Rational Numbers

Interdisciplinary Connections

- **W.NW.7.3** Write narratives to develop real or imagined experiences or events using effective techniques, relevant descriptive details, and well-structured event sequences.
  Activity: Students will write a story using all for operations of rational numbers.

Expressions and Equations

Expressions and Equations (13 days)

1. Algebraic Expressions
2. Adding and Subtracting Linear Expressions
3. Solving Equations Using Addition and Subtraction
4. Solving Equations Using Multiplication and Division
5. Solving Two-Step Equations

Inequalities (13 days)

1. Writing and Graphing Inequalities
2. Solving Inequalities Using Addition and Subtraction
3. Solving Inequalities Using Multiplication and Division
4. Solving Two-Step Inequalities

Interdisciplinary Connections:

- **W.IW.7.2 Write** informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
  Activity: Students will write a lesson on simplifying an algebraic expression.

- **MS-LS2-2- Construct** an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
  Activity: Students will write inequalities comparing the pounds of fish a killer whale eats in captivity versus its normal ecosystem.

Ratios and Proportional Relationships

Ratios and Proportions (17 days)

1. Ratios and Rates
2. Proportions
3. Writing Proportions
4. Solving Proportions

5. Direct Variation

Percents (20 days)

1. Percents and Decimals
2. Comparing and Ordering Fractions, Decimals, and Percents
3. The Percent Proportion
4. The Percent Equation
5. Percents of Increase and Decrease
6. Discounts and Markups
7. Simple Interest

Interdisciplinary Connections:

- **L.VL.7.3** Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, including technical meanings, choosing flexibly from a range of strategies.
  Activity: Students will read an excerpt from *Gulliver's Travels* and use information from the story to create a graph between two quantities that vary directly.

- **MS-PS4-2-**Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.
  Activity: Students will compare the amount of UV rays reflected by various surfaces.

Geometry

Construction and Scale Drawings (10 days)

1. Adjacent and Vertical Angles
2. Complementary and Supplementary Angles
3. Triangles
4. Quadrilaterals
5. Scale Drawings

Circles and Area (10 days)

1. Circles and Circumference
2. Perimeters of Composite Figures
3. Areas of Circles
4. Areas of Composite Figures

Surface Area and Volume (12 days)

1. Surface Areas of Prisms
2. Surface Areas of Pyramids
3. Volume of Prisms
4. Volume of Pyramids

Interdisciplinary Connections:

- **SL.II.7.2** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
  Activity: Students will listen to *Sir Cumference and the First Round Table* by Cindy Neuschwander and explain how the main ideas and supporting details in the story clarify their understanding of pi.

Statistics and Probability

Probability and Statistics (15 days)

1. Outcomes and Events
2. Probability
3. Experimental and Theoretical Probability
4. Compound Events
5. Independent and Dependent Events
6. Samples and Populations
7. Comparing Populations

Interdisciplinary Connections:

- **MS-LS3-2-**Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.
  Activity: Students will create punnett squares and find probabilities of various gene combinations.

Career, Computer Science, and Key Skills

The Number System

- **Career Ready Practices**
  Utilize critical thinking to make sense of problems and persevere in solving them.
  Activity: Students will utilize the Standards for Mathematical Practices to add rational numbers in real-life situations.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.8.CAP.20- Identify the items to consider when estimating the cost of funding a business.
  Activity: Students will use positive and negative numbers to examine whether a business has gains or losses over some amount of time.

- **9.4 Life Literacies and Key Skills**
  9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem
  9.4.8.IML.5: Analyze and interpret local or public data sets to summarize and effectively communicate the
  data.
  9.4.8.TL.4: Synthesize and publish information about a local or global issue or event.
  Activity: Students will research and create a digital chart of the high and low temperatures in their town for each month of the year; including the range of temperatures. Students will compare the temperatures to the historical data.

- **Computer Science**
  8.1.8.DA.1- Organize and transform data collected using computational tools to make it usable for a specific purpose.
  Activity: Students will create mini-parachutes to introduce and explore the concepts of absolute value

Expressions and Equations

- **Career Ready Practices**
  Utilize critical thinking to make sense of problems and persevere in solving them.
  Activity: Students will simplify algebraic expressions in real-world applications.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.8.CAP.11: Analyze potential career opportunities by considering different types of resources, including occupation databases, and state and national labor market statistics.
  Activity: Students will examine how equations can be used in multiple careers in small groups.

- **9.4 Life Literacies and Key Skills**
  9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem
  9.4.8.TL.1: Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.
  Activity: Students gather data about the real-world cost of three different styles of floor tiles, write equations modeling the costs, make comparisons, and share their findings digitally.

- **Computer Science**
  8.1.8.DA.1- Organize and transform data collected using computational tools to make it usable for a specific purpose.

Activity: Students will create a spreadsheet and apply the properties of operations to simplify algebraic expressions.

Ratios and Proportional Relationships

- **Career Ready Practices**
  Utilize critical thinking to make sense of problems and persevere in solving them.
  Activity: Students will utilize the Standards for Mathematical Practices to find ratios, rates, and unit rates in real-life situations.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.8.CAP.11: Analyze potential career opportunities by considering different types of resources, including occupation databases, and state and national labor market statistics.
  Activity: Students will examine how proportions are used in scientific and culinary careers.

- **9.4 Life Literacies and Key Skills**
  9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem
  9.4.8.DC.4: Explain how information shared digitally is public and can be searched, copied, and potentially
  seen by public audiences.
  9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations.
  Activity: Students will gather data about different fire hydrants and their rates in gallons per minute. Students will explore why it is critical for firefighters to know the rate at which water comes out of the hydrant and share their findings with graphs or tables.

- **Computer Science**
  8.1.8.DA.1- Organize and transform data collected using computational tools to make it usable for a specific purpose.
  Activity Students will create a spreadsheet to analyze the relationship between the heights and weights of batters and determine the correct bat lengths.

Geometry

- **Career Ready Practices**
  Utilize critical thinking to make sense of problems and persevere in solving them.
  Activity: Students will utilize the Standards for Mathematical Practices to find areas of circles and semi-circles.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.8.CAP.20- Identify the items to consider when estimating the cost of funding a business.
  Activity: Students will write a bid for a tiling contract.

- **9.4 Life Literacies and Key Skills**
  9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem
  9.4.8.TL.3: Select appropriate tools to organize and present information digitally.
  Activity: Students will use geometry software to draw triangles with two given angle measures. Students will then discuss why angle measures are important and how they impact our lives.

- **Computer Science**
  8.2.8.ED.2: Identify the steps in the design process that could be used to solve a problem.
  Activity: Students will explore various outdoor exercise options for dogs and design a dog enclosure for their yards. Students will calculate the area and cost of their design.

Statistics and Probability

- **Career Ready Practices**

Use technology to enhance productivity, increase collaboration and communicate effectively.
Activity: Students will utilize the Standards for Mathematical Practices to create and perform experiments to identify and count outcomes.

- **9.2 Career Awareness, Exploration, and Preparation**
  9.2.8.CAP.3: Explain how career choices, educational choices, skills, economic conditions, and personal behavior affect income.
  Activity: Students will examine graphs and survey data of the plans of students to make predictions and draw conclusions.

- **9.4 Life Literacies and Key Skills**
  9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.
  9.4.8.DC.3: Describe tradeoffs between allowing information to be public (e.g., within online games) versus keeping information private and secure.
  Activity: Students will find the number of possible outcomes of one or more events using password security. Students will discuss the importance of keeping information private.

- **Computer Science**
  8.1.8.DA.5: Test, analyze, and refine computational models.
  Activity: Students will design and use a simulation using the random number generator on a graphing calculator to generate frequencies for compound events.