Leonia School District
Mathematics - Grade 7

Course Description

In Math 7, instructional time should focus on these critical areas: developing understanding of and applying proportional relationships; developing understanding of operations with rational numbers and working with expressions and linear equations; solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and drawing inferences about populations based on samples.

The curriculum is followed by Portfolio 7, Math 7, and Replacement Math 7. The rigor is modified to meet the criteria for each course.

Pacing Guide

Time Frame	Unit Title
5 Weeks	Rational Numbers
5 Weeks	Ratios/Scale Factor
4 Weeks	Proportions
5 Weeks	Equations and Inequalities
4 Weeks	Probability
5 Weeks	Area & Volume
5 Weeks	Geometry
4 Weeks	Statistics

Unit 1 - Rational Numbers

Goals/Objectives of Unit:
- Rational Numbers
  - Explore relationships between positive and negative numbers by modeling them on a number line
  - Use appropriate notation to indicate positive and negative numbers
  - Compare and order positive and negative rational numbers (integers, fractions, decimals, and zero) and locate them on a number line
  - Recognize and use the relationship between a number and its opposite (additive inverse) to solve problems
  - Relate direction and distance to the number line
  - Use models and rational numbers to represent and solve problems
- Operations With Rational Numbers
  - Develop and use different models (number line, chip model) for representing addition, subtraction, multiplication, and division
  - Develop algorithms for adding, subtraction, multiplying, and dividing integers
  - Recognize situations in which one or more operations of rational numbers are needed
  - Interpret and write mathematical sentences to show relationships and solve problems
  - Write and use related fact families for addition/subtraction and multiplication/division to solve simple equations
  - Use parentheses and the Order of Operations in computations
  - Understand and use the Commutative Property for addition and multiplication
  - Apply the Distributive Property to simplify expressions and solve problems

Core Instructional Resources/Materials:
Connected Math 3
- Connected Math 3 Textbook
- Connected Math 3 Workbook
- Connected Math 3 Video Bank for instructional videos aligned to academic units and standards

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NJ-Student Learning Standards:

7.NS.A.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.

7.NS.A.1a. Describe situations in which opposite quantities combine to make 0.

7.NS.A.1b. 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.

7.NS.A.1c. 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.

7.NS.A.1d. Apply properties of operations as strategies to add and subtract rational numbers.

7.NS.A.2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

7.NS.A.2a. 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.

7.NS.A.2b. 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 p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real-world contexts.

7.NS.A.2c. Apply properties of operations as strategies to multiply and divide rational numbers.

7.NS.A.2d. 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.

7.NS.A.3. Solve real-world and mathematical problems involving the four operations with rational numbers.

7.EE.B.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.

7.EE.B.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.

7.EE.B.4b. 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.

Unit 2 - Ratios/Scale Factor

Goals/Objectives of Unit:
- Similar Figures
  - Identify similar figures by comparing corresponding sides and angles
  - Use scale factors and ratios to describe relationships among the side lengths, perimeters, and areas of similar figures
  - Generalize properties of similar figures
  - Recognize the role multiplication plays in similarity relationships
  - Recognize the relationship between scale factor and ratio in similar figures
  - Use informal methods, scale factors, and geometric tools to construct similar figures (scale drawings)
  - Compare similar figures with non similar figures
  - Distinguish algebraic rules that produce similar figures from those that produce non similar figures
  - Use algebraic rules to produce similar figures
  - Recognize when a rule shrinks or enlarges a figure

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- ○ Explore the effect on the image of a figure if a number is added to the x- or y-coordinates of the figure's vertices
- Reasoning With Similar Figures
  - ○ Use the properties of similarity to find distances and heights that cannot be measured directly
  - ○ Predict the ways that stretching or shrinking a figure will affect side lengths, angle measures, perimeters, and areas
  - ○ Use scale factors or ratios to find missing side lengths in a pair of similar figures
  - ○ Use similarity to solve real-world problems

NJ-Student Learning Standards:

7.RP.A.2. Recognize and represent proportional relationships between quantities.

7.RP.A.2a. 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.

7.RP.A.2b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

7.RP.A.3. Use proportional relationships to solve multistep ratio and percent problems.

7.EE.B.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.

7.EE.B.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.

7.G.A.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.

7.G.A.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.

7.G.B.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.

Unit 3 - Proportions

Goals/Objectives of Unit:
- Find the sum of two fractions between 0 and 1 or between 1 and 2.
- Find whether a sum is closer to 1 or closer to 2.
- Name situations where an overestimate or underestimate is needed.
- Create strategies for adding and subtracting fractions.
- Create number sentences for adding and subtracting fractions.
- Create drawings as models to help represent finding parts of a part using fractions.

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- Determine which strategies are best used for finding equivalent fractions.
- Write a division number sentence for "How many 1/4's are in 1/2?" and similar problems.
- Draw models to show division of fractions.
- Interpret diagrams to find the quotient of two fractions.
- Use algorithms for dividing fractions.
- Represent relationships in adding and subtracting fractions with fact families
- Represent relationships in multiplication and division of fractions with fact families
- Determine when a particular operation is called for when solving problems.
- Determine how to represent the problem with a number sentence.
- Decide which operation(s) to use to solve a real world problem involving decimals and percents.
- Express a unit rate as a decimal.
- Add, subtract, multiply, and divide decimals.
- Model situations involving fractions, decimals, and percents.
- Move flexibly between fraction, decimal, and percent representations.
- Look for patterns and describe how to continue the pattern.
- Use context to help reason about a situation.
- Use decimals and percent pars to solve tax, tip and discount problems.

NJ-Student Learning Standards:

7.RP.A.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.

7.RP.A.2. Recognize and represent proportional relationships between quantities.

7.RP.A.2a. 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.

7.RP.A.2b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

7.RP.A.2c. Represent proportional relationships by equations.

7.RP.A.2d. 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.RP.A.3. Use proportional relationships to solve multistep ratio and percent problems.

7.NS.A.3. Solve real-world and mathematical problems involving the four operations with rational numbers.

7.EE.B.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.

7.EE.B.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.

7.EE.B.4a. 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 fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

Unit 4 - Equations and Inequalities

Goals/Objectives of Unit:

Linear Relationships

- Identify and describe the patterns of change between the independent and dependent variables for linear relationships represented by tables, graphs, equations, or contextual settings
- Construct tables, graphs, and symbolic equations that represent linear relationships
- Identify the rate of change between two variables and the x- and y-intercepts from graphs, tables, and equations that represent linear relationships
- Translate information about linear relationships given in a contextual setting, a table, a graph, or an equation to one of the other forms
- Write equations that represent linear relationships given specific pieces of information, and describe what information the variables and numbers represent
- Make a connection between slope as a ratio of vertical distance to horizontal distance between two points on a line and the rate of change between two variables that have a linear relationship
- Recognize that $y = mx$ represents a proportional relationship
- Solve problems and make decisions about linear relationships using information given in tables, graphs, and equations

Equivalence

- Recognize that the equation $y = mx + b$ represents a linear relationship and means that $mx + b$ is an expression equivalent to y
- Recognize that linear equations in one unknown, $k = mx + b$ or $y = m(t) + b$, where k, t, m, and b are constant numbers, are special cases of the equation $y = mx + b$
- Recognize that finding the missing value of one of the variables in a linear relationship, $y = mx + b$, is the same as finding a missing coordinate of a point (x,y) that lies on the graph of the relationship
- Solve linear equations with one variable using symbolic methods, tables, and graphs
- Recognize that a linear inequality in one unknown is associated with a linear equation
- Solve linear inequalities using graphs or symbolic reasoning
- Show that two expressions are equivalent
- Write and interpret equivalent expressions

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NJ-Student Learning Standards:

7.RP.A.2. Recognize and represent proportional relationships between quantities.

7.RP.A.2a. 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.

7.RP.A.2b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

7.RP.A.2c. Represent proportional relationships by equations.

7.RP.A.2d. 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.EE.A.1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

7.EE.A.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.

7.EE.B.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.

7.EE.B.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.

7.EE.B.4a. 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 fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

7.EE.B.4b. 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.

7.RP.A.2a. 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.

7.RP.A.2b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

7.RP.A.2c. Represent proportional relationships by equations.

7.RP.A.2d. 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.RP.A.3. Use proportional relationships to solve multistep ratio and percent problems.

7.NS.A.3. Solve real-world and mathematical problems involving the four operations with rational numbers.

7.EE.B.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.

7.EE.B.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.

7.EE.B.4a. 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 fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

Unit 5 - Probability

Goals/Objectives of Unit:	Core Instructional Resources/Materials:
Experimental and Theoretical Probabilities ● Recognize that probabilities are useful for predicting what will happen over the long run ● For an event described in everyday language, identify the outcomes in a sample space that compose the event ● Interpret experimental and theoretical probabilities and the relationship between them and recognize that experimental probabilities are better estimates of theoretical probabilities when they are based on larger numbers ● Distinguish between outcomes that are equally likely or not equally likely by collecting data and analyzing experimental probabilities ● Realize that the probability of simple events is a ratio of favorable outcomes to all outcomes in the sample space ● Recognize that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring ● 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 ● Determine the fairness of a game Reasoning with Probability ● Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events ● Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process ● Represent sample spaces for simple and compound events and find probabilities using organized lists, tables, tree diagrams, area models, and simulation ● Realize that, just as with simple events, the probability of a compound event is a ratio of favorable outcomes to all outcomes in the sample space ● Design and use a simulation to generate frequencies for simple and compound events ● Analyze situations that involve two or more stages (or actions) called compound events ● Use area models to analyze the theoretical probabilities for two-stage outcomes ● Analyze situations that involve binomial outcomes	Connected Math 3 ● Connected Math 3 Textbook ● Connected Math 3 Workbook ● Connected Math 3 Video Bank for instructional videos aligned to academic units and standards Achieve the Core Coherence Map Buzzmath

● Use probability to calculate the long-term average of a game of chance ● Determine the expected value of a probability situations ● Use probability and expected value to make a decision	

NJ-Student Learning Standards:

7.RP.A.2. Recognize and represent proportional relationships between quantities.

7.RP.A.2a. 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.

7.RP.A.3. Use proportional relationships to solve multistep ratio and percent problems.

7.SP.C.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 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

7.SP.C.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.

7.SP.C.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.

7.SP.C.7a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.

7.SP.C.7b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.

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

7.SP.C.8a. 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.

7.SP.C.8b. 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.

7.SP.C.8c. Design and use a simulation to generate frequencies for compound events.

Unit 6 - Area & Volume

Goals/Objectives of Unit:	**Core Instructional Resources/Materials:**
Surface Areas and Volumes of Polygonal Prisms and Cylinders ● Describe prisms by using their vertices, faces, and edges ● Visualize three-dimensional shapes and the effects of slicing those shapes by planes ● Deepen understanding of volumes and surface areas of rectangular prisms ● Estimate and calculate surface areas and volumes of polygonal prisms by relating them to rectangular prisms ● Explore the relationships between the surface areas and volumes of prisms	Connected Math 3 ● Connected Math 3 Textbook ● Connected Math 3 Workbook ● Connected Math 3 Video Bank for instructional videos aligned to academic units and standards Achieve the Core Coherence Map Buzzmath

- Relate surface areas and volumes for common figures, especially optimization of surface area for fixed volume
- Predict the effects of scaling dimensions on linear, surface area, and volume measures of prisms, cylinders, and other figures
- Investigate the relationship between volumes of prisms and volumes of cylinders as well as the relationship between surface areas of prisms and surface areas of cylinders
- Use volumes and surface areas of prisms to develop formulas for volumes and surface areas of cylinders
- Discover that volumes of prisms and cylinders can be calculated as the product of the area of the base and height
- Solve problems involving surface areas and volumes of solid figures

Areas and Circumferences of Circles
- Relate area of a circle to covering a figure and circumference to surrounding a figure
- Estimate and calculate areas and circumferences of circles
- Explore the relationship between circle radius (or diameter) and circumference
- Explore the relationship between circle radius (or diameter) and area
- Investigate the connection of π to area calculation by estimating the number of radius squares needed to cover a circle
- Investigate the relationship between area and circumference of a circle
- Solve problems involving areas and circumferences of circles

NJ-Student Learning Standards:

7.RP.A.2. Recognize and represent proportional relationships between quantities.

7.RP.A.2a. 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.

7.RP.A.3. Use proportional relationships to solve multistep ratio and percent problems.

7.SP.C.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 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

7.SP.C.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.

7.SP.C.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.

7.SP.C.7a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.

7.SP.C.7b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.

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

7.SP.C.8a. 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.

7.SP.C.8b. 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.

7.SP.C.8c. Design and use a simulation to generate frequencies for compound events.

Unit 7 - Geometry

Goals/Objectives of Unit:

Properties of Polygons
- Explore the ways that polygons are sorted into families according to the number and length of their sides and the size of their angles
- Explore the patterns among interior and exterior angles of a polygon
- Explore the patterns among side lengths in a polygon
- Investigate the symmetries of a shape--rotation or reflection
- Determine which polygons fit together to cover a flat surface and why
- Reason about and solve problems involving various polygons

Relationships Among Angles
- Investigate techniques for estimating and measuring angles
- Use tools to sketch angles
- Reason about the properties of angles formed by parallel lines and transversals
- Use information about supplementary, complementary, vertical, and adjacent angles in a shape to solve for an unknown angle in a multi-step problem

Constructing Polygons
- Draw or sketch polygons with given conditions by using various tools and techniques such as freehand, use of a ruler and protractor, and use of technology
- Determine what conditions will produce a unique polygon, more that one polygon, or no polygon, particularly triangles and quadrilaterals
- Recognize the special properties of polygons, such as angle sum, side-length, relationships, and symmetry, that make them useful in building, design, and nature
- Solve problems that involve properties of shape

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NJ-Student Learning Standards:

7.EE.A.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.

7.EE.B.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. 7.G.A.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. 7.G.B.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.

Unit 8 - Statistics

Goals/Objectives of Unit:
- identify categorical and numerical data.
- identify clusters and gaps in a distribution.
- describe the shape of a distribution.
- find the location and value of the median.
- find the minimum, maximum and range of a set of data.
- find the mean using an ordered value bar graph, the algorithm, and think about the mean as a balance point.
- find the mean absolute deviation (MAD) of a set of data using a graph and numerically.
- find the lower and upper quartiles and IQR.
- explain how outliers influence the mean of a distribution.
- make and analyze frequency tables, line plots, ordered value bar graphs, box and whisker plots, and histograms.
- find the five-number summary of a set of data.

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NJ-Student Learning Standards:
7.RP.A.2. Recognize and represent proportional relationships between quantities.

7.NS.A.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.

7.NS.A.1b. 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.

7.SP.A.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.

7.SP.A.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.

7.SP.A.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.

7.SP.A.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.

7.SP.C.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 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

7.SP.C.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.

7.SP.C.7a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.

General Assessments (may include but not limited to):

Possible Summative Assessment:	Optional Daily Assessment:
- Unit/Chapter tests - District Benchmark STAR assessment - Illustrative Math - Achieve the Core Coherence Map - assessment tools	- Exit ticket/survey (game/web-based: Kahoot!, Pear Deck, EdPuzzle, Plickers, Quizizz, FlipGrid, Google Suite) - Reflection/self-assessment tool - Graphic organizers - Anecdotal notes/teacher observations