Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

6th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
6.NS.1	Compute and represent quotients of positive fractions using a variety of procedures (e.g., visual models, equations, and real-world situations).	6.NS.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 (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 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 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?*
6.NS.2	Fluently divide multi-digit whole numbers using a standard algorithmic approach.	6.NS.2: Fluently divide multi-digit numbers using the standard algorithm.
6.NS.3	Fluently add, subtract, multiply and divide multi-digit decimal numbers using a standard algorithmic approach.	6.NS.3: Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
6.NS.4	Find common factors and multiples using two whole numbers. a. Compute the greatest common factor (GCF) of two numbers both less than or equal to 100. b. Compute the least common multiple (LCM) of two numbers both less than or equal to 12. c. Express sums of two whole numbers, each less than or equal to 100, using the distributive property to factor out a common factor of the original addends.	6.NS.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).*
6.NS.5	Understand that the positive and negative representations of a number are opposites in direction and value. Use integers to represent quantities in real-world situations and explain the meaning of zero in each situation.	6.NS.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.

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

6th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)	Common Core State Standards for Mathematics (2010)
6.NS.6 Extend the understanding of the number line to include all rational numbers and apply this concept to the coordinate plane. a. Understand the concept of opposite numbers, including zero, and their relative locations on the number line. b. Understand that the signs of the coordinates in ordered pairs indicate their location on an axis or in a quadrant on the coordinate plane. c. Recognize when ordered pairs are reflections of each other on the coordinate plane across one axis, both axes, or the origin. d. Plot rational numbers on number lines and ordered pairs on coordinate planes.	6.NS.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.

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

6th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
6.NS.7	Understand and apply the concepts of comparing, ordering, and finding absolute value to rational numbers. a. Interpret statements using equal to (=) and not equal to (≠). b. Interpret statements using less than (<), greater than (>), and equal to (=) as relative locations on the number line. c. Use concepts of equality and inequality to write and to explain real-world and mathematical situations. d. Understand that absolute value represents a number's distance from zero on the number line and use the absolute value of a rational number to represent real-world situations. e. Recognize the difference between comparing absolute values and ordering rational numbers. For negative rational numbers, understand that as the absolute value increases, the value of the negative number decreases.	6.NS.7: Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.* b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3° C > –7° C to express the fact that –3° C is warmer than –7° C.* c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.* d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*
6.NS.8	Extend knowledge of the coordinate plane to solve real-world and mathematical problems involving rational numbers. a. Plot points in all four quadrants to represent the problem. b. Find the distance between two points when ordered pairs have the same *x*-coordinates or same *y*-coordinates. c. Relate finding the distance between two points in a coordinate plane to absolute value using a number line.	6.NS.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.
6.NS.9	Investigate and translate among multiple representations of rational numbers (fractions, decimal numbers, percentages). Fractions should be limited to those with denominators of 2, 3, 4, 5, 8, 10, and 100.	**This standard is new to 6th grade.**

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

6th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
6.RP.1	Interpret the concept of a ratio as the relationship between two quantities, including part to part and part to whole.	6.RP.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."*
6.RP.2	Investigate relationships between ratios and rates. a. Translate between multiple representations of ratios (i.e., a/b, $a: b$, a to b, visual models). b. Recognize that a rate is a type of ratio involving two different units. c. Convert from rates to unit rates.	6.RP.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 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."* (Note: Expectations for unit rates in this grade are limited to non-complex fractions.)
6.RP.3	Apply the concepts of ratios and rates to solve real-world and mathematical problems. a. Create a table consisting of equivalent ratios and plot the results on the coordinate plane. b. Use multiple representations, including tape diagrams, tables, double number lines, and equations, to find missing values of equivalent ratios. c. Use two tables to compare related ratios. d. Apply concepts of unit rate to solve problems, including unit pricing and constant speed. e. Understand that a percentage is a rate per 100 and use this to solve problems involving wholes, parts, and percentages. f. Solve one-step problems involving ratios and unit rates (e.g., dimensional analysis).	6.RP.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.

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

6th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
6.EEI.1	Write and evaluate numerical expressions involving whole-number exponents and positive rational number bases using the Order of Operations.	6.EE.1: Write and evaluate numerical expressions involving whole-number exponents.
6.EEI.2	Extend the concepts of numerical expressions to algebraic expressions involving positive rational numbers. a. Translate between algebraic expressions and verbal phrases that include variables. b. Investigate and identify parts of algebraic expressions using mathematical terminology, including term, coefficient, constant, and factor. c. Evaluate real-world and algebraic expressions for specific values using the Order of Operations. Grouping symbols should be limited to parentheses, braces, and brackets. Exponents should be limited to whole-numbers.	6.EE.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 $V = s^3$ and $SA = 6s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*
6.EEI.3	Apply mathematical properties (e.g., commutative, associative, distributive) to generate equivalent expressions.	6.EE.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.*

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

6th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
6.EEI.4	Apply mathematical properties (e.g., commutative, associative, distributive) to justify that two expressions are equivalent.	6.EE.4: Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*
6.EEI.5	Understand that if any solutions exist, the solution set for an equation or inequality consists of values that make the equation or inequality true.	6.EE.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.EEI.6	Write expressions using variables to represent quantities in real-world and mathematical situations. Understand the meaning of the variable in the context of the situation.	6.EE.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.
6.EEI.7	Write and solve one-step linear equations in one variable involving nonnegative rational numbers for real-world and mathematical situations.	6.EE.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.
6.EEI.8	Extend knowledge of inequalities used to compare numerical expressions to include algebraic expressions in real-world and mathematical situations. a. Write an inequality of the form $x > c$ or $x < c$ and graph the solution set on a number line. b. Recognize that inequalities have infinitely many solutions.	6.EE.8: Write an inequality of the form *x* > *c* or *x* < *c* to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form *x* > *c* or *x* < *c* have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
6.EEI.9	Investigate multiple representations of relationships in real-world and mathematical situations. a. Write an equation that models a relationship between independent and dependent variables. b. Analyze the relationship between independent and dependent variables using graphs and tables. c. Translate among graphs, tables, and equations.	6.EE.9: Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

6th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
6.GM.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.	6.G.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.
6.GM.2	Use visual models (e.g., model by packing) to discover that the formulas for the volume of a right rectangular prism ($V = lwh, V = Bh$) are the same for whole or fractional edge lengths. Apply these formulas to solve real-world and mathematical problems.	6.G.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 = l w h* and *V = b h* to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
6.GM.3	Apply the concepts of polygons and the coordinate plane to real-world and mathematical situations. a. Given coordinates of the vertices, draw a polygon in the coordinate plane. b. Find the length of an edge if the vertices have the same *x*-coordinates or same *y*-coordinates.	6.G.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.
6.GM.4	Unfold three-dimensional figures into two-dimensional rectangles and triangles (nets) to find the surface area and to solve real-world and mathematical problems.	6.G.4: Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
6.DS.1	Differentiate between statistical and non-statistical questions.	6.SP.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.*

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

6th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
6.DS.2	Use center (mean, median, mode), spread (range, interquartile range, mean absolute value), and shape (symmetrical, skewed left, skewed right) to describe the distribution of a set of data collected to answer a statistical question.	6.SP.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.
6.DS.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	6.SP.3: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
6.DS.4	Select and create an appropriate display for numerical data, including dot plots, histograms, and box plots.	6.SP.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
6.DS.5	Describe numerical data sets in relation to their real-world context. a. State the sample size. b. Describe the qualitative aspects of the data (e.g., how it was measured, units of measurement). c. Give measures of center (median, mean). d. Find measures of variability (interquartile range, mean absolute deviation) using a number line. e. Describe the overall pattern (shape) of the distribution. f. Justify the choices for measure of center and measure of variability based on the shape of the distribution. g. Describe the impact that inserting or deleting a data point has on the measures of center (median, mean) for a data set.	6.SP.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.

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

7th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
7.NS.1	Extend prior knowledge of operations with positive rational numbers to add and to subtract all rational numbers and represent the sum or difference on a number line. a. Understand that the additive inverse of a number is its opposite and their sum is equal to zero. b. Understand that the sum of two rational numbers ($p + q$) represents a distance from *p* on the number line equal to $\|q\|$ where the direction is indicated by the sign of q. c. Translate between the subtraction of rational numbers and addition using the additive inverse, $p - q = p + (-q)$. d. Demonstrate that the distance between two rational numbers on the number line is the absolute value of their difference. e. Apply mathematical properties (e.g., commutative, associative, distributive, or the properties of identity and inverse elements) to add and subtract rational numbers.	7.NS.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, a hydrogen atom has 0 charge because its two constituents are oppositely charged.* 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.

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

7th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
7.NS.2	Extend prior knowledge of operations with positive rational numbers to multiply and to divide all rational numbers. a. Understand that the multiplicative inverse of a number is its reciprocal and their product is equal to one. b. Understand sign rules for multiplying rational numbers. c. Understand sign rules for dividing rational numbers and that a quotient of integers (with a non-zero divisor) is a rational number. d. Apply mathematical properties (e.g., commutative, associative, distributive, or the properties of identity and inverse elements) to multiply and divide rational numbers. e. Understand that some rational numbers can be written as integers and all rational numbers can be written as fractions or decimal numbers that terminate or repeat.	7.NS.2: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p 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.
7.NS.3	Apply the concepts of all four operations with rational numbers to solve real-world and mathematical problems.	7.NS.3: Solve real-world and mathematical problems involving the four operations with rational numbers. (NOTE: Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)
7.NS.4	Understand and apply the concepts of comparing and ordering to rational numbers. a. Interpret statements using less than (<), greater than (>), less than or equal to (≤), greater than or equal to (≥), and equal to (=) as relative locations on the number line. b. Use concepts of equality and inequality to write and explain real-world and mathematical situations.	**This standard is new to 7th grade.** *Extension of 6.NS.7 and 6.EEI.8

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

7th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
7.NS.5	Extend prior knowledge to translate among multiple representations of rational numbers (fractions, decimal numbers, percentages). Exclude the conversion of repeating decimal numbers to fractions.	**This standard is new to 7th grade.**
7.RP.1	Compute unit rates, including those involving complex fractions, with like or different units.	7.RP.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 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction (1/2)/(1/4) miles per hour, equivalently 2 miles per hour.*
7.RP.2	Identify and model proportional relationships given multiple representations, including tables, graphs, equations, diagrams, verbal descriptions, and real-world situations. a. Determine when two quantities are in a proportional relationship. b. Recognize or compute the constant of proportionality. c. Understand that the constant of proportionality is the unit rate. d. Use equations to model proportional relationships. e. Investigate the graph of a proportional relationship and explain the meaning of specific points (e.g., origin, unit rate) in the context of the situation.	7.RP.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.
7.RP.3	Solve real-world and mathematical problems involving ratios and percentages using proportional reasoning (e.g., multi-step dimensional analysis, percent increase/decrease, tax).	7.RP.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.*

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7th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
7.EEI.1	Apply mathematical properties (e.g., commutative, associative, distributive) to simplify and to factor linear algebraic expressions with rational coefficients.	7.EE.1: Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
7.EEI.2	Recognize that algebraic expressions may have a variety of equivalent forms and determine an appropriate form for a given real-world situation.	7.EE.2: Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*
7.EEI.3	Extend previous understanding of Order of Operations to solve multi-step real-world and mathematical problems involving rational numbers. Include fraction bars as a grouping symbol.	7.EE.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 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*

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7th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
7.EEI.4	Apply the concepts of linear equations and inequalities in one variable to real-world and mathematical situations. a. Write and fluently solve linear equations of the form $ax + b = c$ and $a(x + b) = c$ where a, b, and c are rational numbers. b. Write and solve multi-step linear equations that include the use of the distributive property and combining like terms. Exclude equations that contain variables on both sides. c. Write and solve two-step linear inequalities. Graph the solution set on a number line and interpret its meaning. d. Identify and justify the steps for solving multi-step linear equations and two-step linear inequalities.	7.EE.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 fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?* b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*
7.EEI.5	Understand and apply the laws of exponents (i.e., product rule, quotient rule, power to a power, product to a power, quotient to a power, zero power property) to simplify numerical expressions that include whole-number exponents.	**This standard is new to 7th grade.**
7.GM.1	Determine the scale factor and translate between scale models and actual measurements (e.g., lengths, area) of real-world objects and geometric figures using proportional reasoning.	7.G.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.

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

7th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
7.GM.2	Construct triangles and special quadrilaterals using a variety of tools (e.g., freehand, ruler and protractor, technology). a. Construct triangles given all measurements of either angles or sides. b. Decide if the measurements determine a unique triangle, more than one triangle, or no triangle. c. Construct special quadrilaterals (i.e., kite, trapezoid, isosceles trapezoid, rhombus, parallelogram, rectangle) given specific parameters about angles or sides.	7.G.2: Draw (freehand, with ruler and protractor, and with technology) 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.GM.3	Describe two-dimensional cross-sections of three-dimensional figures, specifically right rectangular prisms and right rectangular pyramids.	7.G.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.
7.GM.4	Investigate the concept of circles. a. Demonstrate an understanding of the proportional relationships between diameter, radius, and circumference of a circle. b. Understand that the constant of proportionality between the circumference and diameter is equivalent to π. c. Explore the relationship between circumference and area using a visual model. d. Use the formulas for circumference and area of circles appropriately to solve real-world and mathematical problems.	7.G.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.
7.GM.5	Write equations to solve problems involving the relationships between angles formed by two intersecting lines, including supplementary, complementary, vertical, and adjacent.	7.G.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.

Alignment of the South Carolina College- and Career-Ready Standards for Mathematics and the Common Core State Standards for Mathematics

7th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
7.GM.6	Apply the concepts of two- and three-dimensional figures to real-world and mathematical situations. a. Understand that the concept of area is applied to two-dimensional figures such as triangles, quadrilaterals, and polygons. b. Understand that the concepts of volume and surface area are applied to three-dimensional figures such as cubes, right rectangular prisms, and right triangular prisms. c. Decompose cubes, right rectangular prisms, and right triangular prisms into rectangles and triangles to derive the formulas for volume and surface area. d. Use the formulas for area, volume, and surface area appropriately.	7.G.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.
7.DSP.1	Investigate concepts of random sampling. a. Understand that a sample is a subset of a population and both possess the same characteristics. b. Differentiate between random and non-random sampling. c. Understand that generalizations from a sample are valid only if the sample is representative of the population. d. Understand that random sampling is used to gather a representative sample and supports valid inferences about the population.	7.SP.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.DSP.2	Draw inferences about a population by collecting multiple random samples of the same size to investigate variability in estimates of the characteristic of interest.	7.SP.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.*

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7th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
7.DSP.3	Visually compare the centers, spreads, and overlap of two displays of data (i.e., dot plots, histograms, box plots) that are graphed on the same scale and draw inferences about this data.	7.SP.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.*
7.DSP.4	Compare the numerical measures of center (mean, median, mode) and variability (range, interquartile range, mean absolute deviation) from two random samples to draw inferences about the populations.	7.SP.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*
7.DSP.5	Investigate the concept of probability of chance events. a. Determine probabilities of simple events. b. Understand that probability measures likelihood of a chance event occurring. c. Understand that the probability of a chance event is a number between 0 and 1. d. Understand that a probability closer to 1 indicates a likely chance event. e. Understand that a probability close to $\frac{1}{2}$ indicates that a chance event is neither likely nor unlikely. f. Understand that a probability closer to 0 indicates an unlikely chance event.	7.SP.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.

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7th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
7.DSP.6	Investigate the relationship between theoretical and experimental probabilities for simple events. a. Determine approximate outcomes using theoretical probability. b. Perform experiments that model theoretical probability. c. Compare theoretical and experimental probabilities.	7.SP.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.DSP.7	Apply the concepts of theoretical and experimental probabilities for simple events. a. Differentiate between uniform and non-uniform probability models (distributions). b. Develop both uniform and non-uniform probability models. c. Perform experiments to test the validity of probability models.	7.SP.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?*

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South Carolina College- and Career-Ready Standards for Mathematics (2015)	Common Core State Standards for Mathematics (2010)
7.DSP.8 Extend the concepts of simple events to investigate compound events. a. Understand that the probability of a compound event is between 0 and 1. b. Identify the outcomes in a sample space using organized lists, tables, and tree diagrams. c. Determine probabilities of compound events using organized lists, tables, and tree diagrams. d. Design and use simulations to collect data and determine probabilities. e. Compare theoretical and experimental probabilities for compound events.	7.SP.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?*

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8th Grade

South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
8.NS.1	Explore the real number system and its appropriate usage in real-world situations. a. Recognize the differences between rational and irrational numbers. b. Understand that all real numbers have a decimal expansion. c. Model the hierarchy of the real number system, including natural, whole, integer, rational, and irrational numbers.	8.NS.1: Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
8.NS.2	Estimate and compare the value of irrational numbers by plotting them on a number line.	8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of* $\sqrt{2}$ *, show that* $\sqrt{2}$ *is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*
8.NS.3	Extend prior knowledge to translate among multiple representations of rational numbers (fractions, decimal numbers, percentages). Include the conversion of repeating decimal numbers to fractions.	**This standard is new to 8th grade.** *Extension of 7.NS.5

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South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
8.F.1	Explore the concept of functions. a. Understand that a function assigns to each input exactly one output. b. Relate inputs (x-values or domain) and outputs (y-values or range) to independent and dependent variables. c. Translate among the multiple representations of a function, including mappings, tables, graphs, equations, and verbal descriptions. d. Determine if a relation is a function using multiple representations, including mappings, tables, graphs, equations, and verbal descriptions. e. Graph a function from a table of values. Understand that the graph and table both represent a set of ordered pairs of that function.	8.F.1: Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Note: Function notation is not required in Grade 8.)
8.F.2	Compare multiple representations of two functions, including mappings, tables, graphs, equations, and verbal descriptions, in order to draw conclusions.	8.F.2: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*
8.F.3	Investigate the differences between linear and nonlinear functions using multiple representations (i.e. tables, graphs, equations, and verbal descriptions). a. Define an equation in slope-intercept form ($y = mx + b$) as being a linear function. b. Recognize that the graph of a linear function has a constant rate of change. c. Provide examples of nonlinear functions.	8.F.3: Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.*

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South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
8.F.4	Apply the concepts of linear functions to real-world and mathematical situations. a. Understand that the slope is the constant rate of change and the y-intercept is the point where x = 0. b. Determine the slope and the y-intercept of a linear function given multiple representations, including two points, tables, graphs, equations, and verbal descriptions. c. Construct a function in slope-intercept form that models a linear relationship between two quantities. d. Interpret the meaning of the slope and the y-intercept of a linear function in the context of the situation. e. Explore the relationship between linear functions and arithmetic sequences.	8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (*x*, *y*) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
8.F.5	Apply the concepts of linear and nonlinear functions to graphs in real-world and mathematical situations. a. Analyze and describe attributes of graphs of functions (e.g., constant, increasing/decreasing, linear/nonlinear, maximum/minimum, discrete/continuous). b. Sketch the graph of a function from a verbal description. c. Write a verbal description from the graph of a function with and without scales.	8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
8.EEI.1	Understand and apply the laws of exponents (i.e. product rule, quotient rule, power to a power, product to a power, quotient to a power, zero power property, negative exponents) to simplify numerical expressions that include integer exponents.	8.EE.1: Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example,* $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.

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South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
8.EEI.2	Investigate concepts of square and cube roots. a. Find the exact and approximate solutions to equations of the form $x^2 = p$ and $x^3 = p$ where p is a positive rational number. b. Evaluate square roots of perfect squares. c. Evaluate cube roots of perfect cubes. d. Recognize that square roots of non-perfect squares are irrational.	8.EE.2: Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.
8.EEI.3	Explore the relationship between quantities in decimal and scientific notation. a. Express very large and very small quantities in scientific notation in the form $a \times 10^b = p$ where $1 \leq a < 10$ and b is an integer. b. Translate between decimal notation and scientific notation. c. Estimate and compare the relative size of two quantities in scientific notation.	8.EE.3: Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9, and determine that the world population is more than 20 times larger.*
8.EEI.4	Apply the concepts of decimal and scientific notation to solve real-world and mathematical problems. a. Multiply and divide numbers expressed in both decimal and scientific notation. b. Select appropriate units of measure when representing answers in scientific notation. c. Translate how different technological devices display numbers in scientific notation.	8.EE.4: Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

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South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
8.EEI.5	Apply concepts of proportional relationships to real-world and mathematical situations. a. Graph proportional relationships. b. Interpret unit rate as the slope of the graph. c. Compare two different proportional relationships given multiple representations, including tables, graphs, equations, diagrams, and verbal descriptions.	8.EE.5: Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*
8.EEI.6	Apply concepts of slope and y-intercept to graphs, equations, and proportional relationships. a. Explain why the slope, m, is the same between any two distinct points on a non-vertical line using similar triangles. b. Derive the slope-intercept form ($y = mx + b$) for a non-vertical line. c. Relate equations for proportional relationships ($y = kx$) with the slope-intercept form ($y = mx + b$) where $b = 0$.	8.EE.6: Use similar triangles to explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation *y* = *mx* for a line through the origin and the equation *y* = *mx* + *b* for a line intercepting the vertical axis at *b*.
8.EEI.7	Extend concepts of linear equations and inequalities in one variable to more complex multi-step equations and inequalities in real-world and mathematical situations. a. Solve linear equations and inequalities with rational number coefficients that include the use of the distributive property, combining like terms, and variables on both sides. b. Recognize the three types of solutions to linear equations: one solution ($x = a$), infinitely many solutions ($a = a$), or no solutions ($a = b$). c. Generate linear equations with the three types of solutions. d. Justify why linear equations have a specific type of solution.	8.EE.7: Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form *x* = *a*, *a* = *a*, or *a* = *b* results (where *a* and *b* are different numbers). b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

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South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
8.EEI.8	Investigate and solve real-world and mathematical problems involving systems of linear equations in two variables with integer coefficients and solutions. a. Graph systems of linear equations and estimate their point of intersection. b. Understand and verify that a solution to a system of linear equations is represented on a graph as the point of intersection of the two lines. c. Solve systems of linear equations algebraically, including methods of substitution and elimination, or through inspection. d. Understand that systems of linear equations can have one solution, no solution, or infinitely many solutions.	8.EE.8: Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.* c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*
8.GM.1	Investigate the properties of rigid transformations (rotations, reflections, translations) using a variety of tools (e.g., grid paper, reflective devices, graphing paper, technology). a. Verify that lines are mapped to lines, including parallel lines. b. Verify that corresponding angles are congruent. c. Verify that corresponding line segments are congruent.	8.G.1: Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.

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South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
8.GM.2	Apply the properties of rigid transformations (rotations, reflections, translations). a. Rotate geometric figures 90, 180, and 270 degrees, both clockwise and counterclockwise, about the origin. b. Reflect geometric figures with respect to the x-axis and/or y-axis. c. Translate geometric figures vertically and/or horizontally. d. Recognize that two-dimensional figures are only congruent if a series of rigid transformations can be performed to map the pre-image to the image. e. Given two congruent figures, describe the series of rigid transformations that justifies this congruence.	8.G.2: Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
8.GM.3	Investigate the properties of transformations (rotations, reflections, translations, dilations) using a variety of tools (e.g., grid paper, reflective devices, graphing paper, dynamic software). a. Use coordinate geometry to describe the effect of transformations on two-dimensional figures. b. Relate scale drawings to dilations of geometric figures.	8.G.3: Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
8.GM.4	Apply the properties of transformations (rotations, reflections, translations, dilations). a. Dilate geometric figures using scale factors that are positive rational numbers. b. Recognize that two-dimensional figures are only similar if a series of transformations can be performed to map the pre-image to the image. c. Given two similar figures, describe the series of transformations that justifies this similarity. d. Use proportional reasoning to find the missing side lengths of two similar figures.	8.G.4: Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

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South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
8.GM.5	Extend and apply previous knowledge of angles to properties of triangles, similar figures, and parallel lines cut by a transversal. a. Discover that the sum of the three angles in a triangle is 180 degrees. b. Discover and use the relationship between interior and exterior angles of a triangle. c. Identify congruent and supplementary pairs of angles when two parallel lines are cut by a transversal. d. Recognize that two similar figures have congruent corresponding angles.	8.G.5: Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*
8.GM.6	Use models to demonstrate a proof of the Pythagorean Theorem and its converse.	8.G.6: Explain a proof of the Pythagorean Theorem and its converse.
8.GM.7	Apply the Pythagorean Theorem to model and solve real-world and mathematical problems in two and three dimensions involving right triangles.	8.G.7: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
8.GM.8	Find the distance between any two points in the coordinate plane using the Pythagorean Theorem.	8.G.8: Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
8.GM.9	Solve real-world and mathematical problems involving volumes of cones, cylinders, and spheres and the surface area of cylinders.	8.G.9: Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.
8.DSP.1	Investigate bivariate data. a. Collect bivariate data. b. Graph the bivariate data on a scatter plot. c. Describe patterns observed on a scatter plot, including clustering, outliers, and association (positive, negative, no correlation, linear, nonlinear).	8.SP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
8.DSP.2	Draw an approximate line of best fit on a scatter plot that appears to have a linear association and informally assess the fit of the line to the data points.	8.SP.2: Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.

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South Carolina College- and Career-Ready Standards for Mathematics (2015)		Common Core State Standards for Mathematics (2010)
8.DSP.3	Apply concepts of an approximate line of best fit in real-world situations. a. Find an approximate equation for the line of best fit using two appropriate data points. b. Interpret the slope and intercept. c. Solve problems using the equation.	8.SP.3: Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*
8.DSP.4	Investigate bivariate categorical data in two-way tables. a. Organize bivariate categorical data in a two-way table. b. Interpret data in two-way tables using relative frequencies. c. Explore patterns of possible association between the two categorical variables.	8.SP.4: Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*
8.DSP.5	Organize data in matrices with rational numbers and apply to real-world and mathematical situations. a. Understand that a matrix is a way to organize data. b. Recognize that a $m \times n$ matrix has m rows and n columns. c. Add and subtract matrices of the same size. d. Multiply a matrix by a scalar.	**This standard is new to 8th grade.**