Domain: Ratios & Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems.	6	7	7 Extended	8	8 Extended
	6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	**7.RP.2** Recognize and represent proportional relationships between quantities	**7.RP.2** Recognize and represent proportional relationships between quantities		
	6.RP.2 Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 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.	**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.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		

Domain: Ratios & Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems.	6	7	7 Extended	8	8 Extended
	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.**	**7.RP.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.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.**		
	6.RP.3a **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.**	**7.RP.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.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.**	**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.**	

Domain: Ratios & Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems.	6	7	7 Extended	8	8 Extended
		7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships	7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships	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.	
	6.RP.3b 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	7.RP.2c 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.	7.RP.2c 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		

Domain: Ratios & Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems.	6	7	7 Extended	8	8 Extended
	6.RP.3c 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.				
Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities	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.	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.		

Understand ratio concepts and use ratio reasoning to solve problems	**6**	**7**	**7 Extended**	**8**	**8 Extended**
	.		**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..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**		

Domain: The Number System Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	6	7	7 Extended	8	8 Extended
	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?	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.	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.		N.Q.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
		7.NS.2c Apply properties of operations as strategies to add and subtract rational numbers.	7.NS.2c Apply properties of operations as strategies to add and subtract rational numbers.		N.Q.2 Define appropriate quantities for the purpose of descriptive modeling.

Domain: The Number System Compute fluently with multi-digit numbers and find common factors and multiples.	6	7	7 Extended	8	8 Extended
	6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.	7.NS.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.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.	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.	N.Q.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
	6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers	7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers		N.RN.3 Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational

Compute fluently with multi-digit numbers and find common factors and multiples.	6	7	7 Extended	8	8 Extended
	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).**				

Apply and extend previous understandings of numbers to the system of rational numbers.	6	7	7 Extended	8	8 Extended
	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*	**7.NS.2** **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.**	**7.NS.2** **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**		

Apply and extend previous understandings of numbers to the system of rational numbers.	6	7	7 Extended	8	8 Extended
	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**		**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.**		
	6.NS.6a **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.**	**7.NS.2a** **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.2a** **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.**	**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., π2). For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5,.**	

Apply and extend previous understandings of numbers to the system of rational numbers	6	7	7 Extended	8	8 Extended
			7.NS.2b 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.		
	6.NS.6b 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		**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., π2). For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5,.		

Apply and extend previous understandings of numbers to the system of rational numbers	**6**	**7**	**7 Extended**	**8**	**8 Extended**
	6.NS.6c 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.				
	6.NS.7 Understand ordering and absolute value of rational numbers				
	6.NS.7a 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.				

Apply and extend previous understandings of numbers to the system of rational numbers.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
	6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write -3 oC > -7 oC to express the fact that -3 oC is warmer than -7 oC.				
	6.NS.7c 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.				

Apply and extend previous understandings of numbers to the system of rational numbers	6	7	7 Extended	8	8 Extended
	6.NS.7d 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 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.				

Domain: Expressions & Equations Apply and extend previous understandings of arithmetic to algebraic expressions.	6	7	7 Extended	8	8 Extended
	6.EE.1 **Write and evaluate numerical expressions involving whole-number exponents**		**8.EE.1** **Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$**	**8.EE.1** **Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$**	**A.SSE.1** **Interpret expressions that represent a quantity in terms of its context.⋆** **Interpret parts of an expression, such as terms, factors, and coef-ficients.** **Interpret complicated expressions by viewing one or more of their parts as a single entity.** *For example, interpret P(1+r)n as the product of P and a factor not depending on P.*
	6.EE.2 **Write, read, and evaluate expressions in which letters stand for numbers.**		**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.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.**	

Domain: Expressions & Equations Apply and extend previous understandings of arithmetic to algebraic expressions	6	7	7 Extended	8	8 Extended
	6.EE.3 **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.**				**N.RN.2** **Rewrite expressions involving radicals and rational exponents using the properties of exponents**
	6.EE.3a **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.**				**N.RN.1** **Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.**

Domain: Expressions & Equations Apply and extend previous understandings of arithmetic to algebraic expressions	6	7	7 Extended	8	8 Extended
	6.EE.3b 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 = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = ½	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.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	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 times 108 and the population of the world as 7 times 109, and determine that the world population is more than 20 times large	A.SSE.2 Use the structure of an expression to identify ways to rewrite it

Apply and extend previous understandings of arithmetic to algebraic expressions.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
			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 times 108 and the population of the world as 7 times 109, and determine that the world population is more than 20 times large**		

Apply and extend previous understandings of arithmetic to algebraic expressions.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
			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**		

Apply and extend previous understandings of arithmetic to algebraic expressions.	6	7	7 Extended	8	8 Extended
	6.EE.3c 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.	7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients	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	

Apply and extend previous understandings of arithmetic to algebraic expressions.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
	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..				
Reason about and solve one-variable equations and inequalities	**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.**				**A.CED.1 Create equations and inequalities in one variable and use them to solve problems.**

Reason about and solve one-variable equations and inequalities	**6**	**7**	**7 Extended**	**8**	**8 Extended**
	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.**				**A.CED.2** **Create equations in two or more variables to represent relationships between quantities;** **graph equations on coordinate axes with labels and scales**

Reason about and solve one-variable equations and inequalities	6	7	7 Extended	8	8 Extended
	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.**	**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.*	**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.*		**A.CED.3** **Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.**

Reason about and solve one-variable equations and inequalities	**6**	**7**	**7 Extended**	**8**	**8 Extended**
	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.**				**A.CED.4** **Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations**

Represent and analyze quantitative relationships between dependent and independent variables	6	7	7 Extended	8	8 Extended
	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*	**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**	**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.REI.1** **Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution**

Represent and analyze quantitative relationships between dependent and independent variables	**6**	**7**	**7 Extended**	**8**	**8 Extended**
		7.EE.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.** *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*	**7.EE.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.** *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*		**A.REI.3** **Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters**

Represent and analyze quantitative relationships between dependent and independent variables	6	7	7 Extended	8	8 Extended
		7.EE.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.** *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.EE.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.** *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*		
			8.EE.7 **Solve linear equations in one variable.**	**8.EE.7** **Solve linear equations in one variable.**	

Represent and analyze quantitative relationships between dependent and independent variables	6	7	7 Extended	8	8 Extended
			8.EE.7a **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).**	**8.EE.7a** **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).**	**A.REI.5** **Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.**

Represent and analyze quantitative relationships between dependent and independent variables Analyze and solve linear equations and pairs of simultaneous linear equations.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
			8.EE.7b Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	**8.EE.7b Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.**	**A.REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables**
			.	**8.EE.8 Analyze and solve pairs of simultaneous linear equations.**	**8.EE.8 Analyze and solve pairs of simultaneous linear equations**
				8.EE.8a 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.	**8.EE.8a 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.**

Represent and analyze quantitative relationships between dependent and independent variables Analyze and solve linear equations and pairs of simultaneous linear equations.	6	7	7 Extended	8	8 Extended
				8.EE.8b 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.	8.EE.8b 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.
				8.EE.8c 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.EE.8c 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.

	6	7	7 Extended	8	8 Extended
					A.REI.7 **Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.**
					A.REI.10 **Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).**

	6	7	7 Extended	8	8 Extended
					A.REI.11 **Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately, e.g., using technology** **Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.⋆**
					A.REI.12 **Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.**

	6	7	7 Extended	8	8 Extended
					F.LE.1 **Distinguish between situations that can be modeled with linear functions and with exponential functions.**
					Prove that linear functions grow by equal differences over equal intervals; and that exponential functions grow by equal factors over equal intervals.
					Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
					Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another

	6	7	7 Extended	8	8 Extended
					F.LE.2 **Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).**
					F.LE.3 **Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.**
					F.LE.5 **Interpret the parameters in a linear or exponential function in terms of a context.**

	6	7	7 Extended	8	8 Extended
					A.REI.4 **Solve quadratic equations in one variable.** **a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x – p)2 = q that has the same solutions.** **Derive the quadratic formula from this form.** **b. Solve quadratic equations by inspection (e.g., for x2 = 49), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.** **Recognize when the quadratic formula gives complex solutions and write them as a ± bi for real numbers a and b.**

Define, evaluate, and compare functions	6	7	7 Extended	8	8 Extended
				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**	**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**
				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.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.**

Define, evaluate, and compare functions	6	7	7 Extended	8	8 Extended
				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 = s2 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.**	**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 = s2 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.**

Define, evaluate, and compare functions	6	7	7 Extended	8	8 Extended
				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.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.**

	6	7	7 Extended	8	8 Extended
				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.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**

Define, evaluate, and compare functions	6	7	7 Extended	8	8 Extended
				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..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.**

	6	7	7 Extended	8	8 Extended
					F.IF.1 **Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x).**
					F.IF.2 **Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.**
					F.IF.3 **Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.**

	6	7	7 Extended	8	8 Extended
					F.IF.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity

	6	7	7 Extended	8	8 Extended
					F.IF.5 **Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.⋆**
					F.IF.6 **Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.⋆**

	6	7	7 Extended	8	8 Extended
					F.IF.7 **Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.⋆** **a. Graph linear and quadratic functions and show intercepts, maxima, and minima**
					F.IF.8 **Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.**
					Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context

	6	7	7 Extended	8	8 Extended
					Use the properties of exponents to interpret expressions for exponential functions.
					F.IF.9 **Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).**
					F.BF.1 **Write a function that describes a relationship between two quantities.⋆** **a. Determine an explicit expression, a recursive process, or steps for calculation from a context.** **b. Combine standard function types using arithmetic operations.**

	6	7	7 Extended	8	8 Extended
					F.BF.4 **Find inverse functions.** **a. Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse.**
					F.IF.5 **Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.**

	6	7	7 Extended	8	8 Extended
					F.BF.2 **Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.⋆**
					F.BF.3 **Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs.** **Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.**

Solve real-world and mathematical problems involving area, surface area, and volume.	6	7	7 Extended	8	8 Extended
	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	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.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	8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	
		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.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.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple	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.	**equations for an unknown angle in a figure.**		
Solve real-world and mathematical problems involving area, surface area, and volume.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
	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**				

Solve real-world and mathematical problems involving area, surface area, and volume.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
	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.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.**	**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.**	**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.**		

Understand congruence and similarity using physical models, transparencies, or geometry software.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
		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.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.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.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.**		

Understand congruence and similarity using physical models, transparencies, or geometry software.	6	7	7 Extended	8	8 Extended
			8.G.1 Verify experimentally the properties of rotations, reflections, and translations:	8.G.1 Verify experimentally the properties of rotations, reflections, and translations:	
			8.G.1a Lines are taken to lines, and line segments to line segments of the same length.	8.G.1a Lines are taken to lines, and line segments to line segments of the same length.	
			8.G.1b Angles are taken to angles of the same measure.	8.G.1b Angles are taken to angles of the same measure.	
			8.G.1c Parallel lines are taken to parallel lines.	8.G.1c Parallel lines are taken to parallel lines.	

Understand congruence and similarity using physical models, transparencies, or geometry software.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
			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.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.G.3 **Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates**	**8.G.3** **Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates**	

Understand congruence and similarity using physical models, transparencies, or geometry software.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
			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.**	**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.**	

Understand congruence and similarity using physical models, transparencies, or geometry software.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
			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.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.**	

Understand and apply the Pythagorean Theorem.	6	7	7 Extended	8	8 Extended
				8.G.6 Explain a proof of the Pythagorean Theorem and its converse.	8.G.6 Explain a proof of the Pythagorean Theorem and its converse.
				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.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.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system	8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system

Develop understanding of statistical variability	6	7	7 Extended	8	8 Extended
	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.**	**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.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.**		**S.ID.1** **Represent data with plots on the real number line (dot plots, histograms, and box plots).**

Develop understanding of statistical variability	6	7	7 Extended	8	8 Extended
	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.	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.	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.		S.ID.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets

Develop understanding of statistical variability	6	7	7 Extended	8	8 Extended
	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**	**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.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.**		**S.ID.3** **Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).**

Summarize and describe distributions.	6	7	7 Extended	8	8 Extended
	6.SP.4 **Display numerical data in plots on a number line, including dot plots, histograms, and box plots**			**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.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**
	6.SP.5 **Summarize numerical data sets in relation to their context, such as by:**			**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.**	**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.**

Summarize and describe distributions	6	7	7 Extended	8	8 Extended
	6.SP.5a Reporting the number of observations			**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.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.*

Summarize and describe distributions	6	7	7 Extended	8	8 Extended
	6.SP.5b Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.			**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.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?*

Summarize and describe distributions	6	7	7 Extended	8	8 Extended
	6.SP.5c **Use 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.**	**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.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*		**S.ID.5** **Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies).** **Recognize possible associations and trends in the data.**
	6.SP.5d **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.**				**S.ID.6** **Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.** **.** **Fit a linear function for a scatter plot that suggests a linear association.**

	6	7	7 Extended	8	8 Extended
					Fit a function to the data; use functions fitted to data to solve problems in the context of the data.
					Informally assess the fit of a function by plotting and analyzing residuals.
					Use given functions or choose a function suggested by the context. Emphasize linear and exponential models
					S.ID.7 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
					S.ID.8 Compute (using technology) and interpret the correlation coefficient of a linear fit.

					S.ID.9 **Distinguish between correlation and causation.**

Investigate chance processes and develop, use, and evaluate probability models.	6	7	7 Extended	8	8 Extended
		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.**	**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.**		

Investigate chance processes and develop, use, and evaluate probability models.	6	7	7 Extended	8	8 Extended
		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.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.		

Investigate chance processes and develop, use, and evaluate probability models.	6	7	7 Extended	8	8 Extended
		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.**	**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.**		
		7.SP.7a **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.**	**7.SP.7a** **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.**		

Investigate chance processes and develop, use, and evaluate probability models.	6	7	7 Extended	8	8 Extended
		7.SP.7b 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?	7.SP.7b 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?		

Investigate chance processes and develop, use, and evaluate probability models.	**6**	**7**	**7 Extended**	**8**	**8 Extended**	
		7.SP.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.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.8c **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?**	**7.SP.8c** **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?**			

Investigate chance processes and develop, use, and evaluate probability models.	**6**	**7**	**7 Extended**	**8**	**8 Extended**
Investigate chance processes and develop, use, and evaluate probability models.		**7.SP.8** **Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.**	**7.SP.8** **Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.**		
		7.SP.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.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**		