

Math

High School

| AS D Name | BSH C Name | S Description | Standard Pacing | Common Assessments | Resources Used | Vocabulary | Instructional Practices | Notes |
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| Algebra: Arithmetic with Polynomials & Rational Expressions | Use polynomial identities to solve problems. | (+) Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n , where x and y are any numbers, with coefficients determined for example by Pascal's Triangle. | Algebra 2, 4th Quarter | | | | | |
| Algebra: Arithmetic with Polynomials & Rational Expressions | Rewrite rational expressions. | (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions. | Algebra 1, 4th Quarter | | | | | Don't cover "closed" |
| Algebra: Arithmetic with Polynomials & Rational Expressions | Rewrite rational expressions. | (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions. | Algebra 2, 1st Quarter | | | | | |
| Algebra: Arithmetic with Polynomials & Rational Expressions | Understand the relationship between zeros and factors of polynomials. | Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. | Algebra 2. 2nd Quarter | | | | | |
| Algebra: Arithmetic with Polynomials & Rational Expressions | Understand the relationship between zeros and factors of polynomials. | Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on | Algebra 2, 2nd Quarter | | | | | |

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| | | division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$. | | | | | | |
| Algebra: Arithmetic with Polynomials & Rational Expressions | Use polynomial identities to solve problems. | Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity $(x^2 + y^2)^2 = (x^2 - y^2)^2 + (2xy)^2$ can be used to generate Pythagorean triples. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Arithmetic with Polynomials & Rational Expressions | Rewrite rational expressions. | Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system. | Algebra 1, 4th Quarter | | | | | Long Division |
| Algebra: Arithmetic with Polynomials & Rational Expressions | Rewrite rational expressions. | Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system. | Algebra 2, 1st Quarter | | | | | |
| Algebra: Arithmetic with Polynomials & Rational Expressions | Perform arithmetic operations on polynomials. | Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; | Algebra 1, 3rd Quarter | | | | | |

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| | | add, subtract, and multiply polynomials. | | | | | | |
| Algebra: Arithmetic with Polynomials & Rational Expressions | Perform arithmetic operations on polynomials. | Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. | Algebra 2, 1st Quarter | | | | | |
| Algebra: Creating Equations | Create equations that describe numbers or relationships. | Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. | Algebra 1, 1st Quarter | | | | | |
| Algebra: Creating Equations | Create equations that describe numbers or relationships. | Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. | Algebra 2, 1st Quarter | | | | | |
| Algebra: Creating Equations | Create equations that describe numbers or relationships. | Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. | Algebra 1, 2nd Quarter | | | | | |
| Algebra: Creating Equations | Create equations that describe numbers or relationships. | Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. | Algebra 2, 1st Quarter | | | | | |
| Algebra: Creating Equations | Create equations that describe numbers or relationships. | Rearrange formulas to highlight a quantity of interest, using | Algebra 1, 1st Quarter | | | | | |

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| | | the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R . | | | | | | |
| Algebra: Creating Equations | Create equations that describe numbers or relationships. | Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R . | Algebra 2, 1st Quarter | | | | | |
| Algebra: Creating Equations | Create equations that describe numbers or relationships. | Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. | Algebra 1, 3rd Quarter | | | | | |
| Algebra: Creating Equations | Create equations that describe numbers or relationships. | Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. | Algebra 2, 1st Quarter | | | | | |

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| Algebra: Reasoning with Equations & Inequalities | Solve systems of equations. | (+) Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension 3×3 or greater). | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve systems of equations. | (+) Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension 3×3 or greater). | PreCalc, 3rd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve systems of equations. | (+) Represent a system of linear equations as a single matrix equation in a vector variable. | PreCalc, 3rd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Understand solving equations as a process of reasoning and explain the reasoning. | 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 method. | Algebra 1, 1st Quarter | | | | 2-Column Proofs | Work on the EXPLANATION |
| Algebra: Reasoning with Equations & Inequalities | Understand solving equations as a process of reasoning and explain the reasoning. | 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 method. | Algebra 2, 1st Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Represent and solve equations and inequalities graphically. | 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 | Algebra 1, 3rd Quarter | | | | | |

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| | | equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. | | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Represent and solve equations and inequalities graphically. | 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 to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Represent and solve equations and inequalities graphically. | 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. | Algebra 1, 2nd Quarter | | | | | |

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| Algebra: Reasoning with Equations & Inequalities | Represent and solve equations and inequalities graphically. | 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. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve systems of equations. | 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. | Algebra 1, 3rd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve systems of equations. | 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. | Algebra 2, 1st Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve systems of equations. | Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$. | Algebra 2, 3rd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve equations and inequalities in one variable. | Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. | Algebra 1, 2nd Quarter | | | | | |
| Algebra: Reasoning with Equations & | Solve equations and inequalities in one variable. | Solve linear equations and inequalities in one variable, | Algebra 2, 1st Quarter | | | | | |

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| Inequalities | | including equations with coefficients represented by letters. | | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve equations and inequalities in one variable. | Solve quadratic equations by inspection (e.g., for $x^2 = 49$), 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 $a \pm bi$ for real numbers a and b . | Algebra 1, 4th Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve equations and inequalities in one variable. | Solve quadratic equations by inspection (e.g., for $x^2 = 49$), 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 $a \pm bi$ for real numbers a and b . | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve equations and inequalities in one variable. | Solve quadratic equations in one variable. | Algebra 1, 3rd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve equations and inequalities in one variable. | Solve quadratic equations in one variable. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Understand solving equations as a process of reasoning and explain the reasoning. | Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. | Algebra 1, 4th Quarter | | | | | |

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| Algebra: Reasoning with Equations & Inequalities | Understand solving equations as a process of reasoning and explain the reasoning. | Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. | Algebra 2, 2nd Quarter | | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve systems of equations. | Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. | Algebra 1, 3rd Quarter | | | | | | Solving Linear Systems with Graphs |
| Algebra: Reasoning with Equations & Inequalities | Solve systems of equations. | Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. | Algebra 2, 1st Quarter | | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Represent and solve equations and inequalities graphically. | 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). | Algebra 1, 2nd Quarter | | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Represent and solve equations and inequalities graphically. | 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). | Algebra 2, 1st Quarter | | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve equations and inequalities in one variable. | 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. | Algebra 1, 4th Quarter | | | | | | |
| Algebra: Reasoning with Equations & Inequalities | Solve equations and inequalities in one variable. | Use the method of completing the square to transform any quadratic equation in x | Algebra 2, 2nd Quarter | | | | | | |

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| | | into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. | | | | | | |
| Algebra: Seeing Structure in Expressions | Write expressions in equivalent forms to solve problems. | Factor a quadratic expression to reveal the zeros of the function it defines. | Algebra 1, 4th Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Write expressions in equivalent forms to solve problems. | Factor a quadratic expression to reveal the zeros of the function it defines. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Write expressions in equivalent forms to solve problems. | Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Write expressions in equivalent forms to solve problems. | Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15^t can be rewritten as $(1.15^{1/12})^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Write expressions in equivalent forms to solve problems. | Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. | Algebra 1, 4th Quarter | | | | | Completing the Square/Factoring to put into vertex form of a parabola |
| Algebra: Seeing Structure in Expressions | Write expressions in equivalent forms to solve problems. | Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. | Algebra 2, 2nd Quarter | | | | | |

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| Algebra: Seeing Structure in Expressions | Write expressions in equivalent forms to solve problems. | Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments. | Algebra 2, 4th Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Interpret the structure of expressions. | 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. | Algebra 1, 1st Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Interpret the structure of expressions. | 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. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Interpret the structure of expressions. | Interpret expressions that represent a quantity in terms of its context. | Algebra 1, 1st Quarter | | | | | Vocabulary: Coefficients, Terms, Factors, Constants |
| Algebra: Seeing Structure in Expressions | Interpret the structure of expressions. | Interpret expressions that represent a quantity in terms of its context. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Interpret the structure of expressions. | Interpret parts of an expression, such as terms, factors, and coefficients. | Algebra 1, 1st Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Interpret the structure of expressions. | Interpret parts of an expression, such as terms, factors, and coefficients. | Algebra 2, 2nd Quarter | | | | | |
| Algebra: Seeing Structure in Expressions | Interpret the structure of expressions. | Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can | Algebra 1, 4th Quarter | | | | | Factoring (Difference of Squares) |

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| | | be factored as $(x^2 - y^2)(x^2 + y^2)$. | | | | | | |
| Algebra: Seeing Structure in Expressions | Interpret the structure of expressions. | Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$. | Algebra 2, 2nd Quarter | | | | | |
| Functions: Building Functions | Build a function that models a relationship between two quantities. | (+) Compose functions. For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Building Functions | Build new functions from existing functions. | (+) Produce an invertible function from a non-invertible function by restricting the domain. | PreCalc, 2nd Quarter | | | | | |
| Functions: Building Functions | Build new functions from existing functions. | (+) Read values of an inverse function from a graph or a table, given that the function has an inverse. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Building Functions | Build new functions from existing functions. | (+) Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Building Functions | Build new functions from existing functions. | (+) Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents. | PreCalc, 2nd Quarter | | | | | |

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| Functions: Building Functions | Build new functions from existing functions. | (+) Verify by composition that one function is the inverse of another. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Building Functions | Build a function that models a relationship between two quantities. | Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Building Functions | Build a function that models a relationship between two quantities. | Determine an explicit expression, a recursive process, or steps for calculation from a context. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Building Functions | Build a function that models a relationship between two quantities. | Determine an explicit expression, a recursive process, or steps for calculation from a context. | PreCalc, 2nd Quarter | | | | | |
| Functions: Building Functions | Build new functions from existing functions. | Find inverse functions. | Algebra 2, 2nd Quarter | | | | | |
| Functions: Building Functions | Build new functions from existing functions. | 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. | Algebra 2, 3rd Quarter | | | | | Emphasize even and odd functions |

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| Functions: Building Functions | Build new functions from existing functions. | 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. For example, $f(x) = 2x^3$ or $f(x) = (x+1)/(x-1)$ for $x \neq 1$. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Building Functions | Build a function that models a relationship between two quantities. | Write a function that describes a relationship between two quantities. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Building Functions | Build a function that models a relationship between two quantities. | Write a function that describes a relationship between two quantities. | Algebra 2, 2nd Quarter | | | | | |
| Functions: Building Functions | Build a function that models a relationship between two quantities. | Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. | Algebra 2, 4th Quarter | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | Graph linear and quadratic functions and show intercepts, maxima, and minima. | Algebra 2, 2nd Quarter | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | 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. | Algebra 2, 2nd Quarter | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of | Algebra 1, 3rd Quarter | | | | | |

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| | | change in functions such as $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^t/10$, and classify them as representing exponential growth or decay. | | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^t/10$, and classify them as representing exponential growth or decay. | Algebra 2, 2nd Quarter | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. | Algebra 2, 2nd Quarter | | | | | Emphasize End Behavior |
| Functions: Interpreting Functions | Interpret functions that arise in applications in terms of the context. | 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. | Algebra 1, 2nd Quarter | | | | | |
| Functions: Interpreting Functions | Interpret functions that arise in applications in terms of the context. | 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. | Algebra 2, 1st Quarter | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | Compare properties of two functions each represented in a different way (algebraically, | Algebra 2, 2nd Quarter | | | | | |

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| | | graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum. | | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum. | Algebra 1, 3rd Quarter | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior. | Algebra 2, 3rd Quarter | | | | | Show End Behavior |
| Functions: Interpreting Functions | Analyze functions using different representations. | Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. | Algebra 2, 3rd Quarter | | | | | |
| Functions: Interpreting Functions | Analyze functions using different representations. | Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. | PreCalc, 2nd Quarter | | | | | Exponential and Logarithmic |

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| <p>Functions: Interpreting Functions</p> | <p>Interpret functions that arise in applications in terms of the context.</p> | <p>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.</p> | <p>Algebra 2, 3rd Quarter</p> | | | | | <p>Emphasize End Behavior</p> |
| <p>Functions: Interpreting Functions</p> | <p>Understand the concept of a function and use function notation.</p> | <p>Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.</p> | <p>Algebra 2, 3rd Quarter</p> | | | | | |
| <p>Functions: Interpreting Functions</p> | <p>Interpret functions that arise in applications in terms of the context.</p> | <p>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.</p> | <p>Algebra 1, 2nd Quarter</p> | | | | | |

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| Functions: Interpreting Functions | Interpret functions that arise in applications in terms of the context. | 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. | Algebra 2, 2nd Quarter | | | | | |
| Functions: Interpreting Functions | Understand the concept of a function and use function notation. | 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 $y = f(x)$. | Algebra 1, 1st Quarter | | | | | |
| Functions: Interpreting Functions | Understand the concept of a function and use function notation. | 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 $y = f(x)$. | Algebra 2, 1st Quarter | | | | | |
| Functions: Interpreting Functions | Understand the concept of a function and use function notation. | Use function notation, evaluate functions for inputs in their | Algebra 1, 3rd Quarter | | | | | |

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| | | domains, and interpret statements that use function notation in terms of a context. | | | | | | |
| Functions: Interpreting Functions | Understand the concept of a function and use function notation. | Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. | Algebra 2, 1st Quarter | | | | | |
| Functions: Linear, Quadratic, & Exponential Models | Construct and compare linear, quadratic, and exponential models and solve problems. | 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). | Algebra 2, 3rd Quarter | | | | | |
| Functions: Linear, Quadratic, & Exponential Models | Construct and compare linear, quadratic, and exponential models and solve problems. | Distinguish between situations that can be modeled with linear functions and with exponential functions. | Algebra 2, 2nd Quarter | | | | | NEED TO DO |
| Functions: Linear, Quadratic, & Exponential Models | Construct and compare linear, quadratic, and exponential models and solve problems. | For exponential models, express as a logarithm the solution to $abct = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithm using technology. | Algebra 2, 2nd Quarter | | | | | Converting from logarithmic to exponential form |
| Functions: Linear, Quadratic, & Exponential Models | Interpret expressions for functions in terms of the situation they model. | Interpret the parameters in a linear or exponential function in terms of a context. | Algebra 1, 3rd Quarter | | | | | |
| Functions: Linear, Quadratic, & Exponential Models | Interpret expressions for functions in terms of the situation they model. | Interpret the parameters in a linear or exponential function in terms of a context. | Algebra 2, 2nd Quarter | | | | | |
| Functions: Linear, Quadratic, & Exponential Models | Construct and compare linear, quadratic, and exponential models and solve problems. | Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a | Algebra 2, 2nd Quarter | | | | | |

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| | | quantity increasing linearly, quadratically, or (more generally) as a polynomial function. | | | | | | |
| Functions: Linear, Quadratic, & Exponential Models | Construct and compare linear, quadratic, and exponential models and solve problems. | Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. | Algebra 2, 2nd Quarter | | | | | NEED TO DO |
| Functions: Linear, Quadratic, & Exponential Models | Construct and compare linear, quadratic, and exponential models and solve problems. | Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. | Algebra 2, 2nd Quarter | | | | | |
| Functions: Linear, Quadratic, & Exponential Models | Construct and compare linear, quadratic, and exponential models and solve problems. | Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. | PreCalc, 2nd Quarter | | | | | |
| Functions: Linear, Quadratic, & Exponential Models | Construct and compare linear, quadratic, and exponential models and solve problems. | Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. | Algebra 2, 1st Quarter | | | | | |
| Functions: Trigonometric Functions | Prove and apply trigonometric identities. | (+) Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems. | PreCalc, 2nd Quarter | | | | | |
| Functions: Trigonometric Functions | Model periodic phenomena with trigonometric functions. | (+) Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed. | ?? | | | | | |
| Functions: Trigonometric Functions | Model periodic phenomena with trigonometric functions. | (+) Use inverse functions to solve trigonometric equations that | PreCalc, 3rd Quarter | | | | | |

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| | | arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context. | | | | | | |
| Functions: Trigonometric Functions | Extend the domain of trigonometric functions using the unit circle. | (+) Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$ and use the unit circle to express the values of sine, cosines, and tangent $\pi/6 -x$, $\pi/6 +x$, and $2\pi/6 -x$ in terms of their values for x , where x is any real number. | Algebra 2, 4th Quarter | | | | | |
| Functions: Trigonometric Functions | Extend the domain of trigonometric functions using the unit circle. | (+) Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$ and use the unit circle to express the values of sine, cosines, and tangent $\pi/6 -x$, $\pi/6 +x$, and $2\pi/6 -x$ in terms of their values for x , where x is any real number. | PreCalc, 2nd Quarter | | | | | |
| Functions: Trigonometric Functions | Extend the domain of trigonometric functions using the unit circle. | (+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions. ? | Algebra 2, 3rd Quarter | | | | | |
| Functions: Trigonometric Functions | Model periodic phenomena with trigonometric functions. | Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline. | PreCalc, 1st Quarter | | | | | |
| Functions: Trigonometric Functions | Extend the domain of trigonometric functions using the unit circle. | Explain how the unit circle in the coordinate plane enables the extension of trigonometric | Algebra 2, 4th Quarter | | | | | |

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| | | functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle. | | | | | | |
| Functions: Trigonometric Functions | Prove and apply trigonometric identities. | Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle. | Algebra 2, 4th Quarter | | | | | NEED TO DO |
| Functions: Trigonometric Functions | Prove and apply trigonometric identities. | Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle. | PreCalc | | | | | |
| Functions: Trigonometric Functions | Extend the domain of trigonometric functions using the unit circle. | Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle. | Algebra 2: 4th Quarter | | | | | |
| Geometry: Circles | Understand and apply theorems about circles. | (+) Construct a tangent line from a point outside a given circle to the circle. | Cover in Honors Geometry, 2nd Quarter | | | | | |
| Geometry: Circles | Understand and apply theorems about circles. | Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle. | Geometry, 2nd Quarter | | | | | Prove, but don't construct. |
| Geometry: Circles | Find arc lengths and areas of sectors of circles. | Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian | Algebra 2, 2nd Quarter | | | | | Use, not derive, the formula of the area of a sector. |

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| | | measure of the angle as the constant of proportionality; derive the formula for the area of a sector. | | | | | | |
| Geometry: Circles | Find arc lengths and areas of sectors of circles. | Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. | Geometry, 2nd Quarter | | | | | |
| Geometry: Circles | Find arc lengths and areas of sectors of circles. | Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. | PreCalc, 2nd Quarter | | | | | |
| Geometry: Circles | Understand and apply theorems about circles. | Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle. | Geometry, 3rd Quarter | | | | | |
| Geometry: Circles | Understand and apply theorems about circles. | Prove that all circles are similar. | Geometry, 3rd Quarter | | | | | |
| Geometry: Congruence | Make geometric constructions. | Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. | Geometry, 3rd Quarter | | | | | NEED TO DO |

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| Geometry: Congruence | Experiment with transformations in the plane. | Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. | Geometry, 3rd Quarter | | | | | |
| Geometry: Congruence | Understand congruence in terms of rigid motions. | Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions. | Geometry, 3rd Quarter | | | | | |
| Geometry: Congruence | Experiment with transformations in the plane. | Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another. | Geometry, 3rd Quarter | | | | | |
| Geometry: Congruence | Experiment with transformations in the plane. | Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself. | Geometry, 3rd Quarter | | | | | |
| Geometry: Congruence | Experiment with transformations in the plane. | Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. | Geometry, 1st Quarter | | | | | |
| Geometry: Congruence | Experiment with transformations in the plane. | Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, | Geometry, 3rd Quarter | | | | | |

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| | | line, distance along a line, and distance around a circular arc. | | | | | | |
| Geometry: Congruence | Make geometric constructions. | Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line. | Geometry, 1st Quarter | | | | | |
| Geometry: Congruence | Prove geometric theorems. | Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints. | Geometry, 2nd Quarter | | | | | |
| Geometry: Congruence | Prove geometric theorems. | Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles | Geometry, 1st Quarter | | | | | |

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| | | are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints. | | | | | | |
| Geometry: Congruence | Prove geometric theorems. | Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals. | Geometry, 3rd Quarter | | | | | |
| Geometry: Congruence | Prove geometric theorems. | Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180° ; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point. | Geometry, 1st Quarters | | | | | |
| Geometry: Congruence | Prove geometric theorems. | Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180° ; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and | Geometry, 2nd Quarter | | | | | |

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| | | half the length; the medians of a triangle meet at a point. | | | | | | |
| Geometry: Congruence | Experiment with transformations in the plane. | Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch). | Geometry, 3rd Quarter | | | | | NEED TO DO |
| Geometry: Congruence | Understand congruence in terms of rigid motions. | Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent. | Geometry, 3rd Quarter | | | | | Rigid Motion: a transformation of points in space consisting of a sequence of one or more translations, reflections and/or rotations. |
| Geometry: Congruence | Understand congruence in terms of rigid motions. | Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. | Geometry, 3rd Quarter | | | | | |
| Geometry: Congruence | Understand congruence in terms of rigid motions. | Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. | Concepts of Geometry, 2nd Quarter | | | | | |

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| Geometry: Expressing Geometric Properties with Equations | Translate between the geometric description and the equation for a conic section. | (+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant. | Algebra 2, 3rd Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Translate between the geometric description and the equation for a conic section. | Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation. | Geometry, 3rd Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Translate between the geometric description and the equation for a conic section. | Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation. | Concepts of Geometry, 3rd Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Translate between the geometric description and the equation for a conic section. | Derive the equation of a parabola given a focus and directrix. | Algebra 2, 3rd Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Use coordinates to prove simple geometric theorems algebraically. | Find the point on a directed line segment between two given points that partitions the segment in a given ratio. | Geometry, 3rd Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Use coordinates to prove simple geometric theorems algebraically. | Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point). | Algebra 1, 2nd Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Use coordinates to prove simple geometric theorems algebraically. | Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric | PreCalc, 1st Quarter | | | | | |

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| | | problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point). | | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Use coordinates to prove simple geometric theorems algebraically. | Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point). | Geometry, 2nd Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Use coordinates to prove simple geometric theorems algebraically. | Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point). | Algebra 2, 1st Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Use coordinates to prove simple geometric theorems algebraically. | Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula. | Algebra 2, 2nd Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Use coordinates to prove simple geometric theorems algebraically. | Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula. | Geometry, 1st Quarter | | | | | |
| Geometry: Expressing Geometric Properties with Equations | Use coordinates to prove simple geometric theorems algebraically. | Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, $\sqrt{3}$) lies on the circle | Geometry, 1st Quarter | | | | | |

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| | | centered at the origin and containing the point (0, 2). | | | | | | |
| Geometry: Geometric Measurement & Dimension | Explain volume formulas and use them to solve problems. | (+) Give an informal argument using Cavalieri's principle for the volume of a sphere and other solid figures. | Honors Geometry, 4th Quarter | | | | | |
| Geometry: Geometric Measurement & Dimension | Explain volume formulas and use them to solve problems. | Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments. | Geometry, 1st Quarter | | | | | Formulas of the circumference of a circle, area of a circle, volume of a cylinder, pyramid and cone. Dissection?? |
| Geometry: Geometric Measurement & Dimension | Visualize relationships between two-dimensional and three-dimensional objects. | Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects. | Geometry, 3rd Quarter | | | | | |
| Geometry: Geometric Measurement & Dimension | Explain volume formulas and use them to solve problems. | Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. | Geometry, 4th Quarter | | | | | |
| Geometry: Modeling with Geometry | Apply geometric concepts in modeling situations. | Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot). | Algebra 1, 1st Quarter | | | | | Working with units. |
| Geometry: Modeling with Geometry | Apply geometric concepts in modeling situations. | Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot). | Geometry, 2nd Quarter | | | | | |

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| Geometry: Modeling with Geometry | Apply geometric concepts in modeling situations. | Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot). | Algebra 2, 1st Quarter | | | | | |
| Geometry: Modeling with Geometry | Apply geometric concepts in modeling situations. | Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios). | Algebra 2, 3rd Quarter | | | | | |
| Geometry: Modeling with Geometry | Apply geometric concepts in modeling situations. | Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios). | PreCalc, 2nd Quarter | | | | | |
| Geometry: Modeling with Geometry | Apply geometric concepts in modeling situations. | Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios). | Geometry, 4th Quarter | | | | | |
| Geometry: Modeling with Geometry | Apply geometric concepts in modeling situations. | Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder). | Geometry, 4th Quarter | | | | | |
| Geometry: Similarity, Right Triangles, & Trigonometry | Apply trigonometry to general triangles. | (+) Derive the formula $A = 1/2$ $ab \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side. | Algebra 2, 4th Quarter | | | | | Use formula, not derive, in Algebra 2 and PreCalc. |

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| Geometry: Similarity, Right Triangles, & Trigonometry | Apply trigonometry to general triangles. | (+) Prove the Laws of Sines and Cosines and use them to solve problems. | | | | | | Use Laws of Sines and Cosines, but we do not prove. |
| Geometry: Similarity, Right Triangles, & Trigonometry | Apply trigonometry to general triangles. | (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces). | Algebra 2, 4th Quarter | | | | | |
| Geometry: Similarity, Right Triangles, & Trigonometry | Understand similarity in terms of similarity transformations. | A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. | Geometry, 3rd Quarter | | | | | Dilating through a point other than the center. |
| Geometry: Similarity, Right Triangles, & Trigonometry | Define trigonometric ratios and solve problems involving right triangles. | Explain and use the relationship between the sine and cosine of complementary angles. | Geometry, 4th Quarter | | | | | |
| Geometry: Similarity, Right Triangles, & Trigonometry | Understand similarity in terms of similarity transformations. | Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides. | Geometry, 3rd Quarter | | | | | In terms of transformations, understand that figures are similar. |
| Geometry: Similarity, Right Triangles, & Trigonometry | Prove theorems involving similarity. | Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle | Geometry, 3rd Quarter | | | | | |

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| | | similarity. | | | | | | |
| Geometry: Similarity, Right Triangles, & Trigonometry | Understand similarity in terms of similarity transformations. | The dilation of a line segment is longer or shorter in the ratio given by the scale factor. | Geometry, 3rd Quarter | | | | | |
| Geometry: Similarity, Right Triangles, & Trigonometry | Define trigonometric ratios and solve problems involving right triangles. | Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles. | Geometry, 3rd Quarter | | | | | |
| Geometry: Similarity, Right Triangles, & Trigonometry | Prove theorems involving similarity. | Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. | Geometry, 3rd Quarter | | | | | Triangle Congruency Theorems |
| Geometry: Similarity, Right Triangles, & Trigonometry | Understand similarity in terms of similarity transformations. | Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar. | Geometry, 3rd Quarter | | | | | |
| Geometry: Similarity, Right Triangles, & Trigonometry | Define trigonometric ratios and solve problems involving right triangles. | Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. | Algebra 2, 3rd Quarter | | | | | |
| Geometry: Similarity, Right Triangles, & Trigonometry | Define trigonometric ratios and solve problems involving right triangles. | Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. | Geometry, 3rd Quarter | | | | | |
| Geometry: Similarity, Right Triangles, & Trigonometry | Understand similarity in terms of similarity transformations. | Verify experimentally the properties of dilations given by a center and a scale factor: | Geometry, 3rd Quarter | | | | | Experimentally?? It is demonstrated as an experiment by the teacher. |
| Number & Quantity: Quantities | Reason quantitatively and use units to solve problems. | Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. | Algebra 1, 1st Quarter | | | | | Rounding, Significant Digits |
| Number & Quantity: Quantities | Reason quantitatively and use units to solve problems. | Choose a level of accuracy appropriate to limitations on measurement | Algebra 2, 1st Quarter | | | | | Ex: Money to the nearest cent |

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| | | when reporting quantities. | | | | | | |
| Number & Quantity: Quantities | Reason quantitatively and use units to solve problems. | Define appropriate quantities for the purpose of descriptive modeling. | Algebra 1, 1st Quarter | | | | | Reasonable Answer (does it make sense) |
| Number & Quantity: Quantities | Reason quantitatively and use units to solve problems. | Define appropriate quantities for the purpose of descriptive modeling. | Algebra 2, 1st Quarter | | | | | |
| Number & Quantity: Quantities | Reason quantitatively and use units to solve problems. | 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. | Algebra 1, 1st Quarter | | | | | Applying units to story problems |
| Number & Quantity: Quantities | Reason quantitatively and use units to solve problems. | 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. | Algebra 2 1st Quarter | | | | | |
| Number & Quantity: The Complex Number System | Represent complex numbers and their operations on the complex plane. | (+) Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: The Complex Number System | Use complex numbers in polynomial identities and equations. | (+) Extend polynomial identities to the complex numbers. For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$. | Algebra 2, 2nd Quarter | | | | | |

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| Number & Quantity: The Complex Number System | Perform arithmetic operations with complex numbers. | (+) Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers. | Algebra 2, 1st Quarter | | | | | Use of conjugates: $1/(1+i)$ |
| Number & Quantity: The Complex Number System | Use complex numbers in polynomial identities and equations. | (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials. | Algebra 2, 2nd Quarter | | | | | Degree of the function tells you the # of solutions |
| Number & Quantity: The Complex Number System | Represent complex numbers and their operations on the complex plane. | (+) Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. For example, $(-1 + \sqrt{3}i)^3 = 8$ because $(-1 + \sqrt{3}i)$ has modulus 2 and argument 120° . | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: The Complex Number System | Represent complex numbers and their operations on the complex plane. | (+) Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: The Complex Number System | Perform arithmetic operations with complex numbers. | Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real. | Algebra 2, 1st Quarter | | | | | |
| Number & Quantity: The Complex Number System | Use complex numbers in polynomial identities and equations. | Solve quadratic equations with real coefficients that have complex solutions. | Algebra 2, 2nd Quarter | | | | | |
| Number & Quantity: The Complex Number System | Perform arithmetic operations with complex numbers. | Use the relation $i^2 = -1$ and the commutative, associative, and distributive | Algebra 2, 1st Quarter | | | | | |

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| | | properties to add, subtract, and multiply complex numbers. | | | | | | |
| Number & Quantity: The Real Number System | Extend the properties of exponents to rational exponents. | 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. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)^3} = 5^{1/3}$ to hold, so $(5^{1/3})^3$ must equal 5. | Algebra 2, 1st Quarter | | | | | Meaning: $b^{(1/2)}$ is the square root of b |
| Number & Quantity: The Real Number System | Use properties of rational and irrational numbers. | 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. | Algebra 2, 1st Quarter | | | | | Incorporate Algebraic Proofs |
| Number & Quantity: The Real Number System | Extend the properties of exponents to rational exponents. | Rewrite expressions involving radicals and rational exponents using the properties of exponents. | Algebra 2, 1st Quarter | | | | | Application |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on vectors. | (+) Add and subtract vectors. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Add, subtract, and multiply matrices of appropriate dimensions. | Algebra 2, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Add, subtract, and multiply matrices of appropriate dimensions. | PreCalc, 2nd Quarter | | | | | |

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| Number & Quantity: Vector & Matrix Quantities | Represent and model with vector quantities. | (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors. | Algebra 2, 2nd Quarter | | | | | Multiplying Matrices |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on vectors. | (+) Multiply a vector by a scalar. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled. | Algebra 2, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Represent and model with vector quantities. | (+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., \mathbf{v} , $ \mathbf{v} $, $\ \mathbf{v}\ $, v). | PreCalc, 3rd Quarter | | | | | |

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| Number & Quantity: Vector & Matrix Quantities | Represent and model with vector quantities. | (+) Solve problems involving velocity and other quantities that can be represented by vectors. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse. | Algebra 2, 2nd Quarter | | | | | Identity Matrix |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties. | Algebra 2, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties. | PreCalc, 2nd Quarter | | | | | |

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|--|--|---|------------------------|--|--|--|--|--|
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network. | Algebra 2, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on matrices and use matrices in applications. | (+) Work with 2×2 matrices as a transformations of the plane, and interpret the absolute value of the determinant in terms of area. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on vectors. | Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on vectors. | Compute the magnitude of a scalar multiple cv using $\ cv\ = c v$. Compute the direction of cv knowing that when $ c v$ $\neq 0$, the direction of cv is either along v (for $c > 0$) or against v (for $c < 0$). | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on vectors. | Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. | PreCalc, 2nd Quarter | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on vectors. | Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as $c(v_x, v_y)$ | PreCalc, 2nd Quarter | | | | | |

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| | | = (cvx, cvy). | | | | | | |
| Number & Quantity: Vector & Matrix Quantities | Perform operations on vectors. | Understand vector subtraction $v - w$ as $v + (-w)$, where $-w$ is the additive inverse of w , with the same magnitude as w and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise. | PreCalc, 2nd Quarter | | | | | |
| Statistics & Probability: Conditional Probability & the Rules of Probability | Use the rules of probability to compute probabilities of compound events in a uniform probability model. | (+) Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model. | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Conditional Probability & the Rules of Probability | Use the rules of probability to compute probabilities of compound events in a uniform probability model. | (+) Use permutations and combinations to compute probabilities of compound events and solve problems. | Algebra 2 | | | | | |
| Statistics & Probability: Conditional Probability & the Rules of Probability | Use the rules of probability to compute probabilities of compound events in a uniform probability model. | Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model. | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Conditional Probability & the Rules of Probability | Understand independence and conditional probability and use them to interpret data. | Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For | Algebra 2 | | | | | NEED TO DO |

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| | | example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results. | | | | | | |
| Statistics & Probability: Conditional Probability & the Rules of Probability | Understand independence and conditional probability and use them to interpret data. | Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not"). | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Conditional Probability & the Rules of Probability | Use the rules of probability to compute probabilities of compound events in a uniform probability model. | Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model. | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Conditional Probability & the Rules of Probability | Understand independence and conditional probability and use them to interpret data. | Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer. | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Conditional Probability & the Rules of | Understand independence and conditional probability and use them to | Understand that two events A and B are independent if the probability of | Algebra 2 | | | | | NEED TO DO |

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| Probability | interpret data. | A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent. | | | | | | |
| Statistics & Probability: Conditional Probability & the Rules of Probability | Understand independence and conditional probability and use them to interpret data. | Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B. | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on two categorical and quantitative variables. | Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. | Algebra 2 | | | | | NEED TO DO, Find resource for residual |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on two categorical and quantitative variables. | Informally assess the fit of a function by plotting and analyzing residuals. | Algebra 1, 2nd Quarter | | | | | Lines of Best Fit |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on two categorical and quantitative variables. | Informally assess the fit of a function by plotting and analyzing residuals. | Algebra 2 | | | | | |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Interpret linear models | Compute (using technology) and interpret the correlation coefficient of a linear fit. | Algebra 2 | | GRAPHING CALCULATOR | | | |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Interpret linear models | Distinguish between correlation and causation. | Algebra 2 | | | | | NEED TO DO, Find resource for causation |

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| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on a single count or measurement variable. | Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers). | Algebra 1, 2nd Quarter | | | | | |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on a single count or measurement variable. | Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers). | Algebra 2, 1st Quarter | | | | | measures of central tendency and range |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Interpret linear models | Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. | Algebra 1, 2nd Quarter | | | | | |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Interpret linear models | Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. | Algebra 2, 1st Quarter | | | | | |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on two categorical and quantitative variables. | NA | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on two categorical and quantitative variables. | Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. | Algebra 1, 2nd Quarter | | | | | |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on two categorical and quantitative variables. | Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. | Algebra 2, 1st Quarter | | | | | |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on a single count or measurement variable. | Represent data with plots on the real number line (dot plots, histograms, and box plots). | Algebra 1, 2nd Quarter | | | | | |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on a single count or measurement variable. | Represent data with plots on the real number line (dot plots, histograms, and | Algebra 2 | | | | | |

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| Data | variable. | box plots). | | | | | | |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on two categorical and quantitative variables. | 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. | Algebra 2 | | | | | NEED TO DO!! |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on a single count or measurement variable. | 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. | Algebra 1 | | | | | Algebra 2: Cover IQR and Standard Deviation |
| Statistics & Probability: Interpreting Categorical & Quantitative Data | Summarize, represent, and interpret data on a single count or measurement variable. | Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve. | Algebra 2 | | | | | NEED TO DO!! |
| Statistics & Probability: Making Inferences & Justifying Conclusions | Understand and evaluate random processes underlying statistical experiments. | Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. | Algebra 1, 1st Quarter | | | | | |

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|---|--|---|------------------------|--|--|--|--|------------|
| Statistics & Probability: Making Inferences & Justifying Conclusions | Understand and evaluate random processes underlying statistical experiments. | Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. | Algebra 2, 2nd Quarter | | | | | |
| Statistics & Probability: Making Inferences & Justifying Conclusions | Make inferences and justify conclusions from sample surveys, experiments, and observational studies. | Evaluate reports based on data. | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Making Inferences & Justifying Conclusions | Make inferences and justify conclusions from sample surveys, experiments, and observational studies. | Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Making Inferences & Justifying Conclusions | Understand and evaluate random processes underlying statistical experiments. | Understand statistics as a process for making inferences about population parameters based on a random sample from that population. | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Making Inferences & Justifying Conclusions | Make inferences and justify conclusions from sample surveys, experiments, and observational studies. | Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. | Algebra 2 | | | | | NEED TO DO |
| Statistics & Probability: Making Inferences & Justifying Conclusions | Make inferences and justify conclusions from sample surveys, experiments, and observational studies. | Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling. | Algebra 2 | | | | | NEED TO DO |

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| Statistics & Probability: Using Probability to Make Decisions | Use probability to evaluate outcomes of decisions. | (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game). | | | | | | STEM |
| Statistics & Probability: Using Probability to Make Decisions | Calculate expected values and use them to solve problems. | (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution. | | | | | | STEM |
| Statistics & Probability: Using Probability to Make Decisions | Calculate expected values and use them to solve problems. | (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions. | | | | | | STEM |
| Statistics & Probability: Using Probability to Make Decisions | Calculate expected values and use them to solve problems. | (+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households? | | | | | | STEM |
| Statistics & Probability: Using Probability to Make Decisions | Calculate expected values and use them to solve problems. | (+) Develop a probability distribution for a random variable defined for a sample space in | | | | | | STEM |

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| | | which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes. | | | | | | |
| Statistics & Probability: Using Probability to Make Decisions | Use probability to evaluate outcomes of decisions. | (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator). | | | | | | STEM |
| Statistics & Probability: Using Probability to Make Decisions | Use probability to evaluate outcomes of decisions. | (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. | | | | | | STEM |
| Statistics & Probability: Using Probability to Make Decisions | Use probability to evaluate outcomes of decisions. | Find the expected payoff for a game of chance. For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant. | | | | | | STEM |
| Statistics & Probability: Using Probability to Make Decisions | Use probability to evaluate outcomes of decisions. | Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident. | | | | | | STEM |