Grade, Subject: Honors Algebra 2	
Strand (Unit): Unit 1 - The Language of Algebra	
Big Idea: Algebraic expressions	
PA Content Standards: A2.1.2.1 - Use exponents, roots, and/or absolute values to represent equivalent forms or to solve problems.	**PA Core Standards:** CC.2.2.HS.D.2 - Write expressions in equivalent forms to solve problems. CC.2.2.HS.D.8 - Apply inverse operations to solve equations or formulas for a given variable. CC.2.2.HS.D.9 - Use reasoning to solve equations and justify the solution method. CC.2.2.HS.D.10 - Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes, achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.
Essential Questions: • How is mathematics used to quantify, compare, represent, and model numbers? • How can expressions, equations, and inequalities be used to quantify, solve, model and/or analyze mathematical situations?	**Understandings (SWKT…):** ● Students will know how to 1. Determine if a number could be classified as real, whole, integer, rational, or irrational number. 2. Name the property illustrated by an equation (commutative, associative, identity, inverse, and distributive) 3. Identify when a compound inequality has all real solutions or no solution to a problem.

Vocabulary: • Expression • Negative exponents • Perfect square • Opposite • Reciprocal • Additive inverse • Multiplicative inverse • Term • Coefficient • Absolute value • Equation • Inequality • Compound inequality	**Skills (SWBAT…):** ● Students will be able to 1. Graph numbers on a number line and compare them. 2. Simplify and evaluate expressions, including those where substituting for a variable is necessary. 3. Solve equations and inequalities, including compound inequalities. For inequalities, sketch a graph of the solutions. 4. Solve absolute value equations, including checking for extraneous solutions. 5. Solve absolute value inequalities. Then, sketch a graph of the solutions.
Assessments: Homework Assignments Quizzes Test	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook

Elizabethtown Area School District Curriculum Date Adopted:

Grade, Subject: Honors Algebra 2	
Strand (Unit): Unit 2 - Linear Equations and Functions	
Big Idea: Linear equations, functions	

PA Content Standards:	**PA Core Standards:**
A2.1.3.2 - Describe and/or determine change. A2.2.1.1 - Analyze and/or use patterns or relations. A2.2.3.1 - Analyze and/or interpret data on a scatter plot and/or use a scatter plot to make predictions.	CC.2.2.HS.C.2 - Graph and analyze functions, and use their properties to make connections between the different representations. CC.2.2.HS.C.3 - Write functions or sequences that model relationships between two quantities. CC.2.2.HS.C.4 - Interpret the effects transformations have on functions, and find the inverses of functions. CC.2.2.HS.D.7 - Create and graph equations or inequalities to describe numbers or relationships. CC.2.2.HS.D.8 - Apply inverse operations to solve equations or formulas for a given variable. CC.2.2.HS.D.9 - Use reasoning to solve equations, and justify the solution method. CC.2.2.HS.D.10 - Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. CC.2.1.HS.F.4 - Use units as a way to understand problems and to guide the solution of multi-step problems. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes, achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.
Essential Questions: • How can expressions, equations, and inequalities be used to quantify, solve, model and/or analyze mathematical situations? • How can recognizing repetition or regularity assist in solving problems more efficiently? • How can patterns be used to describe relationships in mathematical situations? • How can data be organized and represented to provide insight into the relationship between quantities?	**Understandings (SWKT…):** ● Students will know how to 1. Determine whether a line is in slope-intercept, point-slope, or standard form. 2. Determine whether a given point is a solution to a linear equation. 3. Determine whether a scatter plot represents weak positive, strong positive, weak negative, strong negative, or no correlation and interpret its relationship.

Vocabulary:	**Skills (SWBAT…):**
• Intercept • Scatterplot • Inverse variation • Direct variation • Joint variation • Inverse of a function • Intervals • Linear regression • Independent variable • Dependent variable • Correlation	● Students will be able to… 1. Graph lines in slope-intercept or standard form. 2. Find the y-intercept and x-intercepts of a line. 3. Calculate the slope between two points. 4. Write the equation of a line in slope-intercept, point-slope, or standard form when given a slope and y-intercept, a slope and a point, or two points. 5. Transform equations from one form of a line to another. 6. Write equations and/or graph horizontal and vertical lines. 7. Write the equation of a line that is parallel or perpendicular to a given line. 8. Solve problems involving direct variation, inverse variation, and joint variation. 9. Write a linear equation that models a situation described in a word problem. 10. Use and interpret a linear model of a word problem. 11. Create a scatter plot with given data. 12. Draw a trend line for a given scatter plot, find its equation, and use it to solve problems. 13. Use the calculator to create a scatter plot and find the regression line. 14. Sketch the graph of a linear inequality. 15. Solve a linear inequality word problem.
Assessments: Homework Assignments Quizzes Test **Authentic Assessments** Walking Activity (Direct Variation) Scatter plot activity	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook

Elizabethtown Area School District Curriculum Date Adopted:

Grade, Subject: Honors Algebra 2	
Strand (Unit): Unit 3 - Systems of Linear Equations and Inequalities	
Big Idea: Systems of equations and inequalities	
PA Content Standards:	**PA Core Standards:**

A1.1.2.1 - Write, solve, and/or graph linear equations using various methods. A1.1.3.2 - Write, solve, and/or graph systems of linear inequalities using various methods.	CC.2.1.HS.F.1 - Apply and extend the properties of exponents to solve problems with rational exponents. CC.2.2.HS.D.2 - Write expressions in equivalent forms to solve problems. CC.2.2.HS.D.7 - Create and graph equations or inequalities to describe numbers or relationships. CC.2.2.HS.D.8 - Apply inverse operations to solve equations or formulas for a given variable. CC.2.2.HS.D.10 - Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes, achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.
Essential Questions: • How can equations and inequalities be used to quantify, solve, model and/or analyze mathematical situations? • What makes a tool and/or strategy appropriate for a given task? • How are relationships represented mathematically?	**Understandings (SWKT…):** ● Students will know how to 1. Determine whether a system is independent, inconsistent, or dependent without graphing. 2. Determine the possible solutions to maximize or minimize a variable in a given situation.
Vocabulary: • System of equations • Substitution • Elimination • Solution region • Linear Programming • Objective function • Constraints • Feasible region	**Skills (SWBAT…):** ● Students will be able to... 1. Solve a system of equations by graphing, substitution, or elimination. 2. Write and solve a system of equations that models a given situation. 3. Solve a system of equations with three variables. 4. Solve a system of linear inequalities, shading the solution region. 5. Determine the solution to maximize or minimize a variable's value in a given situation.

Assessments: Homework Assignments Quizzes Test **Authentic Assessments** Maximizing profit Minimizing cost	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook

Grade, Subject: Honors Algebra 2	
Strand (Unit): Unit 4 - Relations and Functions	
Big Idea: Relations and functions	
PA Content Standards: A2.2.1.1 - Analyze and/or use patterns or relations. A2.2.2.2 - Describe and/or determine families of functions.	**PA Core Standards:** CC.2.2.HS.C.1 - Use the concept and notation of functions to interpret and apply them in terms of their context. CC.2.2.HS.C.2 - Graph and analyze functions and use their properties to make connections between the different representations. CC.2.2.HS.C.3 - Write functions or sequences that model relationships between two quantities. CC.2.2.HS.C.4 - Interpret the effects transformations have on functions and find the inverses of functions. CC.2.2.HS.D.8 - Apply inverse operations to solve equations or formulas for a given variable. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes,

	achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.
Essential Questions: • What are relations and functions? • What operations can be done with functions? • What are inverse functions? • How are relationships represented mathematically?	**Understandings (SWKT…):** ● Students will know how to 1. Identify the domain and range of a relation. 2. Determine whether a relation is a function.
Vocabulary: • Intervals • Relation • Function • Domain & range	**Skills (SWBAT…):** ● Students will be able to… 1. Represent a relation as a set, table, graph, or mapping diagram. 2. Use the vertical line test to determine if a graph represents a function. 3. Write an equation in function notation. 4. Evaluate functions using function notation. 5. Complete operations (addition/subtraction/multiplication/division) using function notation, including using a variable as the input. 6. Complete function composition, including using a variable as the input. 7. Determine the inverse relation for a given relation (either as a set, table, graph, or mapping diagram) and whether it is a function. 8. Find the equation of the inverse of a function.
Assessments: Homework Assignments Quizzes Test	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook

Grade, Subject: Honors Algebra 2	
Strand (Unit): Unit 5 - Quadratics	
Big Idea: Quadratics, factoring, imaginary and complex numbers	
PA Content Standards: A2.1.1.1 - Represent and/or use imaginary numbers in equivalent forms (e.g., square roots and exponents). A2.1.1.2 - Apply the order of operations in computation and in problem solving situations. A2.1.2.2 - Simplify expressions involving polynomials. A2.1.3.1 - Write and/or solve non-linear equations using various methods. A2.2.1.1 - Analyze and/or use patterns or relations. A2.2.2.1 - Create, interpret, and/or use polynomial, exponential, and/or logarithmic functions and their equations, graphs, or tables.	**PA Core Standards:** CC.2.2.HS.D.1 - Interpret the structure of expressions to represent a quantity in terms of its context CC.2.2.HS.D.2 - Write expressions in equivalent forms to solve problems. CC.2.2.HS.D.4 - Understand the relationship between zeros and factors of polynomials to make generalizations about functions and their graphs. CC.2.2.HS.D.7 - Create and graph equations or inequalities to describe numbers or relationships. CC.2.2.HS.D.8 - Apply inverse operations to solve equations or formulas for a given variable. CC.2.2.HS.D.10 - Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. CC.2.2.HS.C.1 – Use the concept and notation of functions to interpret and apply them in terms of their context. CC.2.2.HS.C.2 – Graph and analyze functions and use their properties to make connections between the different representations. CC.2.2.HS.C.5 - Construct and compare linear, quadratic, and exponential models to solve problems. CC.2.1.HS.F.6 - Extend the knowledge of arithmetic operations and apply to complex numbers. CC.2.1.HS.F.7 - Apply concepts of complex numbers in polynomial identities and quadratic equations to solve problems. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes, achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation

	opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.
Essential Questions: • How are relationships represented mathematically? • How can recognizing repetition or regularity assist in solving problems more efficiently? • How can data be organized and represented to provide insight into the relationship between quantities? • What are quadratic functions and how can they be used to solve real-world problems? • What are imaginary and complex numbers and how are they used?	**Understandings (SWKT…):** ● Students will know how to 1. Determine whether an equation represents a quadratic function. 2. Determine the quadratic, linear, and constant term of a quadratic. 3. Determine whether a parabola opens up or down without graphing it and whether the vertex is a maximum or minimum. 4. Determine the vertex, axis of symmetry, and direction of opening for a parabola in standard or vertex form. 5. Use the discriminant to determine the number and types of solutions for a quadratic function.
Vocabulary: • Imaginary number • Complex number • Quadratic formula • Quadratic function • Quadratic regression • Perfect square • Intercept form • Vertex form • Axis of symmetry • Discriminant • Radical • Parabola	**Skills (SWBAT…):** ● Students will be able to... 1. Sketch a graph of a parabola in vertex or standard form. 2. Find the equation of a quadratic function when given a graph, a vertex and a point, or three points on the parabola. 3. Use the equation of a quadratic function as mathematical models. 4. Use the calculator to find the vertex, x-intercepts, y-intercept, and the equation when given three points. 5. Transform parabolas between standard and vertex form. 6. Factor an expression, including GCF. 7. Solve quadratic equations by taking the square root, factoring, or quadratic formula, including word problems. 8. Calculate the discriminant. 9. Simplify radicals using imaginary numbers. 10. Identify and graph complex numbers on the complex coordinate plane. 11. Find the additive inverse and complex conjugate of a complex number. 12. Add, subtract, and multiply complex numbers.

Assessments: Homework Assignments Quizzes Test **Authentic Assessments** Basketball shot (Quadratics preview)	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook

Elizabethtown Area School District Curriculum Date Adopted:

Grade, Subject: Honors Algebra 2	
Strand (Unit): Unit 6 - Polynomials and Polynomial Functions	
Big Idea: Polynomials and polynomial functions	
PA Content Standards: A2.1.2.2 - Simplify expressions involving polynomials. A2.2.1.1 - Analyze and/or use patterns or relations.	**PA Core Standards:** CC.2.2.HS.D.2 - Write expressions in equivalent forms to solve problems. CC.2.2.HS.D.3 - Extend the knowledge of arithmetic operations and apply to polynomials. CC.2.2.HS.D.4 - Understand the relationship between zeros and factors of polynomials to make generalizations about functions and their graphs. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes, achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.

Essential Questions:	**Understandings (SWKT…):**
• What is a polynomial? • What operations can be completed with polynomials? • How can polynomial equations be solved?	● Students will know how to 1. Name a polynomial expression based on their number of terms. 2. Determine the degree of a polynomial. 3. Determine possible rational solutions to a polynomial.
Vocabulary: • Binomial • Trinomial • Polynomial • Product of powers • Quotient of powers • Power of a product • Power of a quotient • Power of a power • Zero property • Negative exponent • Remainder theorem • Fundamental theorem of Algebra	**Skills (SWBAT…):** ● Students will be able to... 1. Add, subtract, and multiply polynomials. 2. Write the equation of a polynomial in standard form when given the zeros. 3. Find the perimeter, area, or volume of a figure. 4. Factor a polynomial completely and find its zeros. 5. Use long division or synthetic division to divide polynomials. 6. Factor by using synthetic division, sum and difference of cubes, or quadratic pattern. 7. Solve a polynomial equation.
Assessments: Homework Assignments Quizzes Test	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook

Grade, Subject: Honors Algebra 2	

Strand (Unit): Unit 7 - Radicals	
Big Idea: Radicals	
PA Content Standards: A2.1.2.1 - Use exponents, roots, and/or absolute values to represent equivalent forms or to solve problems. A2.1.3.1 - Write and/or solve non-linear equations using various methods.	**PA Core Standards:** CC.2.1.HS.F.1 - Apply and extend the properties of exponents to solve problems with rational exponents. CC.2.2.8.B.1 - Apply concepts of radicals and integer exponents to generate equivalent expressions. CC.2.1.HS.F.1 - Apply and extend the properties of exponents to solve problems with rational exponents. CC.2.2.HS.D.2 - Write expressions in equivalent forms to solve problems. CC.2.2.HS.D.8 - Apply inverse operations to solve equations or formulas for a given variable. CC.2.2.HS.D.9 - Use reasoning to solve equations and justify the solution method. CC.2.2.HS.D.10 - Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes, achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.
Essential Questions: • What are exponents and what properties do they have? • What are radicals and how can they be simplified and operated on? • How can radical equations be solved?	**Understandings (SWKT…):** ● Students will know how to 1. Determine the number of real roots of a radical.

Vocabulary:	**Skills (SWBAT…):**
• Radical function • Radicand • Index • Reciprocal function • Composition function • Parent function	● Students will be able to... 1. Use the properties of exponents to simplify expressions (power-to-a-power, multiplying like bases, dividing like bases, and negative exponents). 2. Find all of the real roots of a radical. 3. Simplify radical expressions completely (including with variables). 4. Complete operations with radicals (multiply, divide, rationalize). 5. Add, subtract, and multiply binomial radical expressions. 6. Transform between rational exponents and radical expressions. 7. Simplify expressions with rational exponents (no negative or rational exponents left in answer). 8. Complete operations with variables with rational exponents. 9. Solve radical equations for a variable. 10. Calculate a composition function. 11. Describe and/or graph the transformation of parent functions.
Assessments: Homework Assignments Quizzes Test	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook

Grade, Subject: Honors Algebra 2	
Strand (Unit): Unit 8 - Exponential Functions and Logarithms	
Big Idea:	

Exponential functions and logarithms	
PA Content Standards: A2.1.2.1 - Use exponents, roots, and/or absolute values to represent equivalent forms or to solve problems. A2.1.3.1 - Write and/or solve non-linear equations using various methods. A2.2.2.1 - Create, interpret, and/or use polynomial, exponential, and/or logarithmic functions and their equations, graphs, or tables.	**PA Core Standards:** CC.2.1.HS.F.1 - Apply and extend the properties of exponents to solve problems with rational exponents. CC.2.2.HS.D.2 - Write expressions in equivalent forms to solve problems. CC.2.2.HS.D.8 - Apply inverse operations to solve equations or formulas for a given variable. CC.2.2.HS.D.9 - Use reasoning to solve equations and justify the solution method. CC.2.2.HS.D.10 - Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes, achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.
Essential Questions: • What are exponential functions and how can their equations be found? • What are logarithms, what are their properties, and how can their equations be solved?	**Understandings (SWKT…):** ● Students will know how to 1. Determine whether a function represents exponential growth or decay and identify the growth/decay factors and rates.
Vocabulary: • Common logarithm • Exponential function • Exponential decay • Exponential growth • Natural logarithm • Exponential regression • Expanding • Condensing	**Skills (SWBAT…):** ● Students will be able to… 1. Write the equation of an exponential function given its graph or two points. 2. Transform equations between exponential and logarithmic forms. 3. Evaluate logarithms. 4. Use properties of logs to simplify and expand logarithms. 5. Utilize the change of base formula for logarithms to solve problems. 6. Solve equations involving logarithms. 7. Find an exponential model for a given situation when given the initial amount and the growth/decay factors, growth/decay rates, or when given two points. 8. Solve exponential equations and interpret the information.

Assessments: Homework Assignments Quizzes Test **Authentic Assessments**: Compound interest/exponential word problems	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook

Elizabethtown Area School District Curriculum Date Adopted:

Grade, Subject: Honors Algebra 2	
Strand (Unit): Unit 9 - Rational Expressions	
Big Idea: Rational expressions	
PA Content Standards: A2.1.2.2 - Simplify expressions involving polynomials.	**PA Core Standards:** CC.2.2.HS.D.1 - Interpret the structure of expressions to represent a quantity in terms of its context. CC.2.2.HS.D.2 - Write expressions in equivalent forms to solve problems. CC.2.2.HS.D.3 - Extend the knowledge of arithmetic operations and apply to polynomials. CC.2.2.HS.D.4 - Understand the relationship between zeros and factors of polynomials to make generalizations about functions and their graphs. CC.2.2.HS.D.6 - Extend the knowledge of rational functions to rewrite in equivalent forms. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes,

	achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.
Essential Questions: • What makes an expression undefined? • What are rational expressions and what operations can be done with them?	**Understandings (SWKT…):** ● Students will know how to 1. State restrictions on the variable for a rational expression.
Vocabulary: • Rational functions • Rational expressions	**Skills (SWBAT…):** ● Students will be able to… 1. Simplify rational expressions. 2. Multiply, divide, add, and subtract rational expressions (including restrictions on the variable). 3. Simplify complex fractions.
Assessments: Homework Assignments Quizzes Test	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook

Grade, Subject: Honors Algebra 2	
Strand (Unit): Unit 10 - Probability and Statistics	
Big Idea: Probability and statistics	
PA Content Standards: A2.2.3.2 - Apply probability to practical situations.	**PA Core Standards:** CC.2.4.HS.B.1 - Summarize, represent, and interpret data on a single count or measurement variable. CC.2.4.HS.B.2 - Summarize, represent, and interpret data on two categorical and quantitative variables. CC.2.4.HS.B.4 - Recognize and evaluate random processes underlying statistical experiments. CC.2.4.HS.B.5 - Make inferences and justify conclusions based on sample surveys, experiments, and observational studies. CC.2.4.HS.B.6 - Use the concepts of independence and conditional probability to interpret data. CC.2.4.HS.B.7 - Apply the rules of probability to compute probabilities of compound events in a uniform probability model. **Career Standards**: 13.1.11.A: Relate careers to individual interests, abilities and aptitudes. 13.1.11.B: Analyze career options based on personal interests, abilities, aptitudes, achievements and goals. 13.1.11.F: Analyze the relationship between career choices and career preparation opportunities. 13.1.11.H: Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests. 13.3.11.B: Evaluate team member roles to describe and illustrate active listening techniques.
Essential Questions: • What is probability and how is it found? • How can orders and groups of items be counted? • How can data be analyzed and interpreted? • What are standard deviations and z-scores, how are they found, and	**Understandings (SWKT…):** 1. Describe the sample space in a given situation. 2. Determine whether two events are independent or dependent. 3. Determine whether two events are mutually exclusive or overlapping.

what do they mean?	
Vocabulary: • Compound events • Dependent events • Independent events • Mutually exclusive • Outcomes • Permutation • Combination • Probability • Standard deviation • Binomial Distribution • Normal curve • Empirical Rule	**Skills (SWBAT…):** ● Students will be able to... 1. Find the experimental and theoretical probability of an event, including multiple events. 2. Calculate odds in favor or odds against for a given situation. 3. Transform between probability and odds. 4. Solve problems involving Geometric probability. 5. Use the Fundamental Counting Principle, Permutations, and Combinations to solve problems. 6. Calculate the mean, median, mode, range, quartiles, and interquartile range for a set of data. 7. Draw a box-and-whisker plot for a given set of data. 8. Find the standard deviation and z-score for a given data set. 9. Make approximations using the Standard Normal Curve.
Assessments: Homework Assignments Quizzes Test **Authentic Assessments**: Geometric probability stations (Carnival games activity) Lollipop Probability activity (intro to probability)	**Resources:** PA Common Core Standards Teacher created materials Schoology Algebra 2 textbook