

# CW High School

## Algebra II A

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## Algebra II A

### 1. Properties, Equations, and Absolute Values (20.00%)

#### Learning Targets

1.1 I can use the properties of real numbers and the order of operations to evaluate and simplify expressions and formulas.

Learning Target	Descriptor	Definition
4	Proficient	I can use the properties of real numbers and the order of operations to evaluate and simplify expressions and formulas.
3	Developing	I can substitute numbers into a formula or expression and simplify my answer using the order of operations.
2	Basic	I can use the order of operations to simplify expressions.
1	Minimal	I can substitute numbers into a formula or expression.
0	No Evidence	No evidence shown.

1.2 I can translate verbal expressions into algebraic expressions and vice-versa, solve an algebraic equation for a different variable and solve multi-step equations using math properties.

Learning Target	Descriptor	Definition
4	Proficient	I can translate verbal expressions into algebraic expressions and vice-versa, solve an algebraic equation for a different variable and solve multi-step equations using math properties.
3	Developing	I can translate algebraic equations into verbal expressions and solve a two step equation using math properties.
2	Basic	I can translate a verbal expression into an algebraic equation and solve a one step equation.
1	Minimal	I can translate a verbal expression into an algebraic expression.
0	No Evidence	No evidence shown.

1.3 I can solve absolute value equations and inequalities, compound inequalities, evaluate absolute value expressions, graph solutions and write solutions in interval notation where appropriate.

Learning Target	Descriptor	Definition
4	Proficient	I can solve absolute value equations and inequalities, compound inequalities, evaluate absolute value expressions, graph solutions and write solutions in interval notation where appropriate.
3	Developing	I can solve an absolute value inequality and a compound inequality and graph the solution.
2	Basic	I can solve a multi-step absolute value equation.
1	Minimal	I can evaluate an absolute value expression and solve a one step absolute value equation.
0	No Evidence	No evidence shown.

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### 2. Lines, Plots, and Piecewise Functions (20.00%)

#### Learning Targets

2.1 I can identify a linear function, translate an equation to standard form and find its x and y intercepts (roots and zeros).

Learning Target	Descriptor	Definition
4	Proficient	I can identify a linear function, translate an equation to standard form and find its x and y intercepts (roots and zeros).
3	Developing	I can translate a linear function into standard form.
2	Basic	I can identify a linear function by its equation.
1	Minimal	I can describe a linear function.
0	No Evidence	No evidence shown.

2.2 I can find the slope (rate of change) of a function through two points or from its graph and write an equation to represent it, a line parallel to it, or perpendicular to it.

Learning Target	Descriptor	Definition
4	Proficient	I can find the slope (rate of change) of a function through two points or from its graph and write an equation to represent it, a line parallel to it, or perpendicular to it.
3	Developing	I can describe the slopes of parallel and perpendicular lines.
2	Basic	I can calculate the slope of a line given 2 points.
1	Minimal	I can find the slope of a line from its graph.
0	No Evidence	No evidence shown.

2.3 I can utilize scatterplots and lines of regression to write and analyze a linear model for data and describe the data's correlation.

Learning Target	Descriptor	Definition
4	Proficient	I can utilize scatterplots and lines of regression to write and analyze a linear model for data and describe the data's correlation.
3	Developing	I can use two points to write a linear model to describe data on a scatterplot.
2	Basic	I can estimate and draw a line of best fit on a scatterplot and describe the correlation.
1	Minimal	I can draw a scatterplot.
0	No Evidence	No evidence shown.

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2.4 I can graph a piecewise function, step function, and can write a piecewise function to describe a graph.

Learning Target	Descriptor	Definition
4	Proficient	I can graph a piecewise function, step function, and can write a piecewise function to describe a graph.
3	Developing	I can graph a piecewise function
2	Basic	I can sketch a step function.
1	Minimal	I can match a piecewise function to its graph.
0	No Evidence	No evidence shown.

2.5 I can utilize parent graphs to sketch graphs of various functions and inequalities and their translations, dilations, and reflections.

Learning Target	Descriptor	Definition
4	Proficient	I can utilize parent graphs to sketch graphs of various functions and inequalities and their translations, dilations, and reflections.
3	Developing	I can recognize the parent graph of a function, identify any transformations, and sketch it.
2	Basic	I can write an equation to describe a constant, absolute value, linear or quadratic function from its graph.
1	Minimal	I can identify the type of function (constant, absolute value, linear, or quadratic) by its graph.
0	No Evidence	No evidence shown.

### 3. Systems of Equations Matrices (20.00%)

#### Learning Targets

3.1 I can solve 2x2 systems of equations graphically, using substitution, elimination, inverse matrices, and Cramer's Rule.

Learning Target	Descriptor	Definition
4	Proficient	I can solve 2x2 systems of equations graphically, using substitution, elimination, inverse matrices, and Cramer's Rule.
3	Developing	I can solve a 2x2 system using Cramer's Rule.
2	Basic	I can solve a 2x2 system by substitution and elimination.
1	Minimal	I can solve a 2x2 system by graphing
0	No Evidence	No evidence shown.

3.2 I can solve systems of inequalities graphically, locate the vertices of the enclosed region and find the minimums and maximums of a function dependent on the enclosed region.

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Learning Target	Descriptor	Definition
4	Proficient	I can solve systems of inequalities graphically, locate the vertices of the enclosed region and find the minimums and maximums of a function dependent on the enclosed region.
3	Developing	I can write equations for constraints and for a maximized function.
2	Basic	I can locate the vertices of an enclosed region.
1	Minimal	I can shade a region enclosed by inequalities.
0	No Evidence	No evidence shown.

### 3.3 I can solve a 3x3 system using elimination, Cramer's Rule, and by using an inverse matrix on a grapher.

Learning Target	Descriptor	Definition
4	Proficient	I can solve a 3x3 system using elimination, Cramer's Rule, and by using an inverse matrix on a grapher.
3	Developing	I can solve a 3x3 system using elimination.
2	Basic	I can find the determinant of a 3x3 matrix.
1	Minimal	I can solve a 3x3 system using an inverse on a grapher.
0	No Evidence	No evidence shown.

### 3.4 I can organize data into matrices, add, subtract and multiply matrices, find determinants and the inverse of a matrix, and multiply a matrix by a scalar.

Learning Target	Descriptor	Definition
4	Proficient	I can organize data into matrices, add, subtract and multiply matrices, find determinants and the inverse of a matrix, and multiply a matrix by a scalar.
3	Developing	I can multiply matrices.
2	Basic	I can find the determinant and of a 2x2 matrix
1	Minimal	I can add, subtract, and multiply a matrix by a scalar.
0	No Evidence	No evidence shown.

## 4. Quadratic Equations and Complex Numbers (20.00%)

### Learning Targets

#### 4.1 I can graph a quadratic function, locate the vertex, roots, axis of symmetry and any maximum or minimum values.

Learning Target	Descriptor	Definition
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Learning Target	Descriptor	Definition
4	Proficient	I can graph a quadratic function, locate the vertex, roots, axis of symmetry and any maximum or minimum values.
3	Developing	I approximate roots of a quadratic function from a table.
2	Basic	I can locate the y-coordinate of the vertex and sketch a graph of a quadratic function.
1	Minimal	I can find the x-coordinate of the vertex, the y-intercept and the line of symmetry of a quadratic function.
0	No Evidence	No evidence shown.

### 4.2 I can solve a quadratic equation by graphing, factoring, completing the square, and using the quadratic formula.

Learning Target	Descriptor	Definition
4	Proficient	I can solve a quadratic equation by graphing, factoring, completing the square, and using the quadratic formula.
3	Developing	I can complete the square to solve a quadratic equation.
2	Basic	I can use the quadratic formula to solve a quadratic equation.
1	Minimal	I can factor and use the zero product property to solve a quadratic equation.
0	No Evidence	No evidence shown.

### 4.3 I can perform operations with pure imaginary numbers, complex numbers, and utilize complex solutions to solve quadratic equations.

Learning Target	Descriptor	Definition
4	Proficient	I can perform operations with pure imaginary numbers, complex numbers, and utilize complex solutions to solve quadratic equations.
3	Developing	I can simplify imaginary and complex numbers by recognizing powers of $i$ .
2	Basic	I can multiply, add, and subtract complex or imaginary numbers.
1	Minimal	I can write the square root of negative numbers as imaginary.
0	No Evidence	No evidence shown.

### 4.4 I can write quadratic functions and inequalities in vertex form and transform quadratic functions to vertex form and use the graphs to solve quadratic inequalities.

Learning Target	Descriptor	Definition
4	Proficient	I can write quadratic functions and inequalities in vertex form and transform quadratic functions to vertex form and use the graphs to solve quadratic inequalities.

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Learning Target	Descriptor	Definition
3	Developing	I can transform a quadratic function from standard to vertex form and vice-versa.
2	Basic	I can write the equation of a quadratic graph in vertex form.
1	Minimal	I can sketch the graph of a quadratic function in vertex form.
0	No Evidence	No evidence shown.

### 5. Polynomials and Roots (20.00%)

#### Learning Targets

#### 5.1 I can add, subtract, and multiply polynomials and use long division and synthetic division to divide polynomials.

Learning Target	Descriptor	Definition
4	Proficient	I can add, subtract, and multiply polynomials and use long division and synthetic division to divide polynomials.
3	Developing	I can simplify division of polynomials using long division.
2	Basic	I can simplify negative exponents, powers of products and quotients, and zero powers.
1	Minimal	I can use exponent properties to simplify multiplication, division, and powers of powers.
0	No Evidence	No evidence shown.

#### 5.2 I can state the number and approximate the location of real zero's (roots) of a polynomial, estimate maximums and minimums, determine whether it is even or odd based on its graph, and describe its end behavior.

Learning Target	Descriptor	Definition
4	Proficient	I can state the number and approximate the location of real zero's (roots) of a polynomial, estimate maximums and minimums, determine whether it is even or odd based on its graph, and describe its end behavior.
3	Developing	I can sketch a reasonable graph of a function based on its degree and leading coefficient by analyzing end behaviors.
2	Basic	I can state whether a polynomial is even or odd by its graph or its equation.
1	Minimal	I can recognize a polynomial and state the degree and leading coefficient of it.
0	No Evidence	No evidence shown.

#### 5.3 I can solve a higher degree polynomial equation by rewriting the equation in quadratic form, substituting, and then factoring.

Learning Target	Descriptor	Definition
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Learning Target	Descriptor	Definition
4	Proficient	I can solve a higher degree polynomial equation by rewriting the equation in quadratic form, substituting, and then factoring.
3	Developing	I can rewrite a higher degree polynomial in quadratic form.
2	Basic	I can solve a polynomial equation using the zero-product property.
1	Minimal	I can factor a common term from a polynomial and factor using a diamond.
0	No Evidence	No evidence shown.

Submitted on 7/8/2019 by