

CURRICULUM MAP	
School For Excellence	Course: Algebra I Name(s): OWUSU
	SEPTEMBER
Essential Questions:	1) What does it mean to balance an equation? 2) What makes an equation linear? 3) How does slope contribute to the relationship expressed by a linear equation?
Focus/Unit:	Data collection and graphing of linear equations/function
Content	Scatter plot, linear graphs, slope of a line, function and relations, correlations, line of best fit, equation of a line, slope-intercept and point slope formulas, solving linear equations and functions/relations
Common Core Standards	Solving linear equation in one variable; scatter plot and trend line; lines in coordinate planes; relations and function; linear equations in two variables
Ongoing Formative Assessments:	Quizzes + Chapter Tests + Exit Slip + Unit Packet
Summative Assessment:	End of Unit Exam & State Assessment (NY Regents)
Skills Necessary For Performance Tasks	Solving linear equation in one variable; scatter plot and trend line; lines in coordinate planes; relations and function; linear equations in two variables. Students explain how linear equations portray mathematical information. Students explain how graphs portray mathematical information/ equations.

<p>What specific literacy strategies will be used?</p>	<p>Exit Slip, Vocabulary Words, Explaining Formulas</p>
<p>What examples of art will be used?</p>	<p>Create Mathematical Images & Unit Project</p>
<p>What types of technology will be incorporated?</p>	<p>Graphing calculator, SMARTBoard, iPad and overhead projector. Literacy strategies Exit slips and students will use the annotation skills to solve word problems and create images to gain insight in solving word problems.</p>
	<p>OCTOBER</p>
<p>Essential Questions:</p>	<p>What scales do you need to graph the data in a table? How do inequalities compare/contrast to equations? What is a system of equations? How can knowing about the intersection point help us make the decision about the problem?</p>

Focus/Unit:	<p>Solving linear or system of equations/inequalities algebraically and graphically.</p>
Content	<p>Solving system of linear equations/inequalities using tables and algebraically recognizing and obtaining the solution set. Special case: No solution set. System with one or two equations/inequalities.</p>
Common Core Standards/Skills:	<p>Solving linear equations/inequalities in one variable algebraically. Solving system of equations/inequalities. Linear inequalities in two variables/ Linear equations graphically</p>
Ongoing Formative Assessments:	<p>Quizzes + Chapter Tests + Exit Slip + Unit Packet</p>
Summative Assessment:	<p>End of Unit Exam & State Assessment (NY Regents)</p>

<p>Skills Necessary For Performance Tasks:</p>	<p>C. Graphing 1(S.ID.7),(F.IF.I)(A.A.32&33&37) (A.G.3)</p> <ol style="list-style-type: none"> 1. Graphing Linear Equations <ol style="list-style-type: none"> a) Graphing a line using table of values. b) Definition of a function/relation, in terms of: <ol style="list-style-type: none"> i) Ordered pairs/ Coordinates ii) Table of values c) Vertical line test d) Slope of a line <ol style="list-style-type: none"> i) Slope from graph ii) Slope from formula e) Slope-intercept form f) Equation of a line g) Point-Slope Formula <p>D. Graphing 2</p> <ol style="list-style-type: none"> 1. Graphing Linear Inequalities (A.CED.1),(A.REI.3),(A.A.21&24) 2. Graphing systems of linear inequalities (A.CED.3),(A.REI.12),(A.G.6) Finding the solution set from the graph 3. Graphing Quadratic equations/functions(A.G.8&10),(A.A.41) Finding the roots from the graph and finding the axis of symmetry and coordinates of the vertex by completing squares *Solving quadratic equations by factoring(A.REI.4.b)(A.APR.2) 4. Graphing system of equations (A.REI.6),(A.G.7)
<p>What specific literacy strategies will be used?</p>	<p>Exit Slip, Vocabulary Words, Explaining Formulas</p>

What examples of art will be used?	Create Mathematical Images & Unit Project
What types of technology will be incorporated?	Calculator
NOVEMBER	
Essential Questions:	How does Algebra help someone understand investment portfolios? How does the quadratic curve compare and contrast to the absolute value graph? What makes a graph exponential? How are linear functions and absolute value functions alike?
Focus/Unit:	Solving quadratic equations graphically and algebraically

Content	Graph of other functions, quadratic functions/equations, exponential, absolute value, factoring binomials and trinomials, exponential growth and decay curves
Common Core Standards/Skills:	Solving system of equations algebraically; graphing exponential equations; graphing absolute value functions; graphing system of quadratic and linear equations
Ongoing Formative Assessments:	Quizzes + Chapter Tests + Exit Slip + Unit Packet
Summative Assessment:	End of Unit Exam & State Assessment (NY Regents)

Skills Necessary For Performance Tasks:	<p>5. Graphing system of linear and Quadratic equations(A.REI.7)(F.IF.7a) Identifying the points of intersection as the solution set</p> <p>6. Graphing exponential Functions /exponential equations(A.CED.I),(F.IF.7.b)</p> <p>7. Graphing Absolute Value function and evaluating absolute value expressions(F.IF.7b) *** Solving Absolute value equations Note-Use the graphing calculator to generate table of values before graphing</p> <p>8. Graphing frequency histogram and Cumulative frequency Histogram(S.ID.I),(S.ID.5),(A.S.5&9)</p> <p>9. Constructing and interpreting Box and whisker plot using the five number summaries Minimum point, lower quartile, medium quartile, upper quartile, and max point.(S.ID.I),(S.CP.4),(A.S.5&6)</p>
What specific literacy strategies will be used?	<p>Exit Slip, Vocabulary Words, Explaining Formulas</p>
What examples of art will be used?	<p>Create Mathematical Images & Unit Project</p>
What types of technology will be incorporated?	<p>calculator, SMARTboard</p>

DECEMBER

Essential Questions:	How do numbers help us in our everyday life? How can we identify the type of function just based upon the behavior of the output? How do we write large/small numbers in simplest forms?
Focus/Unit:	Scientific notation, solve quadratic equations by factoring
Content	Quadratic equations, algebraic fractions (addition and subtraction), factoring binomial/trinomials
Common Core Standards/Skills:	Number Theory, Quadratic function and parabolas

Ongoing Formative Assessments:	<p>Quizzes + Chapter Tests + Exit Slip + Unit Packet</p>
Summative Assessment:	<p>End of Unit Exam & State Assessment (NY Regents)</p>
Skills Necessary For Performance Tasks:	<ol style="list-style-type: none"> 1. Solving linear equation in one variable and translating verbal statements into algebraic expressions(A.CED.I),(A.A.I) 2. Adding and subtracting fractions with same/different denominators (A.APR.I&7),(A.A13&17) 3. Solving fractional equations(A.CED.I),(A.A.25) 4. Solving literal equations 5. Solving One-step inequalities(A.CED.I) 6. Solving multi-steps inequalities(A.CED.I) 7. Multiplying and dividing Monomials(A.APR.I) 8. Scientific notation (large and small numbers) 9. Adding and subtracting polynomials(A.APR.I) 10. Solving rational equations(F.IF.7.d).(A.A15&16) 11. Undefined expressions(A.A15&16) 12. Solving system of equations by elimination and substitution(A.REI.6)
What specific literacy strategies will be used?	<p>Exit Slip, Vocabulary Words, Explaining Formulas</p>

What examples of art will be used?	Create Mathematical Images & Unit Project
What types of technology will be incorporated?	Calculators, SMARTboard
JANUARY	
Essential Questions:	How are data classified?
Focus/Unit:	Probability/Statistics

Content	Set Theory, subsets, sample space union /intersection or complement, conditional probability, construct and interpret two-way frequency table ,histogram/box and whisker plot, categorizing data
Common Core Standards/Skills:	Construct and interpret histogram/box and whisker plot, measures of central tendency, quartiles and percentiles, representing data graphically, using counting methods to solve word problems, permutation and factorial notation.
Ongoing Formative Assessments:	Quizzes + Chapter Tests + Exit Slip + Unit Packet
Summative Assessment:	End of Unit Exam & State Assessment (NY Regents)

Skills Necessary For Performance Tasks:	<ol style="list-style-type: none"> 1. Set theory(S.CP.I) 2. Set-builder notation(A.A.29) 3. Roster form 4. Interval form 5. Venn diagram 6. Operation of sets <ul style="list-style-type: none"> Union(A.A.31) Intersection(A.A.31) Complement(A.A.30)
What specific literacy strategies will be used?	Exit Slip, Vocabulary Words, Explaining Formulas
What examples of art will be used?	Create Mathematical Images & Unit Project
What types of technology will be incorporated?	Graphing calculator, SMARTBoard, Computers for research

FEBRUARY**Essential Questions:**

What is the maximum delivery size for packages sent by the United States postal service? How do different shapes of geometrical objects help us in our daily lives? What is the best shape of packaging processed food in the super market?

Focus/Unit:

Geometry and Measurements

Content

Measurement and error, Perimeter/Circumference, Volume and surface area of rectangular prisms, lateral and surface area/volume of cylinders and cones.

Common Core Standards

Volume of solids or three dimensional objects, Areas/perimeter/circumference of two dimensional objects

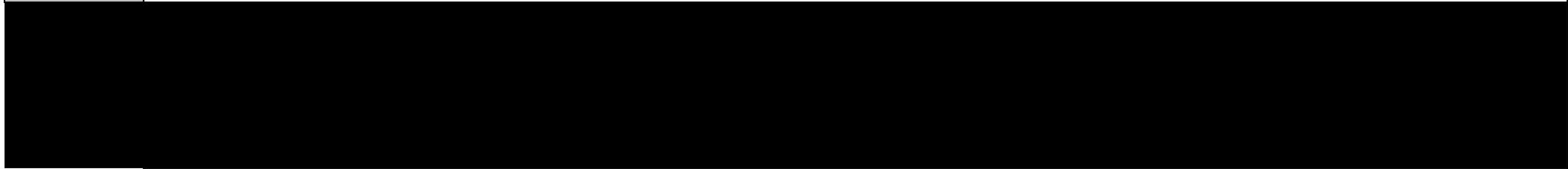
Ongoing Formative Assessments:	<p>Quizzes + Chapter Tests + Exit Slip + Unit Packet</p>
Summative Assessment:	<p>End of Unit Exam & State Assessment (NY Regents)</p>
Skills Necessary For Performance Tasks:	<p>Volume and surface Area of solids/three-dimensional figures (Project)(G.GMD.1&3),(A.G.2)</p>
What specific literacy strategies will be used?	<p>Exit Slip, Vocabulary Words, Explaining Formulas</p>
What examples of art will be used?	<p>Create Mathematical Images & Unit Project</p>

What types of technology will be incorporated?	calculator, SMARTboard, overhead projector
MARCH	
Essential Questions:	What is the tallest building in NYC? How can you calculate the height of a tall building?
Focus/Unit:	Right triangle trigonometry and Pythagorean theorem
Content	Pythagorean rule, measurement of angles, right triangle, two legs (opposite and adjacent) hypotenuse, Trigonometric ratios (sine, cosine, and tangent), angle of elevation/depression

Common Core Standards/Skills:	Right triangle trigonometry and Pythagorean theorem
Ongoing Formative Assessments:	Quizzes + Chapter Tests + Exit Slip + Unit Packet
Summative Assessment:	End of Unit Exam & State Assessment (NY Regents)
Skills Necessary For Performance Tasks:	Pythagorean rule and Trigonometry(F.TF.3),(A.2.A.57&58)
What specific literacy strategies will be used?	Exit Slip, Vocabulary Words, Explaining Formulas

What examples of art will be used?	Create Mathematical Images & Unit Project
What types of technology will be incorporated?	Calculator, SMARTboard, overhead projectors
APRIL	
Essential Questions:	What do we mean by real numbers? What do we mean by imaginary numbers? What are the square roots of negative numbers?
Focus/Unit:	Complex number, Composition of functions/inverse functions

Content	The meaning of i , complex numbers and conjugates, operations of complex numbers, real and imaginary numbers, composite functions and inverse functions, exponential equations and logarithmic equations, logarithmic laws, simplifying complex fractions (rational expression). Radical equations
Common Core Standards/Skills:	Complex numbers and conjugates, the meaning of i , operations with complex numbers/fractions.
Ongoing Formative Assessments:	Quizzes + Chapter Tests + Exit Slip + Unit Packet
Summative Assessment:	End of Unit Exam & State Assessment (NY Regents)

Skills Necessary For Performance Tasks:	1. complex numbers(N.CN.2&3) 2. Composition function(F.BF.I.c&F.BF.4.b)
What specific literacy strategies will be used?	Exit Slip, Vocabulary Words, Explaining Formulas
What examples of art will be used?	Create Mathematical Images & Unit Project
What types of technology will be incorporated?	graphing calculator and SMARTboard
	
MAY	



Essential Questions:	What is the nature of sea waves? What is the best unit of angle measurement? What are trigonometric ratios?
Focus/Unit:	Advanced Trigonometry and Trigonometric graphs
Content	Pythagorean rule and trigonometric identities, conversion of degrees to radians, area of scalene triangle, the sine and cosine laws, sigma notation, trigonometric graphs, Pythagorean identity
Common Core Standards/Skills:	trigonometric equations and identities, circular functions, sine and cosine graphs
Ongoing Formative Assessments:	Quizzes + Chapter Tests + Exit Slip + Unit Packet

Summative Assessment:	<p>End of Unit Exam & State Assessment (NY Regents)</p>
Skills Necessary For Performance Tasks	<ol style="list-style-type: none"> 1. Pythagorean rule and Trigonometry(F.TF.3),(A.2.A.57&58) 2. Conversion of degrees to Radians(.M.2)F.TF..I),(A2 3. The sine Law(G.SRT.10) 4. Finding area of scalene triangle and its applications 5. The cosine lawG.SRT.110),(A2.A.73&74) <p>Sigma notation or summation</p>
What specific literacy strategies will be used?	<p>Exit Slip, Vocabulary Words, Explaining Formulas</p>
What examples of art will be used?	<p>Create Mathematical Images & Unit Project</p>
What types of technology will be incorporated?	<p>graphing calculator, SMARTboard</p>

JUNE

Essential Questions:

What is the largest digit of counting numbers? What patterns do numbers have?

Focus/Unit:

Numbers and their sequence, series, binomial theorem, standard deviations and variance

Content

Summation, Sequences, Series, Binomial Theorem, Standard deviations, Quadratic equations/inequalities, Discriminate and Nature of quadratic roots

Common Core Standards/Skills:

Binomial theorem/probability formula, sequence and series statistics

Ongoing Formative Assessments:	<p>Quizzes + Chapter Tests + Exit Slip + Unit Packet</p>
Summative Assessment:	<p>End of Unit Exam & State Assessment (NY Regents)</p>
Skills Necessary For Performance Tasks	<ol style="list-style-type: none"> 1. Binomial Theorem(A.APR.5) 2. Trigonometric equations(A2.A.68) 3. Solving Quadratic equations by other methods(Completing the squares and Formula), Discriminate, Nature of quadratic roots.(A.REI.b),(A2.A.2)
What specific literacy strategies will be used?	<p>Exit Slip, Vocabulary Words, Explaining Formulas</p>
What examples of art will be used?	<p>Create Mathematical Images & Unit Project</p>

**What types
of
technology
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incorporate
d?**

Graphing calculator, SMARTboard