

Semester 1 - Algebra I

Monday	Tuesday	Wednesday	Thursday	Friday
August				
10 <i>Back to School Open House</i>	11 THIS CALENDAR IS FOR: P. 1 P. 6 P. 8	12 <i>6th grade only</i>	13 Game: One Left!	14 Introduction Finish One Left!
17 Game: Scrabble Tiles	18 Order of Operations/GEMS Review GEMS Around the Room Activity Join Google Classroom Google Classroom Codes: Period 1 - Algebra ikypzckt Period 2 - Math 8 lu6c47d3 Period 3 - Math 8 wpbe3tgt Period 6 - Algebra uoyliozi Period 8 - Algebra buwimegg	19/20 GEMS Tiles Multi-Step Solving Video No Solution vs. Infinitely Many Solutions Notes 1- and 2-Step Around the Room Activity		21 <i>School Starts at 8:15 for PLC every Friday the rest of the school year</i> "Multi-Step Review (Easy) - 2023" and how to check answers Required Problems DUE FRIDAY, 8/28: "Multi-Step Equation Solving Practice #2"
24 "Multi-Step Solving Practice #4" Answer KEY Included	25 Equation Triangle Puzzle "Multi-Step Solving Practice #5" - EVENS will be on RP Quiz	26/27 "Make a Copy: Distribute and Combine Interactive Practice - Student" "Variables on Both Sides Coloring Sheet" <i>Last 10 minutes</i> "Multi-Step Solving Check for Understanding"		28 RP Quiz: "Multi-Step Equation Solving Practice #2" and "Multi-Step Solving Practice #5" - EVENS for Multi-Step Around the Room Activity

31

Multi-Step Solving**Partner Quiz:** "Multi-Step Multiple Choice Practice"

Discuss together; enter answers separately on Google Form

September

1

"Multi-Step Solving Practice #6"

2/3

iReady Beginning of the Year Diagnostic

4

iReady Beginning of the Year Diagnostic

***** NEW TOPIC*****

Watch Slope-Intercept Video

7

No School

Labor Day

8

Slope-Intercept Graphing Notes

9/10

Multi-Step Solving Assessment

11

"The Graph of Me!"

14

15

16/17

18

21 No School Professional Development Day	22	23/24		25
28	29	October		
		30/1	2	
5	6	7	8	9
Fall Break 12-16				

19	20	21/22	23
26	27	28/29	30

November

2	3	4/5	6 No School Professional Development Day
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9

10

11/12

13

16

17

18/19

20

Thanksgiving Break 23-27

30

December

	1	2/3	4
7	8	9/10	11
14	15	16	17
			18 No School Teacher Work Day

Semester 2 - Algebra I

Monday	Tuesday	Wednesday	Thursday	Friday
January				
4 No School Teacher Work Day				
11				
18 No School Martin Luther King Jr. Day				
25				

February

1

8

12

No School

15

No School

Presidents Day

22

March

1

8

22

29

30

Spring Break 15-19

April

		31/1		
5				
12				
19				23
26				

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May				
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3				
10				
17				

Algebra 1 Course Standards and Skills

Unit 1: Equations/ Inequalities in One Variable

Multistep Equations

- Order of operation Problems
 - GEMS
- Solve One step Equations
- Solve 2 Step equations
- Solve Multistep Equations
 - Combining like terms
 - Distributive property
 - Variables on both sides
 - Fraction and Decimal Coefficients
 - Solve for specific Variables (literal equations)
 - Identify the solution type of equations
- Solve Equation Word problems
 - Set up and Solve the problems and explain the process
- Find mistakes in another person's work and correct it.

One variable Inequalities

- Know that every inequality has a solution set rather than one solution
- Solve one variable inequalities and represent the solution set on a number line
 - One variable problem
 - Open vs closed circles
 - Which direction to shade
- Understand that multiplying and dividing by a negative will cause the inequality symbol to flip
- Be able to identify which inequality symbol is which

Unit 2: Linear Functions

Functions

- Complete a function table with given input or output values
 - In table form
 - Graph form
 - In words
- Know the definition of a function
- Be able to define the Independent and Dependent Variable of a function
 - In a table
 - Graph
 - Words
- Build the function rule
 - From a table
 - From 2 points
 - From a graph
 - From a verbal description
- Convert a function into all possible forms
 - Table
 - Function rule
 - Graph
 - Words
- Analyze functions in all forms for specific information
 - Rate of change
 - X intercept
 - Y intercept
- Linear vs nonlinear functions in all forms
- Use function Notation to explore input and outputs of graphs
- Be able to describe a function in the context of the problem.
 - Use a graph to model a distance time scenario

Graphing Linear Equations

- Determine the Slope of a given line

	○ <u>Know slope is the ratio of</u> $\frac{\text{Rise}}{\text{Run}}$ • <u>Be able to simplify slope into a unit rate</u> • <u>Use Similar triangles to prove slope remains constant throughout the line</u> • <u>Be able to graph a linear equation from:</u> ○ <u>Slope intercept form</u> $y = mx + b$ ○ <u>Standard Form</u> $ax + by = c$ ○ <u>Point Slope form</u> $y - y_1 = m(x - x_1)$ • <u>Be able to convert an equation into the other 2 forms</u> • <u>Be able to use the line of an equation to describe the context of the problem</u> • <u>Lines represent all possible input and output pairs of a given equation</u> • <u>Understand that the Slope of a line is the same as a function's rate of change</u> • <u>Be able to identify a lines x and y intercepts</u> ○ <u>In graph form</u> ○ <u>From the equation</u> • <u>Know the Definition of Linear and Nonlinear</u> ○ <u>Be able to identify each in all forms</u> • <u>Determine lines parallel and perpendicular to a given line through specific points</u>
Unit 3 Systems of Equations and Inequalities	Unit 4 Polynomial Operations
<u>Solving Linear systems</u> • <u>Know that a system is 2 or more equations that share the same variables</u> • <u>Be able to solve a system by graphing each equation</u> ○ <u>Equations in the form of</u> ▪ <u>Slope intercept form</u> ▪ <u>Standard form</u> • <u>Know the answer to a system problem is an intersection point between 2 lines.</u> • <u>Be able to solve a system using substitution</u> ○ <u>Equations will be in all forms</u> ▪ <u>Slope intercept form</u> ▪ <u>Standard Form</u> • <u>Be able to solve a system using elimination</u> ○ <u>Equations will be in all forms</u> ▪ <u>Slope intercept form</u> ▪ <u>Standard form</u> • <u>Be able to pick the correct strategy for a given system</u> • <u>Be able to set up and solve a system word problem</u> • <u>Be able to identify the three types of solutions either algebraically or graphically</u> ○ <u>One solution</u> ○ <u>No Solution</u> ○ <u>Infinitely many Solutions</u>	<u>Polynomial Operations</u> • <u>Know the Definitions of polynomials</u> ○ <u>Monomial</u> ○ <u>Binomial</u> ○ <u>Trinomial</u> ○ <u>Polynomial</u> • <u>Add and Subtract Polynomials</u> ○ <u>Know that addition and subtraction is similar to combining like terms</u> • <u>Multiply Polynomials using exponent rules and distributive property</u> ○ <u>Binomial times Binomial</u> ○ <u>Binomial times Trinomial</u> ○ <u>Trinomial times Trinomial</u> ○ <u>F.O.I.L method</u> ○ <u>Array technique (Area of the Box)</u> • <u>Be able to use all operations to simplify a polynomial expression</u> ○ <u>GEMS</u> • <u>Be able to use Special Product patterns to simplify Polynomial expressions</u> ○ <u>Difference of squares</u> ○ <u>Square of sums</u> ○ <u>Square of differences</u> • <u>Be able to set up and simplify polynomial word problems</u> ○ <u>Area of shapes with polynomial dimensions</u>

- Be able to explain the answers of a system word problem in the context of the problem

Unit: 2 variable inequalities and system of linear inequalities

- Be able to graph a linear inequality on a coordinate plane
 - 2 variable problems
 - Solid vs dotted lines
 - Which area to shade
- Be able to graph inequalities in
 - Slope intercept form
 - Standard form
- Be able to build a linear inequality from words and context
- Explain what the solution set means in the context of the problem
- Be able to solve a system of Linear inequalities
 - Know the Solution set is the intersection of shaded regions

Unit 5 Exponential Functions

Exponent Rules and Scientific Notation

- Be able to simplify exponents using the product rule
- Be able to Simplify exponents using the quotient rule
- Be able to simplify exponents using the power rule
- Understand how to simplify negative exponents
- Understand what a number raised to a zero-power means
- Be able to simplify fraction Exponent powers
- Be able to Convert a number into Scientific Notation
- Be able to Convert a number out of Scientific Notation
- Be able to perform operations with numbers in Scientific notation
 - Adding
 - Subtracting
 - Multiplying
 - Dividing
- Be able to perform operations on numbers in both standard form and Scientific form

Exponential Functions

- Be able to graph exponential functions from an input output table
- Be able to identify exponential growth and decay from a graph
- Understand what happens to the graph of an exponential when the equation is changes
 - Example: 2^x becomes $2^x + 4$, What happens?
- Be able to set up and solve exponential function word problems
 - Compound interest
 - Growth
 - Decay
- Be able to Identify the growth or decay rate by using a table
- Compare the rate of change of exponentials to other function types

Unit 6 Polynomial Factoring

Factor Polynomials

- Be able to factor polynomials by the Greatest Common Factor (GCF)
- Be able to factor polynomials by grouping
 - Know that only 4 termed polynomials may be factored by grouping
- Be able to factor trinomials with $a = 1$ by using the AC Method
- Be able to factor trinomials with $a > 1$ by using the AC Method
- Be able to recognize and factor special products of polynomials
 - Difference of squares
 - Square of sums
 - Square of differences
- Be able to factor a polynomial completely which may require more than one technique
- Know the definition of a root of a polynomial
- Solve Trinomials by factoring
 - Zero product property
 - Identify the number of roots and type of roots
 - 2 real roots
 - No real roots
 - Double root
 - Find the value of the roots of a polynomial
- Be able to set up and solve word problems that require factoring to solve and explain the findings in the context of the problem

○ <u>Know that exponentials grow faster than any other function eventually</u> • <u>Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal interval</u>	
Unit 7 Quadratic Functions	Unit 8 Data and Statistics
<u>Quadratic Equations</u> • <u>Know the definition of a quadratic Equation</u> • <u>Know the graph of a quadratic is always a parabola</u> • <u>Be able to Graph a quadratic by building an input output table</u> • <u>Be able to graph a quadratic using the axis of symmetry and vertex</u> • <u>Be able to graph a quadratic using vertex form</u> • <u>Identify the max and min of a quadratic by looking at the vertex</u> • <u>Identify the type of roots by looking at the parabola</u> ○ <u>2 real roots</u> ○ <u>No real roots</u> ○ <u>Double root</u> • <u>Solve a quadratic by graphing and estimating the roots</u> • <u>Be able to use the quadratic formula to find the roots</u> • <u>Be able to use Completing the square to solve a quadratic</u> ○ <u>Also use complete the square to convert from standard form to Vertex Form</u> • <u>Be able to set up and Solve quadratic application problems</u> ○ <u>Projectile motion</u> ○ <u>Area problems</u> ○ <u>Consecutive integer problems</u>	1. Model data in context with plots on the real number line (dot plots, histograms, and box plots). (CCSS: HS.S-ID.A.1) 2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. (CCSS: HS.S-ID.A.2) 3. Interpret differences in shape, center, and spread in the context of the data sets, counting for possible effects of extreme data points (outliers) Scatterplots • Be able to construct a scatterplot from a set of data • Identify the type of correlation ○ Positive correlation ○ Negative Correlation ○ No Correlation • Accurately draw a line of best to represent the data ○ Build an equation of the line in slope intercept form • Be able to draw conclusions of the data using ○ Line of best fit ○ Clustering of points ○ Correlation Type ○ Outliers • Use the line of best fit to estimate unknown data values ○ Data points within the set ○ Data points in the future • Be able to complete a 2-way frequency table and find relative frequencies • Correlation vs Causation
Introduction to Radicals	
• Estimate non perfect roots by hand • Simplify radicals in exact form • Add and subtract radicals • Multiply and divide radicals • Rationalize the denominator	

- Solve radical equations

Next Year: Do what problems on non-homework days. [CMAS Released Items](#)

Delta Math

[Amplify](#)