Algebra Pacing Guide for ABGS Middle School 2021

Hello Algebra Teachers

To those of us who are new this is the guide or flow of how we have taught Algebra over the years with a few tweaks here and there. However, this is the general flow for the school year. We account for concepts from 7th and 8th grade in our planning. I have also included JumblED which is from jmap. You create your account and add your students then you can assign the regents questions for practice. I am also including the Assessment dates for the year. Please note that this is a living document, and we will adjust as the year progresses. If you make an edition, please change the font color.

GOAL: All 8th grade students will be prepared to write and be successful in the Algebra Regents in June 2022. We will scaffold instruction to meet or build on prior needs so that students may experience success in new and challenging concepts in Algebra.

Exam	Date	Materials Required
Algebra Diagnostic	October 4-18, 2021	Laptop/Device Graphing Calculator Scrap Paper Pencil/Pen
Algebra Midyear	January 24-28, 2022	
Algebra Mock (End of Year/PreRegents)	May 16-20, 2022	
Benchmark 1	December 6, 2021	
Benchmark 2	April 11, 2022	
Algebra Regents	June 16, 2022 @9:15am	Graphing calculators, rulers, pens, pencils, accommodations list

Topic & # of Instructional Days	Standards Addressed	Concept Descriptors	Notes
Number Sense and Operations	6.EE.A.2 8.NS.A.2 8.NS.A.1	• Order of Operations • Real Number System • Classifying Numbers • Evaluating Expressions **** You can insert exponents here or when you are about to teach Polynomials.	
Solving Equations and Inequalities	A.SSE.A.1 A.REI.A.1 A.REI.B.3	• Write expressions from verbal descriptions • Solve equations ▫ *One step*	JumblED - Equations *Sign up with JumblED for access to the regents

~20 days	A.CED.A.1 A.CED.A.2 A.CED.A.4	▫ *Two steps* ▫ *Distributive property* ▫ *Combining like terms* ▫ *Variables on both sides* ▫ *Fractional equations* ▫ *absolute value* • Solve literal equations (ex: Pv = nRT, solve for R) • Model with applications of proportions • Solve Inequalities ▫ One step ▫ Two steps ▫ Distributive, combining, variables on both sides etc. • Word Problems ▫ Coin problems etc.	questions that can be assigned to students in your classes. Consider this the Deltamath of JMAP.
Solving Inequalities ~13 days	A.CED.1 A.REI.3	• Graph and write inequalities in one variable • Solve inequalities (include compound inequalities) • Solve absolute value inequalities at an introductory level • Introduce tolerance as an application of absolute value inequalities	JumblED -Inequalities
Linear Functions ~18 days	A.CED.2 A.CED.3 A.REI.10 F.BF.1 F.BF.3 F.IF.2 F.IF.4 F.IF.5 F.IF.6 F.IF.7 F.LE.1 F.LE.2	• Graph and write linear functions in slope-intercept, point-slope, and standard (intercept) form • Identify x, y-intercepts as ordered pairs • Determine slope and apply as a rate of change • Recognize properties of parallel and perpendicular lines • Determine line of best fit using technology (LinReg)	JumblED - Linear Equations

	S.ID.6 S.ID.7 S.ID.8 S.ID.9	• Calculate the value of a residual and interpret in real world situations • Transform Linear Functions (vertical translations and reflections) • Identify and graph transformations of absolute value functions	
System of Equations and Inequalities ~18 days	A.REI.3 A.REI.5 A.REI.6 A.REI.11 A.REI.12 A.CED.2 A.CED.3	• Solve systems by graphing, substitution, and elimination • Identify the solution to a system as an ordered pair • Classify systems of linear equations in terms of the number of solutions • Choose an appropriate method to solve a system • Graph and solve systems of linear inequalities • Apply systems to real world situations	JumblED - Systems of Equations & Inequalities
Rates ~10 days	7.RP.A.3 N.Q.A.1 N.Q.A.2 A.CED.A.2 F.IF.B.6	• Percent • Error • Conversions • Using rate • Speed • Rate of Change	JumblED - Rates
Functions ~25 days	N.Q.1 N.Q.2 A.CED.3 A.REI.10 F.BF.1 F.BF.2 F.LE.2 F.IF.1 F.IF.2 F.IF.3 F.IF.4	• Model a real-life situation with a graph • Represent a relation/function in multiple forms (i.e., table, graph, mapping) • Identify domain and range for a function • Write, evaluate, and graph functions in f(x) notation • Construct scatterplots • Identify correlation and real world meaning • Introduce trend lines as a method of making predictions	JumblED - Functions

	F.IF.5 F.IF.7 S.ID.6 A.SSE.B.3 F.BF.A.1 F.LE.A.2 F.LE.B.5 F.IF.C.7	• Identify a sequence as arithmetic • Solve for the a_n given a_1 and d • Operations with Functions • Families of Functions • Transformations of Functions • Comparing Functions • Graphing Absolute Value Functions • Graphing Piecewise Functions • Graphing Step Functions • Model Exponential Functions • Graphing Exponential Functions	
Radicals ~ 8 days	8.NS.A.2 N.RN.B.3 F.IF.C.7	• Square Roots • Squares and Cubes • Simplify Radicals • Operations with Radicals • Graphing Root Functions	JumblED - Radicals
Exponents & Polynomials ~13 days	A.APR. A.1 8.EE.A.3 8.EE.A.4 N.RN.1 N.RN.2 N.RN.3 A.SSE.1a A.APR.1	• Multiplication, Division, and Power of Power Rules • Operations with Scientific Notation • Evaluate and simplify expressions with integer exponents • Classify polynomials by degree and number of terms • Perform operations with polynomials (add, subtract, and multiply) • Model real world situations using polynomials	JumblED - Polynomials & Factoring
Factoring ~14 days	A.SSE.2 A.SSE.3a	• Factor Polynomials by GCF • Factor $x^2 + bx + c$ • Factor $ax^2 + bx + c$ • Factor perfect square trinomials • Factor the difference of two squares • Choose an appropriate method of factoring	JumblED - Polynomials & Factoring

		• Model real world situations using polynomial	
Quadratic Functions and Equations ~25 days	A.CED.1 A.CED.3 A.REI.1 A.REI.4a A.REI.4b A.REI.7 A.REI.10 A.REI.11 A.SSE.3 F.IF.4 F.IF.5 F.IF.7 F.IF.8 F.BF.1 F.BF.3	• Identify quadratic functions and the minimum or maximum • Determine the axis of symmetry and the vertex • Determine the zeros (x-intercepts) of a quadratic function from a graph • Graph transformations of quadratic functions • Solve quadratic equations by graphing, factoring, completing the square, using square roots, and using the quadratic formula • Determine the number of solutions by using the discriminant • Solve a system of one linear and one quadratic equation	JumblED - Quadratics
Data Analysis ~15 days	S.ID.1 S.ID.2 S.ID.3 S.IC.1 S.IC.6 S.CP.1 S.CP.2 S.CP.6 S.CP.7	• Display data in tables and frequency tables • Create and display data as a histogram, box and whiskers plot, and a dot plot • Read and interpret graph of data • Identify the shape of a distribution • Describe the central tendency (mean, median, and mode) of a data set • Describe the effect of an outlier on the measures of central tendency • Recognize misleading graphs and statistics	JumblED - Statistics
Sequences ~5 days	F.IF.A.3 F.LE.A.2	• Explicit sequences • Recursive sequences	JumblED - Sequences