

GRADE 8 DIFFERENTIATED ALGEBRA SYLLABUS-SEMESTER 1

Concepts and Skills	Section	8 th Grade State Standards
INTRO TO ALGEBRA (Formatively Assess)		
Model Patterns and Functions	1-4	[SS 8.3.1.a]
SOLVE LINEAR EQUATIONS		
APPLY LINEAR EQUATIONS		
Solve Two-Step Equations • <i>Incorporated Skills: Add, Subtract, Multiply and Divide Rational Numbers</i>	3-1	[SS 8.1.2.a, SS 8.1.3a, SS 8.3.3.a, SS 8.3.3.d, SS 8.3.3.e, SS 8.1.4.a] DK1&DK2
• Solve Multi-Step Equations <i>Incorporated Skills: Use the Distributive Property and Combine Like Terms</i>	3-2 and Supp	
Solve Equations with Variables on Both Sides. Identify Equations that are Identities or Have No Solution.	3-3	
Transform Formulas (p. 140-141)	Supp	
Find and Solve Ratios and Proportion	3-4	[SS 8.1.3e, SS 8.2.5.d] DK1&DK2
• Write and Solve Equations for Real-life Problems	3-1to3-4 3-6	[SS 8.2.1.e, SS 8.3.2.a, SS 8.3.2.b] DK1&DK2&DK3
SOLVE LINEAR INEQUALITIES		
APPLY INEQUALITIES		
• Graph and Interpret Inequalities	4-1	[SS 8.3.1b, SS 8.3.3.d, SS 8.3.3.e, SS 8.1.4.a] DK1&DK2
Solve Inequalities Using Addition and Subtraction	4-2	
Solve Inequalities Using Multiplication and Division	4-3	
• Solve Multi-step Inequalities	4-4	
Solve Compound Inequalities	4-5	
Solve Absolute Value Equations and Inequalities. *Extension Pg. 241.	4-6	[SS 8.1.3.b] DK1
Cumulative Assessment Units 3 & 4		
INTRO TO FUNCTIONS AND GRAPHS		
Relate Graphs to Events	5-1	[SS 8.3.1.a]
Identify and Evaluate Relations and Functions	5-2	
Model Function using Rules, Tables, and Graphs (Refer back to 1-4)	5-3	
WRITE A MODEL FOR A FUNCTION		
Write a Function Rule	5-4	
<i>Write and Use Direct Variation</i>	5-5	
<i>Write and Use Inverse Variation</i>	5-6	
RATE OF CHANGE		
Find Rate of Change and Slope	6-1	[SS 8.1.2.c, SS 8.3.1.c]
GRAPH LINEAR FUNCTIONS		
WRITE LINEAR FUNCTIONS		
Write and Graph using Slope-Intercept Form	6-2	
Apply Linear Functions	6-3	
Write and Graph using Standard Form	6-4	[SS 8.2.2.a]
Write and Graph using Point-Slope Form	6-5	
<i>Write Parallel and Perpendicular Lines</i>	6-6	
<i>Write using Scatter Plots</i>	6-7	
Cumulative Assessment Units 5 & 6		
FIND AND USE PROBABILITY		
• Find the Theoretical and Experimental Probability	2-6	[SS 8.4.3.a] DK1&DK2
• Find the Probability of Compound Events using Counting Principle (NOT Permutations)	2-7 & 12-7	[SS 8.4.3.b] DK1&DK2
SEMESTER 1 FINAL EXAM		
SS = 8 th Grade State Standard • = Assessed State Standard DK = Depth of Knowledge		

Use Middle School Algebra Warm-up Review Packets DCA-M dates TBA NeSA-M: March 24-April 25

8th Grade concepts and skills needed to be covered/reviewed in Algebra:

- Name angle relationships and solve equations to find measures of angles formed by intersecting lines and parallel lines cut by a transversal [SS 8.2.1c, 8.2.1d] DK1
- Classify triangles by sides & angle measures, solve equations to find angle measures in triangles [SS 8.2.1e] DK1&DK2
- Use similar polygons to find missing sides & use scale factors [SS 8.2.5d] DK1
- Classify numbers as natural, whole, integer, rational, irrational, or real [SS 8.1.1a, 8.1.1d] DK1&DK2
- Use the Pythagorean Theorem to solve problems [SS 8.2.5c] DK1&DK2
- Select the most appropriate measure of central tendency (Mean, Median, and Mode) [SS 8.4.1d] DK1&DK2
- Compare characteristics between sets of data and within a given set of data [SS 8.4.1b] DK2&DK3
- Identify misrepresentation & misinterpretation of data represented in *circle graphs & box plots* [SS 8.4.1e] DK1&DK2
- Use estimation methods to check for reasonableness of solutions throughout. [SS 8.1.4a] DK1 & DK2
- Model contextualized problems using various representations. [SS 8.3.2a] DK2 & DK3

GRADE 8 DIFFERENTIATED ALGEBRA SYLLABUS-SEMESTER 2

Concepts and Skills	Section	8 th Grade State Standards
SOLVE SYSTEMS OF LINEAR EQUATIONS		
APPLY SYSTEMS OF LINEAR EQUATIONS		
Solve Systems by Graphing	7-1	
Solve Systems Using Substitution	7-2	
Solve Systems Using Elimination	7-3	
GRAPH LINEAR INEQUALITIES		
<i>Write and Graph Linear Inequalities</i>	7-5	
<i>Solve Systems of Linear Inequalities</i>	7-6	
SIMPLIFY EXPONENTIAL EXPRESSIONS		
Simplify and Evaluate Exponential Expressions with and without Zero and Negative Exponents	8-1	
• Write and Use Scientific Notation	8-2	[SS 8.1.1.c] DK1&DK2
Use Multiplication Properties of Exponents to Multiply Powers	8-3	
Simplify Powers and Products Raised to a Power	8-4	
Simplify Exponential Expressions using Division Properties of Exponents	8-5	
EVALUATE AND GRAPH EXPONENTIAL FUNCTIONS		
Evaluate and Graph Exponential Functions	8-7	
Model Exponential Growth and Decay	8-8	
Cumulative Assessment Units 7 & 8		
PERFORM OPERATIONS WITH POLYNOMIALS		
Add and Subtract Polynomials	9-1	
Multiply and Factor Polynomials	9-2	
Multiply Binomials	9-3	
Multiply Special Types of	9-4	
FACTOR POLYNOMIALS		
Multiply and Factor Polynomials	9-2	
Factor Trinomials of the Type x^2+bx+c	9-5	
Factor Trinomials of the Type ax^2+bx+c	9-6	
Factor Special Types of Binomials	9-7	
<i>Factor by Grouping</i>	9-8	
EXPLORE AND GRAPH QUADRATIC FUNCTIONS		
Explore Different Quadratic Graphs	10-1	
Graph Quadratic Functions & Inequalities	10-2	
SOLVE QUADRATIC EQUATIONS		
Solve Quadratic Equation	10-3	[SS 8.2.5.c]
<i>Pre-requisite Skill: Find and Estimate Square Roots</i>	(3-8)	[SS 8.1.3.c]
Use Factoring to Solve Quadratic Equations	10-4	[SS 8.1.2.b]
<i>Complete the Square to Solve Quadratic Equations</i>	10-5	
Use the Quadratic Formula to Solve Quadratic Equations	10-6	
<i>Use the Discriminant to Determine the Number of Solutions</i>	10-7	
Cumulative Assessment Unit 9 & 10		
SIMPLIFY RADICAL EXPRESSIONS		
Simplify Radicals	11-1	
Simplify Radical Expressions	11-2	
MODEL LINEAR, QUADRATIC, AND EXPONENTIAL FUNCTIONS		
Determine type of function given a graph or table	10-8	
Write a function to model data	10-8	
SEMESTER 2 FINAL EXAM		
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