

ALGEBRA 1 SYLLABUS  
2021- 2022 Academic School-Year

**Marking Period 1**

**Chapter 1 – Solving Linear Equations (Test 1.1-1.5)**

Section	Title	NJSLS	Problems
			<i>*Teachers must assign mixed review problems as part of homework assignments.</i>
1.1	Solving Simple Equations	<i>NJSLS-A-CED.A.1, NJSLS-A-REI.A.1, NJSLS-A-REI.B.3</i>	Warm up only day one.
1.2	Solving Multi-Step Equations	<i>NJSLS-N-Q.A.1, NJSLS-A-CED.A.1, NJSLS-A-REI.B.3</i>	Big Ideas Text p. 16-18 #1-47, 49, 50, 57-65
1.3	Solving Equations with Variables on Both Sides	<i>NJSLS-A-CED.A.1, NJSLS-A-REI.B.3</i>	Big Ideas Text p. 23-24 #1-30, 33, 37 38, 41-44
1.4	Solving Absolute Value Equations	<i>NJSLS-A-CED.A.1, NJSLS-A-REI.B.3</i>	Big Ideas Text p. 32-34 #1-51, 53-57, 62-67
1.5	Rewriting Equations and Formulas	<i>NJSLS-A-CED.A.4</i>	Big Ideas Text p. 40-42 #1-36, 38, 47-54

**Chapter 2 – Solving Linear Inequalities (Test 2.1-2.6)**

Section	Title	NJSLS	Problems
2.1	Writing and Graphing Inequalities	<i>NJSLS-A-CED.A.1</i>	Big Ideas Text p. 58-60 #1-46, 48-52, 60-67
2.2	Solving Inequalities Using Addition or Subtraction	<i>NJSLS-A-CED.A.1, NJSLS-A-REI.B.3</i>	Big Ideas Text p. 65-66 #1-35, 37, 39-46
2.3	Solving Inequalities Using Multiplication or Division	<i>NJSLS-A-CED.A.1, NJSLS-A-REI.B.3</i>	Big Ideas Text p. 71-72 #1-34, 40-47
2.4	Solving Multi-Step Inequalities	<i>NJSLS-A-CED.A.1, NJSLS-A-REI.B.3</i>	Big Ideas Text p. 77-78 #1-34, 36, 38-43
2.5	Solving Compound Inequalities	<i>NJSLS-A-CED.A.1, NJSLS-A-REI.B.3</i>	Big Ideas Text p. 85-86 #1-23, 25-32, 35-40
2.6	Solving Absolute Value Inequalities	<i>NJSLS-A-CED.A.1, NJSLS-A-REI.B.3</i>	Big Ideas Text p. 91-92 #1-28, 31-35, 38, 40-46

### Chapter 3 – Graphing Linear Functions (Test 3.1-3.5)

Section	Title	NJSLS	Problems
3.1	Functions	<i>NJSLS-F-IF.A.1</i>	Big Ideas Text p. 108-110 #1-25, 28, 29, 31-34, 40-51
3.2	Linear Functions	<i>NJSLS-A-CED.A.2, NJSLS-A-REI.D.10, NJSLS-F-IF.B.5, NJSLS-F-IF.C.7a, NJSLS-F-LE.A.1b</i>	Big Ideas Text p. 117-120 #1-44, 52, 55-61
3.3	Function Notation	<i>NJSLS-A-CED.A.2, NJSLS-F-IF.A.1, NJSLS-F-IF.A.2, NJSLS-F-IF.C.7a, NJSLS-F-IF.C.9</i>	Big Ideas Text p. 125-126 #1-31, 34, 37-42
3.4	Graphing Linear Equations in Standard Form	<i>NJSLS-A-CED.A.2, NJSLS-F-IF.C.7a</i>	Big Ideas Text p. 133-134 #1-35, 39-42
3.5	Graphing Linear Equations in Slope-Intercept Form	<i>NJSLS-A-CED.A.2, NJSLS-F-IF.B.4, NJSLS-F-IF.C.7a, NJSLS-F-LE.B.5</i>	Big Ideas Text p. 141-144 #1-42, 45, 48, 50-52, 54--60

### Chapter 3 – Graphing Linear Functions (Quiz 3.7)

3.7	Graphing Absolute Value Functions	<i>NJSLS-A-CED.A.2, NJSLS-A-REI.D.10, NJSLS-F-IF.C.7b, NJSLS-F-BF.B.3</i>	Big Ideas Text p. 160-162 #1-41, 44-46, 49, 55-59, 61, 64-70
-----	-----------------------------------	---	--

## Marking Period 2

### Chapter 4 – Writing Linear Functions (Test 4.1-4.3)

Section	Title	NJSLS	Problems
4.1	Writing Equations in Slope-Intercept Form	<i>NJSLS-A-CED.A.2, NJSLS-F-BF.A.1a, NJSLS-F-LE.A.1b, NJSLS-F-LE.A.2</i>	Big Ideas Text p. 179-180 #1-28, 31-33, 36, 38-45
4.2	Writing Equations in Point-Slope Form	<i>NJSLS-A-CED.A.2, NJSLS-F-BF.A.1a, NJSLS-F-LE.A.1b, NJSLS-F-LE.A.2</i>	Big Ideas Text p. 185-186 #1-34, 38, 40-44
*Supplement	Writing Equations in Standard Form	<i>NJSLS-A-CED.A.2, NJSLS-F-BF.A.1a, NJSLS-F-LE.A.1b, NJSLS-F-LE.A.2</i>	Teacher created resources using Kuta software or other supplemental material.
4.3	Writing Equations of Parallel and Perpendicular Lines	<i>NJSLS-A-CED.A.2, NJSLS-F-LE.A.2</i>	Big Ideas Text p. 191-192 #1-28, 32-35, 37, 38

### Chapter 5 – Solving Systems of Linear Equations (Test 5.1-5.4, 5.6-5.7)

Section	Title	NJSLS	Problems
5.1	Solving Systems of Linear Equations by Graphing	<i>NJSLS-A-CED.A.3, NJSLS-A-REI.C.6</i>	Big Ideas Text p. 239-240 #1-28, 31, 32, 34-36
5.2	Solving Systems of Linear Equations by Substitution	<i>NJSLS-A-CED.A.3, NJSLS-A-REI.C.6</i>	Big Ideas Text p. 245-246 #1-20, 25, 26, 30, 32, 36-41
5.3	Solving Systems of Linear Equations by Elimination	<i>NJSLS-A-CED.A.3, NJSLS-A-REI.C.5, NJSLS-A-REI.C.6</i>	Big Ideas Text p. 251-252 #1-26, 29, 36-42
5.4	Solving Special Systems of Linear Equations	<i>NJSLS-A-CED.A.3, NJSLS-A-REI.C.6</i>	Big Ideas Text p. 257-258 #1-25, 29, 30, 33-36
5.6	Graphing Linear Inequalities in Two Variables	<i>NJSLS-A-CED.A.3, NJSLS-A-REI.D.12</i>	Big Ideas Text p. 271-272 #1-38, 40, 46-48
5.7	Systems of Linear Inequalities	<i>NJSLS-A-CED.A.3, NJSLS-A-REI.D.12</i>	Big Ideas Text p. 278-280 #1-30, 38, 49-55

## Chapter 6 – Exponential Functions and Sequences (Test 6.1, 6.3-6.4)

Section	Title	NJSLS	Problems
6.1	Properties of Exponents	<i>NJSLS-N-RN.A.2</i>	Big Ideas Text p. 296-298 #1-44, 47-50, 70-75
6.3	Exponential Functions	<i>NJSLS-A-CED.A.2, NJSLS-F-IF.B.4, NJSLS-F-IF.C.7e, NJSLS-F-LE.A.1a, NJSLS-F-LE.A.2</i>	Big Ideas Text p. 310-312 #1-42, 46, 55, 57, 58, 64-67
6.4	Exponential Growth and Decay	<i>NJSLS-A-SSE.B.3c, NJSLS-A-CED.A.2, NJSLS-F-IF.C.7e, NJSLS-F-IF.C.8b, NJSLS-F-BF.A.1a, NJSLS-F-LE.A.1c, NJSLS-F-LE.A.2</i>	Big Ideas Text p. 319-322 #1-60, 62, 66, 68, 69, 73-79

## Marking Period 3

## Chapter 7 – Polynomial Equations and Factoring (Test 7.1-7.3)

Section	Title	NJSLS	Problems
7.1	Adding and Subtracting Polynomials	<i>NJSLS.A.APR.A.1, NJSLS.F-IF.C.7c</i>	Big Ideas Text p. 362 #1-4, 6-18 even, 22-46 even, 53-57, 62-64
7.2	Multiplying Polynomials	<i>NJSLS.A.APR.A.1</i>	Big Ideas Text p. 369 # 1, 4-24 even, 28-30 even, 44, 52-58
7.3	Special Products of Polynomials	<i>NJSLS.A.APR.A.1</i>	Big Ideas Text p. 375 #1, 4-10 even, 16, 18, 22, 34, 37, 48-51

## Chapter 7 – Polynomial Equations and Factoring (Test 7.4-7.8)

Section	Title	NJSLS	Problems
7.4	Solve Polynomial Equations in Factored Form	<i>NJSLS.A.CED.A.1, NJSLS.F.IF.C.8a</i>	Big Ideas Text p. 381 #1, 2-16 even, 22-38 even, 41, 42, 44, 49-52
7.5	Factoring $x^2 + bx + c$	<i>NJSLS.A.CED.A.1, NJSLS.A.REI.B.4b, NJSLS.F.IF.C.8a</i>	Big Ideas Text p. 389 #1, 2-38 even, 39, 46, 47 - 55
7.6	Factoring $ax^2 + bx + c$	<i>NJSLS.A.SSE.B.3, NJSLS.A.CED.A.1, NJSLS.A.REI.B.4b, NJSLS.F.IF.C.8a</i>	Big Ideas Text p. 395 #1, 2-34 even, 38, 45-56
7.7	Factoring Special Products	<i>NJSLS.A.SSE.B.3, NJSLS.A.APR.C.4, NJSLS.A.CED.A.1, NJSLS.A.REI.B.4b</i>	Big Ideas Text p. 401 #1, 2-8 even, 16-32 even, 36-42 even, 46, 47, 49-56
7.8	Factoring Polynomials Completely	<i>NJSLS.A.SSE.B.3, NJSLS.A.CED.A.1, NJSLS.A.REI.B.4b</i>	Big Ideas Text p. 407 #1, 2-34 even, 38, 40, 42, 50-57

## Chapter 8 – Graphing Quadratic Functions (Test 8.1-8.4, 8.6)

Section	Title	NJSLS	Problems
8.1	Graph $f(x) = ax^2$	<i>NJSLS.A.CED.A.2, NJSLS.A.CED.A.3, NJSLS.F.IF.B.4, NJSLS.F.IF.B.5, NJSLS.F.IF.B.5, NJSLS.F.IF.C.7c, NJSLS.F.BF.B.3</i>	Big Ideas Text p. 423 #1, 2-20 even, 32-35
8.2	Graph $f(x) = ax^2 + c$	<i>NJSLS.A.CED.A.2, NJSLS.A.CED.A.3, NJSLS.F.IF.C.7a, NJSLS.F.IF.C.7c, NJSLS.F.IF.B.4, NJSLS.F.BF.B.3</i>	Big Ideas Text p. 429 #1, 2-12 even, 18-28 even, 34, 38, 42-45
8.3	Graph $f(x) = ax^2 + bx + c$	<i>NJSLS.A.CED.A.2, NJSLS.A.CED.A.3, NJSLS.F.IF.C.7a, NJSLS.F.IF.C.7c, NJSLS.F.BF.B.3</i>	Big Ideas Text p. 436 #1, 2-10, 13-16, 20, 27, 28, 37, 38, 42, 50-53

8.4	Graphing $f(x) = a(x - h)^2 + k$	<i>NJSLS.A.CED.A.2, NJSLS.F.IF.B.4, NJSLS.F.BF.B.3</i>	Big Ideas Text p. 446 #2, 20-34 even, 35-38, 40-44 even, 70, 79-82
8.6	Comparing Linear, Exponential, and Quadratic Functions	<i>NJSLS.A.CED.A.2, NJSLS.A.CED.A.3, NJSLS.F.IF.B.4, NJSLS.F.IF.C.7a, NJSLS.F.IF.C.7c, NJSLS.F.IF.C.7e, NJSLS.F.BF.A.1a, NJSLS.F.LE.A.1, NJSLS.F.LE.A.3, NJSLS.F.LE.B.5, NJSLS.S.ID.B.6a</i>	Big Ideas Text p. 465 #1-4, 6-20 even, 36, 43-50

## Marking Period 4

### Chapter 9 – Solving Quadratic Equations (Test 9.1)

Section	Title	NJSLS	Problems
9.1	Properties of Radicals	<i>NJSLS.A.REI.A.2</i>	Big Ideas Text p. 485 #1-4, 5-10, 14-28 even, 37, 46-52 even, 61, 63, 75-80, 83-88, 108-111

### Chapter 9 – Solving Quadratic Equations (Test 9.2, 9.3-9.5)

Section	Title	NJSLS	Problems
9.2	Solving Quadratic Equations by Graphing	<i>NJSLS.A.CED.A.2, NJSLS.A.CED.A.3, NJSLS.A.REI.D.11, NJSLS.F.IF.B.4, NJSLS.F.IF.C.7a, NJSLS.F.IF.C.7c, NJSLS.F.IF.C.8a</i>	Big Ideas Text p. 494 #1-4, 6-42 even, 53, 54, 66, 67
9.3	Solving Quadratic Equations Using Square Roots	<i>NJSLS.A.CED.A.1, NJSLS.A.CED.A.2, NJSLS.A.CED.A.3, NJSLS.REI.B.4b, NJSLS.A.REI.D.11</i>	Big Ideas Text p. 501 #1, 2-30 even, 31-34, 40, 45-50

9.4	Solving Quadratic Equations by Completing the Square	<i>NJSLS.A.SSE.B.3, NJSLS.A.CED.A.1, NJSLS.F.IF.C.8a, NJSLS.A.REI.B.4a</i>	Big Ideas Text p. 511 #17-22, 25, 26, 33, 78-80
9.5	Solving Quadratic Equations Using the Quadratic Formula	<i>NJSLS.A.REI.B.4b</i>	Big Ideas Text p. 521 #1, 2-48 even, 49, 50-56 even, 72, 83-85

### Chapter 10 Radical Functions and Equations (Test 10.1, 10.3)

Section	Title	NJSLS	Problems
10.1	Graphing Square Root Functions	<i>NJSLS.F.IF.C.7b, NJSLS.F.BF.B.3</i>	Big Ideas Text p. 548 #1-4, 21-25, 29, 30, 35, 38-44 even, 50, 61-63
10.3	Solving Radical Equations	<i>NJSLS.A.REI.A.2</i>	Big Ideas Text p. 564 #1, 2-32 even, 50-60, 72, 84-89

### Chapter 11– Data Analysis and Displays (Test 11.1-11.4)

Section	Title	NJSLS	Problems
11.1	Measures of Center and Variation	<i>NJSLS.S.ID.A.3</i>	Big Ideas Text p. 590 #1-4, 6-30 even, 31, 32, 34, 39-47
11.2	Box-and-Whisker Plots	<i>NJSLS.S.ID.A.1, NJSLS.S.ID.A.3</i>	Big Ideas Text p. 597 #1-8 10-16 even, 20
11.3	Shapes of Distributions	<i>NJSLS.S.ID.A.1, NJSLS.S.ID.A.2, NJSLS.S.ID.A.3</i>	Big Ideas Text p.604 #1, 2-12 even, 22, 23, 25-27
11.4	Two-Way Tables	<i>NJSLS.S.ID.A.1</i>	Big Ideas Text p. 614 #1-4, 6-18 even, 24, 30, 33, 34

### Course Expectations and Skills

- Students are required to have proficiency in all prerequisite topics for Algebra 1. Those who do not demonstrate proficiency will be required to seek additional help to close their achievement gap in order to be successful in this course.
- Students are required to take notes and maintain those notes in a neat and organized notebook.
- Students are required to have a scientific calculator.
- Students are required to participate in both small and large group discussions and activities, as directed.
- Students are required to complete a project each marking period, including those which require the use of technology.

### Resources

Text Book: *Algebra 1*, Big Ideas Math

Supplemental Materials: Algebra 1 Practice Workbook  
Dynamic Algebra Software  
Kuta Infinite Algebra 1

### Assessment Information

#### Department of Mathematics - Algebra 1

<u>Marking Period 1</u>	<u>Marking Period 2</u>	<u>Marking Period 3</u>	<u>Marking Period 4</u>
Major (MAJ): Summative 30%	Major (MAJ): Summative 30%	Major (MAJ): Summative 30%	Major (MAJ): Summative 30%
Benchmark (BMK): 10%	Benchmark (BMK): 10%	Benchmark (BMK): 10%	Benchmark (BMK): 10%
Project (PRJ): 15%	Project (PRJ): 15%	Project (PRJ): 15%	Project (PRJ): 15%
Minor (MIN): Formative 25%	Minor (MIN): Formative 25%	Minor (MIN): Formative 25%	Minor (MIN): Formative 25%
Class Participation (CP): 5%	Class Participation (CP): 5%	Class Participation (CP): 5%	Class Participation (CP): 5%
Homework (HW): 15%	Homework (HW): 15%	Homework (HW): 15%	Homework (HW): 15%