

ALGEBRA 2 INTEGRATED SYLLABUS
2022-2023 Academic School Year

Marking Period 1

Chapter 4: Transformations (Test: 4.1 - 4.3, 4.5)

Section	Title	NJSLS	Problems
4.1, 4.2	Translations Reflections	<i>NJSLS-G-CO.A.2, NJSLS-G-CO.A.4, NJSLS-G-CO.A.5 NJSLS-G-CO.B.6 NJSLS-G-MG.A.3 (Formulas Given)</i>	Big Ideas Text pg. 178 #11-25 odd Big Ideas Text pg. 186 #2-6, 7-19 odd
4.3, 4.5	Rotations Dilations	<i>NJSLS-G-CO.A.2, NJSLS-G-CO.A.4, NJSLS-G-CO.A.5 NJSLS-G-CO.B.6 NJSLS-G-SRT.A.1.a, NJSLS-G-SRT.A.1.b, (Formulas Given)</i>	Big Ideas Text pg.194 #7-15 odd, 28 Big Ideas Text pg. 212 #3, 5, 15- 21 odd, 25, 29

Chapter 11: Measuring Length and Area (Test: 11.1- 11.8)

Section	Title	NJSLS	Problems
11.1, 11.2	Circumference Areas of Circles	<i>NJSLS-G-GMD.A.1, NJSLS-G-C.B.5, NJSLS-G-CO.A.1 NJSLS-G-MG.A.2,</i>	Big Ideas Text p. 598 #1, 3-6, 11,
11.3, 11.4, 11.7, 11.8	Areas of Polygons Three-Dimensional Figures Surface Area and Volumes of Cones	<i>NJSLS-G-GMD.A.3 NJSLS-G-GMD.B.4 NJSLS-G-GMD.A.1, (Formulas Given)</i>	Big Ideas Text p. 614-616 #1-29 odd, 33-35, 39, 40, 44, 53-56 Big Ideas Text p. 621-622 #1-27 odd, 37-39, project Big Ideas Text p. 645-646 #1-21 odd, 25, 27-30, project
11.5, 11.6	Volumes of Prisms and Cylinders Volumes of Pyramids	<i>NJSLS-G-GMD.A.1, NJSLS-G-GMD.A.2, NJSLS-G-GMD.A.3, NJSLS-G-MG.A.3, NJSLS-G-MG.A.2, NJSLS-G-MG.A.3</i>	Big Ideas Text p. 631-634 #1-33 odd, 44 , 51, 55-57, project Big Ideas Text p. 639-640 #1-19 odd, 23, 26-29,

		<i>(Formulas Given)</i> <i>NJSLS-G-GMD.A.1,</i> <i>NJSLS-G-GMD.A.3,</i> <i>NJSLS-G-MG.A.1</i> <i>(Formulas Given)</i>	project
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Chapter 9: Right Triangles and Trigonometry (Test: 9.1, 9.4-9.5)

Section	Title	NJSLS	Problems
9.1	The Pythagorean Theorem	<i>NJSLS-G-SRT.B.4,</i> <i>NJSLS-G-SRT.C.8</i>	Big Ideas Text pg. 236 #3-6, 7-25 odd, 38
9.4	The Tangent Ratio	<i>NJSLS-G-SRT.C.6,</i> <i>NJSLS-G-SRT.C.8</i>	Big Ideas Text pg. 256 #7-11, 13-16, 19, 22, 23
9.5	The Sine and Cosine Ratios	<i>NJSLS-G-SRT.C.6,</i> <i>NJSLS-G-SRT.C.7,</i> <i>NJSLS-G-SRT.C.8</i>	Big Ideas Text pg. 266 #2-7, 9, 14, 15
9.6	Solving Right Triangles	<i>NJSLS-G-SRT.C.8,</i> <i>NJSLS-G-MG.A.1,</i> <i>NJSLS-G-MG.A.3</i>	Big Ideas Text pg. 274 #3-7, 9, 11, 15, 16

Marking Period 2

Chapter 1- Linear Functions (Test: Supplemental 2x2, 1.4, & 3.5)

Section	Title	NJSLS	Problems
Supplement	Solving 2x2 Linear Systems Algebraically	<i>A-REI.C.6</i>	<i>For objectives relating to systems of two, teachers should use Kuta or other supplementary materials.</i> Big Ideas Text pg. 28: # 33-38 Supplemental Text Prentice Hall Algebra 2: pg 128 #1-43
1.4	Solving Linear Systems	<i>A-CED.A.3,</i>	Big Ideas Text pg. 34: 1, 3-6, 17 Supplemental Text Prentice Hall Algebra 2: pg. 157 #1-21
3.5	Solving Nonlinear Systems Graphically	<i>A-CED.A.3,</i> <i>A-REI.C.7,</i> <i>A-REI.D.11</i>	Big Ideas Text pg.136 # 3-14

Chapter 4 Part 1- Operations with Polynomials (Test: Section 4.1 Classifying Polynomials, &4.2)

Section	Title	NJSLS	Problems
4.1	Classifying Polynomials only	<i>HSF-IF.B.4</i>	Big Ideas Text pg. 162 #3-8
4.2	Adding, Subtracting, and Multiplying Polynomials	<i>A-APR.A.1, A-APR.C.4, A-APR.C.5</i>	Big Ideas Text pg.170-172 # 1-14, 16-32, 35-47, 50-52, 56, 66-69

Chapter 3 Part 1- Factoring and Quadratic Equations (Test: Factoring Supplemental & 3.1)

Section	Title	NJSLS	Problems
Supplement	Factoring Quadratic Expressions	<i>A-SSE.A.2, A-SSE.B.3a</i>	Teacher created worksheet using Kuta software or other supplemental material.
3.1	Solving Quadratic Equations	<i>A-SSE.A.2, A-REI.B.4b, F-IF.C.8a, N-RN.A.2</i>	Big Ideas Text pg.99-102 #1-10, 13-19, 23, 27-32, 47-54, 57, 59, 70, 71, 76-83

Marking Period 3

Chapter 2- Quadratic Functions (Test 2.1, 2.2 & 2.4)

Section	Title	NJSLS	Problems
2.1	Transformations and Quadratic Functions	<i>F-IF.C.7c, F-BF.B.3</i>	Big Idea Text pg.52 – 54, #1–33, 35, 37, 39, 46, 50–52
2.2	Characteristics of Quadratic Functions	<i>F-IF.B.4, F-IF.C.7.c, F-IF.C.9, A-APR.B.3</i>	Big Ideas Text pg. 61-64, # 1, 3 - 10, 15-24, 33, 37, 41 – 44, 49 Supplemental Text: Prentice Hall Algebra 2 pg248: #1 – 30 & pg. 256: #27 – 30, 34
2.4	Modeling with Quadratic Functions	<i>A-CED.A.2</i>	Big Ideas Text pg. 80, # 2, 4, 6, 17 Supplemental Text: Prentice Hall

			Algebra 2 pg 255: #13 – 19
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**Chapter 3 Part 2-Simplifying Radicals and Solving Quadratic Equations
(Test: 3.3-3.4, Simplifying Radicals)**

Section	Title	NJSLS	Problems
Supplement	Simplify Radicals	N-RN.A.1, N-RN.A.2	<i>Kuta Software; teacher created resources</i>
3.3	Completing the Square	N-CN.C.7, A-REI.B.4b, F-IF.C.8a	Big Ideas Text pg.116 # 3-8, 11-16, 25-28, 66, 69 #55-60 do not use complete the square, use $h = -b/(2a)$ and $k = f(h)$ Supplemental Text: Prentice Hall Algebra 2 pg. 285 #13-20 #28 & 31 do not use complete the square, use $h = -b/(2a)$ and $k = f(h)$
3.4	Using the Quadratic Formula	A-CED.A.3, A-REI.C.7, A-REI.D.11	Big Ideas Text pg.127 # 15-18, 33, 34,69 Supplemental Text: Prentice Hall Algebra 2 pg. 293 #1-30

NJGPA Practice (Test: NJGPA Practice Test)

Section	Title	NJSLS	Problems
NJGPA Practice	NJGPA Practice Test developed by content teachers and math coach		<i>Use supplemental and teacher created resources developed by math coach and content teachers</i>

Chapter 4 Part 2- Graphing Polynomials (Test: 4.1 & 4.8)

Section	Title	NJSLS	Problems
4.1	Graphing Polynomial Functions	F-IF.B.4, F-IF.C.7c	Big Ideas Text pg.162 #1, 3-14, 17-20, 25-31, 48 Supplemental Text: Prentice Hall Algebra 2 pg. 309 #1-12
4.8	Analyzing Graphs of Polynomials	A-APR.B.3, F-IF.B.4, F-IF.C.7c, F-BF.B.3	Big Ideas Text pg.216 #3-10, 17-22(Use TI84 or Desmos), 23-30

Marking Period 4

Chapter 4 Part 3- Complex Numbers, Factoring and Solving Higher Degree Polynomials

Section	Title	NJSLS	Problems
3.2	Complex Numbers *include higher powers of i	<i>N-CN.A.1, N-CN.A.2, N-CN.C.7, A-REI.B.4b</i>	Big Ideas Text pg.108 # 1-12, 23-30, 37-44, 49-60, 68 Supplemental Text: Prentice Hall Algebra 2 pg. 278 #1-18, 29-46
4.3	Dividing Polynomials	A-APR.B.2, A-APR.D.6	Big Ideas Text pg.177 #11-22, 25-32 Supplemental Text: Prentice Hall Algebra 2 pg. 324 #13-22
4.5	Solving Polynomial Equations	A-APR.B.3	Big Ideas Text pg.194 #3-20, 25-38(must give 1 zero), 41, 42, 56a Supplemental Text: Prentice Hall Algebra 2 pg. 339 #1-5 (must give 1 zero), 7-10 (must give 1 zero), 13-18, 19, 21, 23
4.6	The Fundamental Theorem of Algebra	N-CN.C.8, N-CN.C.9, A-APR.B.3	Big Ideas Text pg.202 #3-16, 21, 22, 25 Supplemental Text: Prentice Hall Algebra 2 pg. 343 #9-16

Chapter 5: Rational Exponents and Radical Functions (Test: 5.1, 5.2, & 5.4)

Section	Title	NJSLS	Problems
5.1	nth Roots and Rational Exponents	<i>N-RN.A.1, N-RN.A.2</i>	<i>For objectives relating to simplifying expressions with rational exponents teacher should use Kuta or other supplementary materials.</i> Big Ideas Text pg. 241: #5-10,

			21-31, 35-42, 51-54 Supplemental Text: Prentice Hall Algebra 2 pg. 389 #1-49
5.2	Properties of Rational Exponents and Radicals	N-RN.A.2	Big Ideas Text pg. 248: #1-6, 13-16, 37, 41, 42, 44, 49-52, 57, 58, 63, 65, 66, 82- 87 Supplemental Text: Prentice Hall Algebra 2 pg. 377 #1-35 and pg382 #1-12
5.4	Solving Radical Equations and Inequalities	A-REI.A.1, A-REI.A.2	Big Ideas Text pg. 266: #1-18, 21, 22, 27-32, 35, 36, 58 Supplemental Text: Prentice Hall Algebra 2 pg. 394: #1-30

Chapter 5: Rational Exponents and Radical Functions (Test: 5.3, 5.5 & 5.6)

Section	Title	<i>NJSLS</i>	Problems
5.3	Graphing Radical Functions	<i>F-IF.C.7b, F-BF.B.3</i>	Big Ideas Text pg. 256: #1-11, 19, 21, 22, 27, 64 Supplemental Text: Prentice Hall Algebra 2 pg. 417: #1-8, 12, 15, 18-21
5.5	Performing Function Operations	F-BF.A.1b	Big Ideas Text pg. 273: #5, 6, 19, 20, 28-31 Supplemental Text: Prentice Hall Algebra 2 pg. 400: #1-44
Supplement	Composition of Functions	F-BF.A.1c	<i>Supplement Composition of functions using Kuta Software</i>
5.6	Inverse of a Function	A-CED.A.4, F-BF.B.4a	Big Ideas Text pg. 281: #5 – 8, 13-20, 22, 29, 30, 73-79 Supplemental Text: Prentice Hall Algebra 2 pg. 410: #1-34

Course Expectations and Skills

- Students are required to have proficiency in all prerequisite topics for Algebra 1 and Geometry. Those who do not demonstrate proficiency will be required to seek additional help after school to close their achievement gap in order to be successful in this course.
- Students are required to learn and utilize a graphing calculator (TI-84+) in this course. They are encouraged to purchase a graphing calculator, but not required. Classroom sets are available for teachers to use as needed. In addition, free on-line graphing apps and programs are promoted by teachers for students to use on homework.
- 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: Big Ideas Algebra 2, Big Ideas Geometry, Big Ideas Algebra 1

Assessment Information

Department of Mathematics- Algebra 2 Integrated

<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%
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