ALGEBRA 1 SYLLABUS

2018-2019 Academic School-Year

1st Marking Period

Chapter 1: Solving Linear Equations (Test 1.1-1.5)

1.1 Solving Simple Equations *(NJSLS-A-CED.A.1, NJSLS-A-REI.A.1, NJSLS-A-REI.B.3)*

1.2 Solving Multi-Step Equations *(NJSLS-N-Q.A.1, NJSLS-A-CED.A.1, NJSLS-A-REI.B.3)*

1.3 Solving Equations with Variables on Both Sides *(NJSLS-A-CED.A.1, NJSLS-A-REI.B.3)*

1.4 Solving Absolute Value Equations *(NJSLS-A-CED.A.1, NJSLS-A-REI.B.3)*

1.5 Rewriting Equations and Formulas *(NJSLS-A-CED.A.4)*

Chapter 2: Solving Linear Inequalities (Test 2.1-2.6)

2.1 Writing and Graphing Inequalities (*NJSLS-A-CED.A.1)*

2.2 Solving Inequalities Using Addition or Subtraction *(NJSLS-A-CED.A.1, NJSLS-A-REI.B.3)*

2.3 Solving Inequalities Using Multiplication or Division *(NJSLS-A-CED.A.1, NJSLS-A-REI.B.3)*

2.4 Solving Multi-Step Inequalities *(NJSLS-A-CED.A.1, NJSLS-A-REI.B.3)*

2.5 Solving Compound Inequalities *(NJSLS-A-CED.A.1, NJSLS-A-REI.B.3)*

2.6 Solving Absolute Value Inequalities *(NJSLS-A-CED.A.1, NJSLS-A-REI.B.3)*

Chapter 3: Graphing Linear Functions (Test 3.1-3.5, 3.7)

3.1 Functions *(NJSLS-F-IF.A.1)*

3.2 Linear Functions *(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)*

3.3 Function Notation *(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)*

3.4 Graphing Linear Equations in Standard Form *(NJSLS-A-CED.A.2, NJSLS-F-IF.C.7a)*

3.5 Graphing Linear Equations in Slope-Intercept Form *(NJSLS-A-CED.A.2, NJSLS-F-IF.B.4, NJSLS-F-IF.C.7a, NJSLS-F-LE.B.5)*

3.7 Graphing Absolute Value Functions *(NJSLS-A-CED.A.2, NJSLS-A-REI.D.10, NJSLS-F-IF.C.7b, NJSLS-F-BF.B.3)*

2nd Marking Period

Chapter 4: Writing Linear Functions (Test 4.1-4.3)

4.1 Writing Equations in Slope-Intercept Form (*NJSLS-A-CED.A.2, NJSLS-F-BF.A.1a, NJSLS-F-LE.A.1b, NJSLS-F-LE.A.2)*

4.2 Writing Equations in Point-Slope Form (*NJSLS-A-CED.A.2, NJSLS-F-BF.A.1a, NJSLS-F-LE.A.1b, NJSLS-F-LE.A.2)*

*Supplement Writing Equations in Standard Form (*NJSLS-A-CED.A.2, NJSLS-F-BF.A.1a, NJSLS-F-LE.A.1b, NJSLS-F-LE.A.2)*

4.3 Writing Equations of Parallel and Perpendicular Lines (*NJSLS-A-CED.A.2, NJSLS-F-LE.A.2)*

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

5.1 Solving Systems of Linear Equations by Graphing (*NJSLS-A-CED.A.3, NJSLS-A-REI.C.6)*

5.2 Solving Systems of Linear Equations by Substitution (*NJSLS-A-CED.A.3, NJSLS-A-REI.C.6)*

5.3 Solving Systems of Linear Equations by Elimination *(NJSLS-A-CED.A.3, NJSLS-A-REI.C.5, NJSLS-A-REI.C.6)*

5.4 Solving Special Systems of Linear Equations *(NJSLS-A-CED.A.3, NJSLS-A-REI.C.6)*

5.6 Graphing Linear Inequalities in Two Variables *(NJSLS-A-CED.A.3, NJSLS-A-REI.D.12)*

5.7 Systems of Linear Inequalities *(NJSLS-A-CED.A.3, NJSLS-A-REI.D.12)*

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

6.1 Properties of Exponents *(NJSLS-N-RN.A.2)*

6.2 Radicals and Rational Exponents *(NJSLS-N-RN.A.1, NJSLS-N-RN.A.2)*

**6.2 is an optional extension for high performing students

6.3 Exponential Functions *(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)*

6.4 Exponential Growth and Decay *(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*

3rd Marking Period

Chapter 7: Polynomial Equations and Factoring (Test 7.1 – 7.4)

7.1 Adding and Subtracting Polynomials *(NJSLS.A.APR.A.1, NJSLS.F.IF.C.7c)*

7.2 Multiplying Polynomials *(NJSLS.A.APR.A.1)*

7.3 Special Products of Polynomials *(NJSLS.A.APR.A.1)*

7.4 Solve Polynomial Equations in Factored Form *(NJSLS.A.CED.A.1, NJSLS.F.IF.C.8a)*

Chapter 7: Polynomial Equations and Factoring (Test 7.5 – 7. 8)

7.5 Factoring $x^2 + bx + c$ *(NJSLS.A.CED.A.1, NJSLS.A.REI.B.4b, NJSLS.F.IF.C.8a)*

7.6 Factoring $ax^2 + bx + c$ *(NJSLS.A.SSE.B.3, CNJSLS.A.CED.A.1, NJSLS.A.REI.B.4b, NJSLS.F.IF.C.8a)*

7.7 Factoring Special Products *(NJSLS.A.SSE.B.3, NJSLS.A.APR.C.4, NJSLS.A.CED.A.1, NJSLS.A.REI.B.4b)*

7.8 Factoring Polynomials Completely *(NJSLS.A.SSE.B.3, NJSLS.A.CED.A.1, NJSLS.A.REI.B.4b)*

Chapter 8: Graphing Quadratic Functions (Test 8.1-8.4 and 8.6)

8.1 Graph $f(x) = ax^2$ *(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)*

8.2 Graph $f(x) = ax^2 + c$ *(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)*

8.3 Graph $f(x) = ax^2 + bx + c$ *(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)*

8.4 Graphing $f(x) = a(x - h)^2 + k$ *(NJSLS.A.CED.A.2, NJSLS.F.IF.B.4, NJSLS.F.BF.B.3)*

8.6 Comparing Linear, Exponential, and Quadratic Functions *(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)*

4th Marking Period

Chapter 9: Solving Quadratic Equations (Test 9.2 – 9.5)

9.2 Solving Quadratic Equations by Graphing *(NJSLS.A.CEDA.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)*

9.3 Solving Quadratic Equations Using Square Roots *(NJSLS.A.CED.A.1, NJSLS.A.CED.A.2, NJSLS.A.CED.A.3, NJSLS.REI.B.4b, NJSLS.A.REI.D.11)*

9.4 Solving Quadratic Equations by Completing the Square *(NJSLS.A.SSE.B.3, NJSLS.A.CED.A.1, NJSLS.F.IF.C.8a, NJSLS.A.REI.B.4a)*

9.5 Solving Quadratic Equations Using the Quadratic Formula *(NJSLS.A.REI.B.4b)*

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

11.1 Measures of Center and Variation *(NJSLS.S.ID.A.3)*

11.2 Box-and-Whisker Plots *(NJSLS.S.ID.A.1, NJSLS.S.ID.A.3)*

11.3 Shapes of Distributions *(NJSLS.S.ID.A.1, NJSLS.S.ID.A.2, NJSLS.S.ID.A.3)*

11.4 Two-Way Tables *(NJSLS.S.ID.A.1)*

Chapter 9: Solving Quadratic Equations

Chapter 10: Radical Functions and Equations (Test 9.1, 10.1, and 10.3)

9.1 Properties of Radicals *(NJSLS.A.REI.A.2)*

10.1 Graphing Square Root Functions *(NJSLS.F.IF.C.7b, NJSLS.F.BF.B.3)*

10.3 Solving Radical Equations *(NJSLS.A.REI.A.2)*

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 after school 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 (2018-2019)

Marking Period 1	Marking Period 2	Marking Period 3	Marking Period 4
Major (MAJ): Summative: 30%	Major (MAJ): Summative: 30%	Major (MAJ): Summative: 30%	Major (MAJ): Summative: 30%
Benchmark (BMK): 20%	Benchmark (BMK): 20%	Benchmark (BMK): 20%	Benchmark (BMK): 20%
Project (PRJ): 10%	Project (PRJ): 10%	Project (PRJ): 10%	Project (PRJ): 10%
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): 10%	Homework (HW): 10%	Homework (HW): 10%	Homework (HW): 10%

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course Title: Algebra 1 / Solving Linear Equations **Grade Level:** 9-10	**Unit Summary:** In this unit, students will explore the foundational skills related to solving linear equations and the connected skills of solving absolute value equations and rewriting equations and formulas. Most students will have prior experience with the Properties of Equality and techniques presented in the first three sections. It will sound familiar that whatever operation is performed on one side of the equations, the same operations must be performed on the other side of the equations to keep equality, or balance. The fourth section of the chapter applies the techniques of equation solving to the context of absolute value equations. Understanding absolute value as a function concept and not simply two vertical lines can be challenging for students. Solving literal equations in the last section requires students to see the structure of equations and perform operations on variable terms as they would perform operations on constants. Essential to success in this chapter is accuracy in computation.
Essential Question(s): • How can you use simple equations to solve real-life problems? • How can you use multi-step equations to solve real-life problems? • How can you solve an equation that has variables on both sides? • How can you solve an absolute value equation? • How can you use a formula for one measurement to write a formula for a different measurement?	**Enduring Understanding(s):** Students will be able to: • Solve simple equations. • Solve multi-step equations. • Solve equations with variables on both sides. • Solve absolute value equations. • Rewrite literal equations. • Rewrite formulas.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Solve multi-step equations and equations with variables on both sides. [*Standard*] - Create equations and inequalities in one variable and use them to solve problems. [*Standard*] - Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. [*Standard*] - Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. [*Standard*] - Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	1. *NJSLS-A-CED.A.1, NJSLS-A-REI.A.1, NJSLS-A-REI.B.3, NJSLS-N-Q.A.1,*
2. Solve absolute value equations. [*Standard*] - Create equations and inequalities in one variable and use them to solve problems. [*Standard*] - Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	2. *NJSLS-A-CED.A.1, NJSLS-A-REI.B.3*
3. Rewrite literal equations and formulas. [*Standard*] - Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	3. *NJSLS-A-CED.A.4*

Inter-Disciplinary Connections:

Real-World problem solving examples: Olympic Runners (p. 6), Temperatures (p. 7), Amusement Parks (p. 8), Floor Mats (p. 9), CD Costs (p. 9), Club Profits (p. 15), Car Repairs (p. 16), Summer Earnings (p. 17), Pool Depth (p. 17), Flags (p. 17), Boat Speeds (p. 22), Movie Rentals (p. 23), Internet Fees (p. 23), Distance to the Sun (p. 32), Irrigation System (p. 37), Temperature (p. 38), Truck Driving (p. 39), Sale Price (p. 41), Interest Rates (p. 41)

Inter-Disciplinary problem solving examples: Investments (p. 9), Batting Averages (p. 10), Biking (p. 14), Tennis (p. 17), Cheerleading (p. 29), Soccer (p. 33), Football (p. 41), Physics (p. 41)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills?

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 1.1 Solving Simple Equations:

Warm-up/Starting Options	**Explorations p. T-3**
Practice and Apply	**p. 8-10 #1-4, 6-38 even, 39-45, 50, 57-65**
Resources	**Online Dynamic Classroom has all resources available.** Review: Practice A and Practice B, Puzzle Time, **Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 1.2 Solving Multi-Step Equations:

Warm-up/Starting Options	**Explorations p. T-11**
Practice and Apply	**p. 16-18 #1, 2, 4-34 even, 35-37, 39-42, 47, 49-51, 57-65**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 1.3 Solving Equations with Variables on Both Sides:

Warm-up/Starting Options	**Explorations p. T-19**
Practice and Apply	**p. 23-24 #1, 2, 4-34 even, 38, 41-44**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice 33 odd A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review** **Real Life STEM Video: Dead Reckoning**

Section 1.4 Solving Absolute Value Equations:

Warm-up/Starting Options	Explorations p. T-27
Practice and Apply	p. 32-34 #1, 2, 4-44 even, 45-50, 60, 62-67
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 1.5 Rewriting Equations and Formulas:

Warm-up/Starting Options	Explorations p. T-35
Practice and Apply	p. 40-42 #1-2, 4-22 even, 23-34, 39-41, 47-54
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

As per IEP.

Summative Assessments:

The following assessments will be used to evaluate student learning, skill acquisition and academic achievement of the Standards of Mathematical Practice and the New Jersey Learning Standards for Mathematics listed under each chapter in the Geometry curriculum/syllabus at the conclusion of an instructional time period.

- Diagnostic Pre-Test
- Chapter Tests
- Periodic Benchmark Tests
- End-Of –Course Assessment
- Standardized Tests

Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course Title: Algebra 1 / Solving Linear Inequalities	**Unit Summary:** In this unit, students will apply the techniques used in solving linear equations to solving linear inequalities. The chapter begins with an introduction to writing and graphing inequalities. Color coding and verbal models are used to help students develop confidence in writing inequalities, a necessary skill for the chapter. The graphs are used to display and check solutions. The next three lessons focus on solving increasingly complex inequalities. Tools used in developing facility with these problems include symbolic manipulation, tables, and spreadsheets. Practice with real number operations is integrated throughout. The last two lessons of the chapter introduce compound inequalities, which are necessary in solving absolute value inequalities.
Grade Level: 9-10	
Essential Question(s): • How can you use an inequality to describe a real-life statement? • How can you use addition or subtraction to solve an inequality? • How can you use division to solve an inequality? • How can you solve a multi-step inequality? • How can you use inequalities to describe intervals on the real number line? • How can you solve an absolute value inequality?	**Enduring Understanding(s):** Students will be able to: • Write linear inequalities. • Sketch the graphs of linear inequalities. • Write linear inequalities from graphs. • Solve inequalities using addition. • Solve inequalities using subtraction. • Use inequalities to solve real-life problems. • Solve inequalities by multiplying or dividing by positive numbers. • Solve inequalities by multiplying or dividing by negative numbers. • Solve multi-step inequalities. • Use multi-step inequalities to solve real-life problems. • Write and graph compound inequalities. • Solve compound inequalities. • Use compound inequalities to solve real-life problems. • Solve absolute value inequalities. • Use absolute value inequalities to solve real-life problems.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Solve and graph multi-step inequalities. [*Standard*] - Create equations and inequalities in one variable and use them to solve problems. [*Standard*] - Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	1. *NJSLS-A-CED.A.1, NJSLS-A-REI.B.3,*
2. Solve and graph compound inequalities. [*Standard*] - Create equations and inequalities in one variable and use them to solve problems. [*Standard*] - Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	2. *NJSLS-A-CED.A.1, NJSLS-A-REI.B.3*
3. Solve and graph absolute value inequalities. [*Standard*] - Create equations and inequalities in one variable and use them to solve problems. [*Standard*] - Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	3. *NJSLS-A-CED.A.1, NJSLS-A-REI.B.3*

Inter-Disciplinary Connections:

Real-World problem solving examples: Height Restrictions (p. 57), Fishing (p. 58), Pool Temperature (p. 59), Maximum Vehicle Weight (p. 59), Subway Cost (p. 60), Circuits (p. 64), Luggage Weight (p. 65), Free Shipping (p. 65), Summer Jobs (p. 70), Buying Fish (p. 71), Temperature (p. 71), New Carpet (p. 71), Game Scores (p. 76), Account Balance (p. 77), Campground (p. 78), Fire Trucks (p. 78), Car Wash (p. 78), Electronic Devices (p. 84), Mountain Elevation (p. 85), Body Temperature (p. 91), Auto Parts (p. 91)

Inter-Disciplinary problem solving examples: Weight Lifting (p. 59), Bridge Building (p. 59), Hockey (p. 65), Woodworking (p. 78), Track Times (p. 78), Marine Biology (p. 85), Essay Contest (p. 91), Physics (p. 91)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills?

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 2.1 Writing and Graphing Linear Inequalities:

Warm-up/Starting Options	**Explorations p. T-53**
Practice and Apply	**p. 58-60 #1-4, 6-46 even, 50-54 even, 59-67**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 2.2 Solving Inequalities Using Addition or Subtraction:

Warm-up/Starting Options	**Explorations p. T-61**
Practice and Apply	**p. 65-66 #1, 2-32 even, 36-46**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review** **Real Life STEM Video: Planning Electrical Circuits**

Section 2.3 Solving Inequalities Using Multiplication or Division:

Warm-up/Starting Options	**Explorations p. T-67**
Practice and Apply	**p. 71-72 #1, 2, 4-30 even, 31, 35, 40-47**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice 33 odd A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 2.4 Solving Multi-Step Inequalities:

Warm-up/Starting Options	Explorations p. T-73
Practice and Apply	p. 77-78 #1, 2, 4-30 even, 31-36, 41-43
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 2.5 Solving Compound Inequalities:

Warm-up/Starting Options	Explorations p. T-81
Practice and Apply	p. 85-86 #1, 2, 4-18 even, 22, 23, 24-28 even, 33-40
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 2.6 Solving Absolute Value Inequalities:

Warm-up/Starting Options	Explorations p. T-87
Practice and Apply	p. 91-92 #1, 2, 4-16 even, 20-28 even, 30, 35, 38, 41-46
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

As per IEP.

Summative Assessments:

The following assessments will be used to evaluate student learning, skill acquisition and academic achievement of the Standards of Mathematical Practice and the New Jersey Learning Standards for Mathematics listed under each chapter in the Geometry curriculum/syllabus at the conclusion of an instructional time period.

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- Chapter Tests
- Periodic Benchmark Tests
- End-Of –Course Assessment
- Standardized Tests

Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course Title: Algebra 1 / Graphing Linear Functions **Grade Level:** 9-10	**Unit Summary:** In this unit, students will expand on their conceptual understanding of functions. Their understanding may be of a "function machine" where there is an input, a function is performed, and an output results. There is a pairing of the input and output, and each input is associated with exactly one output. This chapter extends this introductory understanding of functions and presents the notation of functions. Consistent use of the notation and language of functions will help students become more confident. The early part of the chapter focuses on function notation, representing functions, discrete and continuous functions, and evaluating functions. Students may be resistant to using function notation, preferring the simpler "$y =$" notation. It is hard for students to appreciate what the broader notation enables us to do because they have not learned enough at this stage. When two equations are graphed on the same axes, we can clearly refer to f and g, versus saying "the first $y =$" and "the second $y =$". We compose functions and have functions with multiple inputs, two examples where function notation is useful. The middle portion of the chapter introduces two forms of linear equations – standard and slope intercept. The last lesson of the chapter looks absolute value functions.
Essential Question(s): • What is a function? • How can you determine whether a function is linear or nonlinear? • How can you use function notation to represent a function? • How can you describe the graph of the equation $Ax + By = C$? • How can you describe the graph of the equation $y = mx + b$? • How do the values of a, h, and k affect the graph of the absolute value function?	**Enduring Understanding(s):** Students will be able to: • Determine whether relations are functions. • Find the domain and range of a function. • Identify the independent and dependent variables of a function. • Identify linear functions using graphs, tables, and equations. • Graph linear functions using discrete and continuous data. • Write real-life problems to fit data. • Use function notation to evaluate and interpret functions. • Use function notation to solve and graph functions. • Graph equations of horizontal and vertical lines. • Graph linear equations in standard form using intercepts. • Find the slope of a line. • Use the slope-intercept form of a linear equation. • Translate graphs of absolute value functions. • Stretch, shrink, and reflect graphs of absolute value functions.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Use function notation. [*Standard*] - Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x). [*Standard*] - Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. [*Standard*] - Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). [*Standard*] - Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. [*Standard*] - Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. [*Standard*] - Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. [*Standard*] - Graph linear and quadratic functions and show intercepts, maxima, and minima. [*Standard*] - Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	1. *NJSLS-F-IF.A.1, NJSLS-A-CED.A.2, NJSLS-A-REI.D.10, NJSLS-F-IF.B.5, NJSLS-F-LE.A.1b, NJSLS-F-IF.A.2 NJSLS-F-IF.C.7a, NJSLS-F-IF-C.9*
2. Graph linear equations. [*Standard*] - Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. [*Standard*] - Graph linear and quadratic functions and show intercepts, maxima, and minima. [*Standard*] - For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. [*Standard*] - Interpret the parameters in a linear or exponential function in terms of a context.	2. *NJSLS-A-CED.A.2, NJSLS-F-IF.C.7a, NJSLS-F-IF.B.4, NJSLS-F-LE.B.5*
3. Graph absolute value functions. [*Standard*] - Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. [*Standard*] - Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). [*Standard*] - Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	3. *NJSLS-A-CED.A.2, NJSLS-A-REI.D.10, NJSLS-F-IF.C.7b*

Inter-Disciplinary Connections:

Real-World problem solving examples: Bottled Juice (p. 107), Taxi Fare (p. 109), Vending Machines (p. 109), Calories (p. 115), Book Cost (p. 118), Dog Grooming (p. 119), Car Rental (p. 119), Helicopter Rides (p. 124), Restaurant Customers (p. 125), Internet Use (p. 125), Orchestra Tickets (p.125), Laptop Batteries (p. 126), Awards Banquet (p. 132), Buying Shirts (p. 133), Class Trip (p. 134), Submarine Ascent (p. 140), Snow Depth (p. 142), Truck Rental (p. 142), Selling Shoes (p. 161), Playing Pool (p. 161), Computer Games (p. 162)

Inter-Disciplinary problem solving examples: Physics (p. 110), Rock Climbing (p. 119), Speed of Light (p. 125), Construction (p. 126), Football Game (p. 133), Basketball (p. 134), Farming (p. 142)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills?

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 3.1 Functions:

Warm-up/Starting Options	**Explorations p. T-103**
Practice and Apply	**p. 108-110 #1, 2, 4-24 even, 28, 29, 36, 44-51**
Resources	**Online Dynamic Classroom has all resources available.** Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook **Advanced: Enrichment and Extension, Cumulative Review**

Section 3.2 Linear Functions:

Warm-up/Starting Options	**Explorations p. T-111**
Practice and Apply	**p. 117-120 #1-4, 6-34 even, 35-38, 40-46 even, 52, 55-61**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 3.3 Function Notation:

Warm-up/Starting Options	**Explorations p. T-121**
Practice and Apply	**p. 125-126 #1, 2-30 even, 31, 33, 34, 37-42**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice 33 odd A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review** **Real Life STEM Video: Speed of Light**

Section 3.4 Graphing Linear Equations in Standard Form:

Warm-up/Starting Options	Explorations p. T-129
Practice and Apply	p. 133-134 #1, 2, 4-26 even, 27, 30-34 even, 39-42
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 3.5 Graphing Linear Equations in Slope-Intercept Form:

Warm-up/Starting Options	Explorations p. T-135
Practice and Apply	p. 141-144 #1-4, 6-42 even, 46, 50, 54-60
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 3.7 Graphing Absolute Value Functions:

Warm-up/Starting Options	Explorations p. T-155
Practice and Apply	p. 160-162 #1-4, 6-24 even, 28-46 even, 50-56 even, 62, 64-70
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

As per IEP.

Summative Assessments:

The following assessments will be used to evaluate student learning, skill acquisition and academic achievement of the Standards of Mathematical Practice and the New Jersey Learning Standards for Mathematics listed under each chapter in the Geometry curriculum/syllabus at the conclusion of an instructional time period.

- Diagnostic Pre-Test
- Chapter Tests
- Periodic Benchmark Tests
- End-Of –Course Assessment
- Standardized Tests

Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course Title: Algebra 1 / Writing Linear Functions **Grade Level:** 9-10	**Unit Summary:** In this unit, students begin writing linear equations in slope-intercept form, point-slope form, and standard form. These forms are extended in the next lesson to include the cases of parallel and perpendicular lines.
Essential Question(s): • Given the graph of a linear function, how can you write an equation of the line? • How can you write the equation of a line when you are given the slope and a point on the line? • How can you recognize lines that are parallel or perpendicular?	**Enduring Understanding(s):** Students will be able to: • Write equations in slope-intercept form. • Use linear equations to solve real-life problems. • Write an equation of a line given its slope and a point on the line. • Write an equation of a line given two points on the line. • Use linear equations to solve real-life problems. • Identify and write equations of parallel lines. • Identify and write equations of perpendicular lines. • Use parallel and perpendicular lines in real-life problems.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Write linear equations. [*Standard*] - Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. [*Standard*] - Determine an explicit expression, a recursive process, or steps for calculation from a context. [*Standard*] - Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. [*Standard*] - Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	1. *NJSLS-A-CED.A.2, NJSLS-F-BF.A.1a, NJSLS-F-LE.A.1b, NJSLS-F-LE.A.2*
2. Use linear equations to represent real-life situations. [*Standard*] - Determine an explicit expression, a recursive process, or steps for calculation from a context. [*Standard*] - Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. [*Standard*] - Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	2. *NJSLS-F-BF.A.1a, NJSLS-F-LE.A.1b, NJSLS-F-LE.A.2*
3. Write the equations of lines parallel or perpendicular to a given line. [*Standard*] - Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. [*Standard*] - Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	3. *NJSLS-A-CED.A.2, NJSLS-F-LE.A.2*

Inter-Disciplinary Connections:

Real-World problem solving examples: World Records (p. 180), Music Studio (p. 180), Box Office Revenue (p. 180), Student Council (p. 184), Internet Service Fees (p. 184), Band Advertisement (p. 186), Beach House Rental (p. 186), Weekly Allowance (p. 186), Bike Paths (p. 192), Registration Fees (p. 192)

Inter-Disciplinary problem solving examples: Renewable Energy (p. 178), Aviation and Flight Paths (p. 190), Construction (p. 192), Hockey (p. 192)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills?

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 4.1 Writing Equations in Slope-Intercept Form:

Warm-up/Starting Options	**Explorations p. T-175**
Practice and Apply	**p. 179-180 #1, 2-28 even, 29, 30, 34, 36, 38-45**
Resources	**Online Dynamic Classroom has all resources available.** Review: Practice A and Practice B, Puzzle Time, **Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review** **Real Life STEM Video: Future Wind Power**

Section 4.2 Writing Equations in Point-Slope Form:

Warm-up/Starting Options	**Explorations p. T-181**
Practice and Apply	**p. 185-186 #1, 2-34 even, 38, 40-44**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 4.3 Writing Equations of Parallel and Perpendicular Lines:

Warm-up/Starting Options	**Explorations p. T-187**
Practice and Apply	**p. 191-192 #1, 2-26 even, 27, 28, 31, 32, 37, 38**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice 33 odd A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

As per IEP.

Summative Assessments:

The following assessments will be used to evaluate student learning, skill acquisition and academic achievement of the Standards of Mathematical Practice and the New Jersey Learning Standards for Mathematics listed under each chapter in the Geometry curriculum/syllabus at the conclusion of an instructional time period.

- Diagnostic Pre-Test
- Chapter Tests
- Periodic Benchmark Tests
- End-Of –Course Assessment
- Standardized Tests

Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course Title: Algebra 1 / Solving Systems of Linear Equations **Grade Level:** 9-10	**Unit Summary:** In this unit, students will study the three common techniques for solving a system of equations: graphing, substitution, and elimination. These techniques are presented in the first three sections of this chapter. Students are introduced to the definition of a linear system, and they lean to check their solutions. The fourth section looks at special linear systems, where there is no solution because the lines are parallel or there are infinitely many solutions because the lines coincide. The last lessons combine prior skills to allow students to graph systems of linear inequalities.
Essential Question(s): • How can you solve a system of linear equations? • How can you use substitution to solve a system of linear equations? • How can you use elimination to solve a system of linear equations? • Can a system of linear equations have no solution or infinitely many solutions? • How can you graph a linear inequality in two variables? • How can you graph a system of linear inequalities?	**Enduring Understanding(s):** Students will be able to: • Check solutions of systems of linear equations. • Solve systems of linear equations by graphing. • Use systems of linear equations to solve real-life problems. • Solve systems of linear equations by substitution. • Solve systems of linear equations by elimination. • Determine the number of solutions of linear systems. • Use linear systems to solve real-life problems. • Check solutions of linear inequalities. • Graph linear inequalities in two variables. • Use linear inequalities to solve real-life problems. • Check solutions of systems of linear inequalities. • Graph systems of linear inequalities. • Write systems of linear inequalities. • Use systems of linear inequalities to solve real-life problems.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Solve systems of linear equations. [*Standard*] - Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. [*Standard*] - Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. [*Standard*] - Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	1. *NJSLS-A-CED.A.3, NJSLS-A-REI.C.5, NJSLS-A-REI.C.6*
2. Determine the number of solutions to a system of linear equations. [*Standard*] - Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. [*Standard*] - Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	2. *NJSLS-A-CED.A.3, NJSLS-A-REI.C.6*
3. Graph systems of linear inequalities. [*Standard*] - Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. [*Standard*] - Graph the solutions to a linear inequality in two variables as a half plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	3. *NJSLS-A-CED.A.3, NJSLS-A-REI.D.12*

Inter-Disciplinary Connections:

Real-World problem solving examples: Exercise Machines (p. 240), Selling Candles (p. 240), Account Balances (p. 240), Purchasing Binders (p. 240), Hiking (p. 240), Drama Production (p. 244), Farming (p. 245), Tubing Trips (p. 245), Radio Stations (p. 246), Delivery Vans (p. 250), Oil Change (p. 251), Downloading Music (p. 251), Current Speed (p. 252), Trail Mix (p. 258), Canoe Race (p. 258), Train Travel (p. 258), Ice Skating (p. 258), Fruit Salad (p. 270), Arcade Games (p. 272), Drama Production (p. 272), Delivering Boxes (p. 272), Leisure Time (p. 277), Making Muffins (p. 279), Working Hours (p. 279)

Inter-Disciplinary problem solving examples: Construction (p. 238), Financial Planning (p. 246), Track and Field (p. 258), Carpentry (p. 271), Marine Biology (p. 279), Art Projects (p. 280)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills?

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 5.1 Solving Systems of Linear Equations by Graphing:

Warm-up/Starting Options	**Explorations p. T-235**
Practice and Apply	**p. 239-240 #1, 2-28 even, 32-36**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 5.2 Solving Systems of Linear Equations by Substitution:

Warm-up/Starting Options	**Explorations p. T-241**
Practice and Apply	**p. 245-246 #1, 2-26 even, 30, 32, 36-41**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 5.3 Solving Systems of Linear Equations by Elimination:

Warm-up/Starting Options	**Explorations p. T-247**
Practice and Apply	**p. 251-252 #1, 2-28 even, 29, 34, 36-42**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice 33 odd A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 5.4 Solving Special Systems of Linear Equations:

Warm-up/Starting Options	Explorations p. T-253
Practice and Apply	p. 257-258 #1, 2-26 even, 27, 30, 32-36
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review Real Life STEM Video: Future Wind Power

Section 5.6 Graphing Linear Inequalities in Two Variables:

Warm-up/Starting Options	Explorations p. T-267
Practice and Apply	p. 271-272 #1, 2-36 even, 39, 40, 46-48
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 5.7 Systems of Linear Inequalities:

Warm-up/Starting Options	Explorations p. T-273
Practice and Apply	p. 278-280 #1, 2-40 even, 49-55
Resources	Online Dynamic Classroom has all resources available. Review: Practice 33 odd A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review Real Life STEM Videos: Setting Fisher Limits

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

As per IEP.

Summative Assessments:

The following assessments will be used to evaluate student learning, skill acquisition and academic achievement of the Standards of Mathematical Practice and the New Jersey Learning Standards for Mathematics listed under each chapter in the Geometry curriculum/syllabus at the conclusion of an instructional time period.

- Diagnostic Pre-Test
- Chapter Tests
- Periodic Benchmark Tests
- End-Of –Course Assessment
- Standardized Tests

Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course Title: Algebra 1 / Exponential Functions and Sequences **Grade Level:** 9-10	**Unit Summary:** In this unit, students will begin working with nonlinear functions. This chapter introduces students to exponential functions. Students will revisit exponential functions in Algebra 2. The properties of exponents presented in the first lesson should be a review for students. Many of the problems involve numeric expressions, although there are algebraic expressions as well. The next lessons are about exponential functions and the attributes of exponential growth and decay functions.
Essential Question(s): • How can you write general rules involving properties of exponents? • What are some of the characteristics of the graph of an exponential function? • What are some of the characteristics of exponential growth and exponential decay functions?	**Enduring Understanding(s):** Students will be able to: • Use zero and negative exponents. • Use the properties of exponents. • Solve real-life problems involving exponents. • Identify and evaluate exponential functions. • Graph exponential functions. • Solve real-life problems involving exponential functions. • Use and identify exponential growth and decay functions. • Interpret and rewrite exponential growth and decay functions. • Solve real-life problems involving exponential growth and decay.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	**NJSLS:**
1. Use properties of exponents. [*Standard*] - Rewrite expressions involving radicals and rational exponents using the properties of exponents.	**1.** *NJSLS-N-RN.A.2*
2. Graph exponential functions. [*Standard*] - Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. [*Standard*] - For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. [*Standard*] - Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. [*Standard*] - Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). [*Standard*] - Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	**2.** *NJSLS-A-CED.A.2, NJSLS-F-IF.B.4, NJSLS-F-IF.C.7e, NJSLS-F-IF.C.9, NJSLS-F-LE.A.1c*
3. Solve real-life problems using exponential growth and decay. [*Standard*] - Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. [*Standard*] - Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	**3.** *NJSLS-F-LE.A.1c, NJSLS-F-LE.A.2*

Inter-Disciplinary Connections:

Real-World problem solving examples: Finding Volume (p. 295), Computer Chips (p. 296), Harvesting Vegetables (p. 297), Computer Memory (p. 297), Coyote Population (p. 311), Art Gallery (p. 312), Sales Report (p. 312), Bald Eagle Populations (p. 313), Music Festival Attendance (p. 314), Website Membership (p. 314), Car Value (p. 318), City Population (p. 319), Website Visitors (p. 320), Tree Growth (p. 321), Medication Dosage (p. 321), Store Sales (p. 322)

Inter-Disciplinary problem solving examples: Marine Biology (p. 295), Using Microscopes (p. 296), Chemistry (p. 297), Bacterial Populations (p. 309), Stock Prices (p. 312), Forensic Science (p. 313), Financial Planning (p. 317), Marine Biology (p. 319), Bacteria Growth (p. 320), Half-Life of Radiation (p. 321)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills?

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 6.1 Properties of Exponents:

Warm-up/Starting Options	**Explorations p. T-291**
Practice and Apply	**p. 296-298 #1-3, 4-44 even, 45, 46-58 even, 64, 67, 70-75**
Resources	Online Dynamic Classroom has all resources available. **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 6.3 Exponential Functions:

Warm-up/Starting Options	**Explorations p. T-305**
Practice and Apply	**p. 310-312 #1-3, 4-50 even, 51, 52-58 even, 64-67**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 6.4 Exponential Growth and Decay:

Warm-up/Starting Options	**Explorations p. T-313**
Practice and Apply	**p. 319-322 #1-3, 4-68 even, 71, 73-79**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice 33 odd A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

As per IEP.

Summative Assessments:

The following assessments will be used to evaluate student learning, skill acquisition and academic achievement of the Standards of Mathematical Practice and the New Jersey Learning Standards for Mathematics listed under each chapter in the Geometry curriculum/syllabus at the conclusion of an instructional time period.

- Diagnostic Pre-Test
- Chapter Tests
- Periodic Benchmark Tests
- End-Of –Course Assessment
- Standardized Tests

Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course/Unit Title: Algebra 1/Polynomials and Factoring **Grade Level(s):** 9-12	**Unit Summary:** In this unit students identify, classify, add, subtract, and multiply polynomials. They use vertical and horizontal formats to find sums and differences of polynomials and use the distributive property, tables of products and patterns, (including the FOIL pattern, the square of a binomial pattern and the sum and difference pattern) to find products. They use polynomial equations to describe and solve real-world problems. Students will then factor polynomials and use factoring to solve equations, to find the zeros of functions, and to find the roots of equations. Finally, they factor polynomials completely using a variety of techniques.
Essential Question(s): • How do I add, subtract and multiply polynomials? • How do I factor polynomials? • How do I write and solve polynomial equations to solve problems?	**Enduring Understanding(s):** Students will be able to: • Add and subtract polynomials. • Multiply polynomials. • Find special products of polynomials. • Solve polynomial equations by factoring. • Factor $x^2 + bx + c$. • Factor $ax^2 + bx + c$. • Factor special products. • Factor polynomials completely.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Adding, Subtracting and Multiplying polynomial. *[Standard] - Understand that polynomials form a system analogous to the integers namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.* **2. Factoring polynomials** *[Standard] - Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and*	1. *NJSLS.A.APR.A.1* 2. *NJSLS.A.CED.A.1, NJSLS.A.REI.B.4b, NJSLS.A.SSE.B.3.a, NJSLS.A.APR.C.4, NJSLS.F.IF.C.8a*

simple rational and exponential functions. *[Standard] - Solve quadratic equations in one variable. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.* *[Standard] - Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. Factor a quadratic expression to reveal the zeros of the function it defines.* *[Standard] - Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity $(x^2 + y^2)^2 = (x^2 - y^2)^2 + (2xy)^2$ can be used to generate Pythagorean triples.* *[Standard] - Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.* **3. Writing and solving polynomial equations** *[Standard] - Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.* *[Standard] - Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.*	**3.** *NJSLS.A.CED.A.1, NJSLS.F.IF.C.8a*

Inter-Disciplinary Connections:

Real-World problem solving examples: Investments (p. 362), Bracelets (p.363), Gym Membership (p.363), Velocity (p.363), Construction (p. 364), Hockey (p.368), Football (p.370), Optometry (p.376), Fireplace (p.380), Arches (p.382), Farming (p.388), Projector (p.389), Parking Lot (389), Construction (p.390), Wildlife Preserve (p.394), Sign Design (p.395), Swimming Pool (p.396), Envelope (p.396), Playground (p. 401), Painting (p.402), Grasshopper (p. 42), Fish tank (p.406), Birdhouse (p.407), Gift bag (p.408), Magician (p.413), Miniature Golf (p.415)

Inter-Disciplinary problem solving examples: Photography (p.370), Biology – Genealogy (p.374 and p.376), Architecture (p.375), Photography (p.390), Photography (p.402)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning LLC

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills.

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 7.1 Adding and Subtracting Polynomials:

Warm-up/Starting Options	**Explorations p. 357**
Practice and Apply	**p. 362 #1-4, 6-52 even, 53-57, 62-64**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 7.2 Multiplying Polynomials:

Warm-up/Starting Options	**Explorations p. 365**
Practice and Apply	**p. 369 # 1, 2-44 even, 47, 48, 52-58**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 7.3 Special Products of Polynomials:

Warm-up/Starting Options	Explorations p. 371
Practice and Apply	p. 375 #1, 2-34 even, 35-39, 43, 48-51
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 7.4 Solving Polynomial Equations in Factored Form:

Warm-up/Starting Options	Explorations p. 377
Practice and Apply	p. 381 #1, 2-40 even, 41, 42, 44, 49-52
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 7.5 Factoring $x^2 + bx + c$:

Warm-up/Starting Options	Explorations p. 385
Practice and Apply	p. 389 #1, 2-40 even, 41, 46, 47, 52-55
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 7.6 Factoring $ax^2 + bx + c$:

Warm-up/Starting Options	Explorations p. 391
Practice and Apply	p. 395 #1, 2-40 even, 49-56
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 7.7 Factoring Special Products:

Warm-up/Starting Options	Explorations p. 397
Practice and Apply	p. 401 #1, 2-42 even, 46, 47, 49-56
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review STEM Video and Performance Task: Birds Dropping Food

Section 7.8 Factoring Polynomials Completely:

Warm-up/Starting Options	Explorations p. 403
Practice and Apply	p. 407 #1, 2-46 even, 50-57
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

As per IEP.

Summative Assessments:

The following assessments will be used to evaluate student learning, skill acquisition and academic achievement of the Standards of Mathematical Practice and the New Jersey Learning Standards for Mathematics listed under each chapter in the Geometry curriculum/syllabus at the conclusion of an instructional time period.

- Diagnostic Pre-Test
- Chapter Tests
- Periodic Benchmark Tests
- End-Of –Course Assessment
- Standardized Tests

Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course/Unit Title: Algebra 1/Graphing Quadratic Functions **Grade Level(s):** 9-12	**Unit Summary:** In this unit students graph quadratic functions and compare them to the parent graph. They find the axis of symmetry, the vertex, and minimum or maximum values. They solve quadratic equations by factoring, graphing, using square roots, completing the square, and using the quadratic formula. Students use the discriminant to determine the number of type of solutions of a quadratic equation. Finally, students determine whether a linear, exponential, or quadratic function best models a set of data.
Essential Question(s): • How do I graph quadratic functions? • How do I compare linear, exponential, and quadratic models?	**Enduring Understanding(s):** Students will be able to: • Graph $f(x) = ax^2$. • Graph $f(x) = ax^2 + c$. • Graph $f(x) = ax^2 + bx + c$. • Graph $f(x) = a(x - h)^2 + k$. • Compare linear, exponential, and quadratic models.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Graphing quadratic functions. *[Standard] - Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.* *[Standard] - Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.* *[Standard] - For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.* *[Standard] - Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n)*	1. *NJSLS.A.CED.A.2, NJSLS.A.CED.A.3, NJSLS.F.IF.B.4, NJSLS.F.IF.B.5, NJSLS.F.IF.C.7a, NJSLS.F.IF.C.7c, NJSLS.F.BF. B.3* 2. *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,*

gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function. *[Standard]* - Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph linear and quadratic functions and show intercepts, maxima, and minima. *[Standard]* - Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. *Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.* *[Standard] - Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.* **2. Comparing linear, exponential and quadratic models** *[Standard] - Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.* *[Standard] - Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.* *[Standard] - For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.* *[Standard]* - Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph linear and quadratic functions and show intercepts, maxima, and minima. *[Standard]* - Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. *Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.* *[Standard]* - Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. *Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.* *[Standard] - Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from a context.* *[Standard] - Distinguish between situations that can be modeled with linear functions and with exponential functions. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.* *[Standard] - Distinguish between situations that can be modeled with linear functions and with exponential functions. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.* *[Standard] - Observe using graphs and tables that a quantity increasing*	*NJSLS.F.IF.C.7e,* *NJSLS.F.BF.A.1a,* *NJSLS.F.LE.A.1.b,* *NJSLS.F.LE.A.1.c,* *NJSLS.F.LE.A.3,* *NJSLS.F.LE.B.5,* *NJSLS.S.ID.B.6a*

exponentially eventually exceeds a quantity increasing linearly, quadratic ally, or (more generally) as a polynomial function. *[Standard] - Interpret the parameters in a linear or exponential function in terms of a context.* *[Standard] - Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.*	

Inter-Disciplinary Connections:

Real-World problem solving examples: Satellite Dish (p.422), Bridge (p.423), Rope Strength (p.423), Glass (p.424), Water Balloons (p.429), Patio Area (p. 430), Path of a Waterfall (p. 430), Antenna (p.430), Bridge Design (p.434),Water Balloons (p.435), Fireworks (p.437), Bridge Design (p.437), Aircraft Hanger (p. 437), Archery (p.438), Basketball (p.438), Dog Shelter (p.438), Falling Objects (p. 440), Water Fountain (p.445), Bird Diving (p.447), Football (p.447), Roller Coaster (p.448), Flare (p.448), Birdbath (p.448), Population (p.464), Subway (p.466), Rugs (p.466), Football (p.466), Bicycling (p.467), Volleyball (p.467), Population (p.467), Resorts (p.467), Pets (p.468), Tennis (p.473)

Inter-Disciplinary problem solving examples: Geometry (p.422), Velocity – Physics (p.428 and 429), Calculus (p. 438), Astronomy (p.473)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning LLC

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills.

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 8.1 Graphing $f(x) = ax^2$:

Warm-up/Starting Options	**Explorations p. 419**
Practice and Apply	**p. 423 #1, 2-26 even, 17-23, 31-35**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 8.2 Graphing $f(x) = ax^2 + c$.

Warm-up/Starting Options	**Explorations p. 425**
Practice and Apply	**p. 429 #1, 2-22 even, 27-30, 34-38 even, 42-45**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 8.3 Graphing $f(x) = ax^2 + bx + c$:

Warm-up/Starting Options	**Explorations p. 431**
Practice and Apply	**p. 436 #1, 2-36 even, 37, 38, 42, 45, 50-53**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 8.4 Graphing $f(x) = a(x - h)^2 + k$:

Warm-up/Starting Options	Explorations p. 441
Practice and Apply	p. 446 #1-4, 6-66 even, 70, 79-82
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 8.6 Comparing Linear, Exponential, and Quadratic Functions:

Warm-up/Starting Options	Explorations p. 459
Practice and Apply	p. 465 #1-4, 6-38 even, 41, 43-50
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review STEM Video and Performance Assessment: Comparing Growth Models

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

As per IEP.

Summative Assessments:

The following assessments will be used to evaluate student learning, skill acquisition and academic achievement of the Standards of Mathematical Practice and the New Jersey Learning Standards for Mathematics listed under each chapter in the Geometry curriculum/syllabus at the conclusion of an instructional time period.

- Diagnostic Pre-Test
- Chapter Tests
- Periodic Benchmark Tests
- End-Of –Course Assessment
- Standardized Tests

Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course/Unit Title: Algebra 1/Solving Quadratic Equations **Grade Level(s):** 9-12	**Unit Summary:** In this unit students solve quadratic equations by factoring, graphing, using square roots, completing the square, and using the quadratic formula. Students use the discriminant to determine the number of type of solutions of a quadratic equation. Students will simplify radical expressions, including rationalizing denominators. Students also add, subtract, and multiply radicals.
Essential Question(s): • How do I solve quadratic equations? • How do I use properties of radicals in expressions and equations?	**Enduring Understanding(s):** Students will be able to: • Solve quadratic equations by graphing. • Use square roots to solve quadratic equations. • Solve quadratic equations by completing the square. • Solve quadratic equations by the quadratic formula. • Interpret the discriminant. • Simplify radical expressions.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Using properties of radicals in expressions and equations. *[Standard] - Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.* **2. Solving quadratic equations** *[Standard] - Create equations and inequalities in one variable solving and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.* *[Standard] - Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.* *[Standard] - Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.* *[Standard] - Solve quadratic equations in one variable. Use the method of completing the square to transform any quadratic equation in x into an equation*	1. *NJSLS.A.REI.A.2* 2. *NJSLS.A.CED.A.1, NJSLS, A.CED.A.2, NJSLS.A.CED.A.3, NJSLS.REI.B.4a, NJSLS.A.REI.B.4b, NJSLS.A.REI.D.11, NJSLS.A.SSE.B.3, NJSLS.F.BF. B.3, NJSLS.F.IF.B.4.a, NJSLS.F.IF.C.7a, NJSLS.F.IF.C.7c, NJSLS.F.IF.C.8a*

of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. *[Standard] - Solve quadratic equations in one variable. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.* *[Standard]* - Explain why the *x*-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. *[Standard] - Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. Factor a quadratic expression to reveal the zeros of the function it defines.* *[Standard] - Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.* *[Standard] - Find inverse functions. Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse. For example, f(x) =2 x3 or f(x) = (x+1)/(x–1) for $x \neq 1$.* *[Standard]* - Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph linear and quadratic functions and show intercepts, maxima, and minima. *[Standard]* - Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. *Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.* *[Standard] - Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.*	

Inter-Disciplinary Connections:

Real-World problem solving examples: View of the horizon (p.483), The Parthenon (p. 483), Dropping an Object (p.486), Electric Current (p.486), Flag (p.487), Football (p.493), Golf (p.495), Volleyball (p.495), Softball (p.496), Fire Hose (p.496), Fish tank (p.500), Traffic Sign (p.500), Pond (p.501), Bleachers (p.501), Rug (p.502), Fishing (p.504), Creating a Chalk board (p.510), Throwing an object (p.513), Patio (p.513), Poster (p.513), Fencing (p.513), Knitting (p.514), Dolphins (p.521), Trout Population (p.521), Fountain (p.522), Camping (p.522), Fencing (p.523), Football (p.523), Space Travel (p.523), Boating (p.531), Amusement Parks (p.537)

Inter-Disciplinary problem solving examples: Astronomy (p.486), Investing (p.486), Literature (p.487), Architecture (p.487), History – Civil War (p.495), Architecture (p.511), Art (p.511), Geometry (p.513), Physics – Velocity (p.513), Stock Market (p.514), Architecture (p.531)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning LLC

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills.

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 9.1 Properties of Radicals:

Warm-up/Starting Options	**Explorations p. 479**
Practice and Apply	**p. 485 #1-4, 6-90 even, 91, 94, 102, 104, 108-115**
Resources	**Online Dynamic Classroom has all resources**

	available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review STEM Video and Performance Assessment: Golden Rectangle

Section 9.2 Solving Quadratic Equations by Graphing:

Warm-up/Starting Options	Explorations p. 489
Practice and Apply	p. 494 #1-4, 6-58 even, 62, 66, 67
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 9.3 Solving Quadratic Equations using Square Roots:

Warm-up/Starting Options	Explorations p. 497
Practice and Apply	p. 1, 2-30 even, 31-36, 40, 45-50
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 9.4 Solving Quadratic Equations by Completing the Square:

Warm-up/Starting Options	Explorations p. 505
Practice and Apply	p. 511 #1-4, 6-66 even, 71, 75-80
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

Section 9.5 Solving Quadratic Equations Using the Quadratic Formula:

Warm-up/Starting Options	Explorations p. 515
Practice and Apply	p. 521 #1, 2-48 even, 49, 50-62 even, 72, 74, 83-86
Resources	Online Dynamic Classroom has all resources available.

	Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook **Advanced: Enrichment and Extension, Cumulative Review**

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

As per IEP.

Summative Assessments:

The following assessments will be used to evaluate student learning, skill acquisition and academic achievement of the Standards of Mathematical Practice and the New Jersey Learning Standards for Mathematics listed under each chapter in the Geometry curriculum/syllabus at the conclusion of an instructional time period.

- Diagnostic Pre-Test
- Chapter Tests
- Periodic Benchmark Tests
- End-Of –Course Assessment
- Standardized Tests

Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

Black Horse Pike Regional School District Curriculum Template

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course/Unit Title: Algebra 1/Radical Functions and Equations	**Unit Summary:** In this unit students graph square root functions. They solve radical equations, including equations with extraneous solutions.
Grade Level(s): 9-12	
Essential Question(s): • How do I graph square root functions? • How do I solve radical equations?	**Enduring Understanding(s):** Students will be able to: • Graph square root functions. • Solve radical equations.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Graphing Square Root Functions *[Standard] - Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph square root, cube root, and piecewise-defined functions including step functions and absolute value functions.* **2. Using properties of radicals in expressions and equations.** *[Standard] - Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.*	1. *NJSLS.F.IF.C.7b* 2. *NJSLS.A.REI.A.2*

Inter-Disciplinary Connections:

Real-World problem solving examples: Van Speed (p.549), Fire Hose (p.549), Long Jump (p.550), Pendulum (p.563), BASE Jumping (p.564), Hair Dryer (p. 565), Trapeze Artist (p.565)

Inter-Disciplinary problem solving examples: Physics – Velocity (p.547 and 549), Geometry (p.566), Music (p.566)

Students will engage with the following text:

Big Ideas Math, Algebra 1 2019 by Big Ideas Learning LLC

Students will write:

Students will define and compare/contrast given terms. Students will express their knowledge and skills in their own words, organize their thinking about the content, and write explanations to solve problems. Students will also relate real world situations using algebra terminology.

PART III: TRANSFER OF KNOWLEDGE AND SKILLS

DESCRIBE THE LEARNING EXPERIENCE.

How will students uncover content and build skills.

Opportunities for developing students' understanding in this chapter include: investigating algebra activities, problem solving workshops, modeling examples, using real-life application or other hands on activities such as projects. Technology such as animated algebra, Smart Board, and graphing calculators will also be explored through the learning experience. Other interests could include, but is not limited to alternative lesson openers, using note-taking strategies, math and history applications, and interdisciplinary applications.

Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 10.1 Graphing Square Root Functions:

Warm-up/Starting Options	**Explorations p. 543**
Practice and Apply	**p. 548 #1-4, 6-50 even, 54, 58-63**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review** **STEM Video and Performance Assessment: Tsunami!**

Section 10.3 Solving Radical Equations:

Warm-up/Starting Options	**Explorations p. 559**
Practice and Apply	**p. 564 #1, 2-70 even, 81, 84-89**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time,**

	Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

PART IV: EVIDENCE OF LEARNING

IDENTIFY THE METHODS BY WHICH STUDENTS WILL DEMONSTRATE THEIR UNDERSTANDING OF CONTENT AND THEIR ABILITY TO APPLY SKILLS. IDENTIFY BLOOM'S LEVELS.

Formative Assessments:

The effectiveness of the instructional program will be based on numerous activities and strategies including the following: teacher observations, students collaborating with peers, questioning strategies, student record-keeping, quizzes, exit/admit assignments, peer/self-assessments, learning/response logs, discussions and practice presentations.

Accommodations/Modifications:

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Summative Assessments:

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Accommodations/Modifications:

As per IEP.

Performance Assessments:

Performance Tasks, Projects, Display of Student Work

Accommodations/Modifications:

As per IEP.

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ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Course Name: Algebra 1

Course Number: 031300

PART I: UNIT RATIONALE

WHY ARE STUDENTS LEARNING THIS CONTENT AND THESE SKILLS?

Course/Unit Title: Algebra 1/Data Analysis **Grade Level(s):** 9-12	**Unit Summary:** In this unit students interpret data displays. Students describe the shapes of data distributions. Students represent data in different ways. Finally students analyze data.
Essential Question(s): • How can you describe the variation of a data set? • How can you use a box-and-whisker plot to describe a data set? • How can you use a histogram to characterize the basic shape of a distribution? • How can you read and make a two-way table?	**Enduring Understanding(s):** Students will be able to: • Compare the mean, median, and mode of a data set. • Find the range and standard deviation of a data set. • Identify the effects of transformations on data. • Use box-and-whisker plots. • Interpret box-and-whisker plots. • Use box-and-whisker plots to compare data sets. • Describe the shapes of distributions. • Use the shapes of data distributions to choose appropriate measures. • Compare data distributions. • Find and interpret marginal frequencies. • Make two-way tables. • Find relative and conditional relative frequencies. • Use two-way tables to recognize associations in data.

PART II: INSTRUCTIONAL STRATEGIES AND RESOURCES

DESCRIBE THE LEARNING TARGETS.

After each target, identify the New Jersey Student Learning Standards that are applicable

Learning Target	NJSLS:
1. Interpret Data Displays *[Standard] – Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).* **2. Analyze Data Distributions** *[Standard] – Use statistics appropriate to the shape of the data distribution to compare center(median, mean) and spread (interquartile range, standard deviation) of two of more different data sets.* *[Standard] – Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).*	1. *NJSLS.S.ID.A.3* 2. *NJSLS.S.ID.A.2, NJSLS.S.ID.A.3* 3. *NJSLS.S.ID.A.1, NJSLS.S.ID.B.5*

3. Represent Data in Different Ways *[Standard] – Represent data with plots on the real number line (dot plots, histograms, and box plots).* *[Standard] – Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.*	

Inter-Disciplinary Connections:

Real-World problem solving examples: Altitudes of Airplanes (p.589), Wages (p.589), Movies (p.590), Polar Bears (p.590), Emails (p.590), Golfers (p.590), Baseball (p.591), Bowling (p.591), Favorite Food (p.592), Adventure Club (p.592), Basketball (p.594), Shopping (p.596), Studying (p.597), Fishing (p.597), Prices of Entrees (p.597), Baseball (p.598), Car Sales (p.598), Cell Phones (p.598), Speed (p.601), Shoe Ownership (p.603), Volunteer Hours (p. 604), Online Hours (p.604), ATM Withdrawals (p.604), IQ Scores (p.605), Temperature (p.605), Prices of Entrees (p.605), Wait times at a Restaurant (p.606), Waterfall Height (p.608), Mountain Bikes (p.608), Cell Phones (p.610), Exercise Habits (p.613), Computer Sharing (p.613), School Activities (p.614), Exercise Preference (p.615), Fundraiser (p.615), Menu (p.615), Mascot (p.616), TV Preferences (p.616), Skiing (p.616), Movies (p.616), Tickets (p.616)

Inter-Disciplinary problem solving examples: Stock Market (p.590), College Majors (p.590), Music (p.595), Music (p.606), Time Spent on a Project (p.608), Quiz Scores (p.608), Presentations (p.608), Music (p.611), Majors (p.612), Degrees (p.614), Foreign Language (p.615)

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Suggested warm-up activities, instructional strategies/activities, and assignments:

Section 11.1 Measures of Central Tendency and Variation:

Warm-up/Starting Options	**Explorations p. 585**
Practice and Apply	**p. 590 #1-4, 6-30 even, 31, 32, 34, 39-47**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 11.2 Box-and-Whisker Plots:

Warm-up/Starting Options	**Explorations p. 593**
Practice and Apply	**p. 597 #1, 2-16 even, 17-21, 24-27**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook** **Advanced: Enrichment and Extension, Cumulative Review**

Section 11.3 Shapes of Distributions:

Warm-up/Starting Options	**Explorations p. 599**
Practice and Apply	**p.604 #1, 2-22 even, 25-27**
Resources	**Online Dynamic Classroom has all resources available.** **Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook**

	Advanced: Enrichment and Extension, Cumulative Review STEM Video and Performance Assessment: Shoe Ownership

Section 11.4 Two-Way Tables:

Warm-up/Starting Options	Explorations p. 609
Practice and Apply	p. 614 #1-4, 6-30 even, 33, 34
Resources	Online Dynamic Classroom has all resources available. Review: Practice A and Practice B, Puzzle Time, Student Journal, and Skills Review Handbook Advanced: Enrichment and Extension, Cumulative Review

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Performance Assessments:

Performance Tasks, Projects, Display of Student Work

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