CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

Algebra 1 / Algebra 1 CP Curriculum Guide

Pacing Guide **Algebra I is a full year course that meets on a rotating basis for three (3) 55-minute blocks and one (1) 40-minute block for every five (5) day cycle.**	**Unit 1 (Chapter 1):** Connections to Algebra. 1 week **Unit 2 (Chapter 3):** Solving Linear Equations. 1-2 weeks **Unit 3 (Chapter 4):** Graphing Linear Equations and Functions. 2-3 weeks **Unit 4 (Chapter 5):** Writing Linear Equations. 1-2 weeks **Unit 5 (Chapter 6):** Solving and Graphing Linear Inequalities. 1-2 weeks **Unit 6 (Chapter 7):** Systems of Linear Equations and Inequalities. 2-3 weeks **Unit 7 (Chapter 8):** Exponents and Exponential Functions. 2-3 weeks **Unit 8 (Chapter 9):** Quadratic Equations and Functions. 3-4 weeks **Unit 9 (Chapter 10):** Polynomials and Factoring. 3-5 weeks **Unit 10 (Sec. 1.6, 6.7, online materials):** Probability and Data Analysis. 2-3 weeks

21st Century Skills Standards:	
9.1 Personal Finance Literacy	**9.1.12.A.2:** Differentiate between taxable and nontaxable income. **9.1.12.D.3:** Summarize how investing builds wealth and assists in meeting long-and short-term financial goals. **9.1.12.D.5:** Justify the use of savings and investment options to meet targeted goals.
9.2 Career Awareness	**9.2.12.C.1:** Review career goals and determine steps necessary for attainment. **9.2.12.C.4:** Analyze how economic conditions and social changes influence employment trends and future education. **9.2.12.C.5:** Research career opportunities in the United States and abroad that require knowledge of world languages and diverse cultures.
Technology Standards	**8.1.12.A.CS1:** Understand and use technology systems.

Interdisciplinary Connections	SCIENCE HS-PS4-1 The wavelength and frequency of a wave are related to one another by the speed of travel of the wave, which depends on the type of wave and the medium through which it is passing. HS-PS1-8 Spontaneous radioactive decays follow a characteristic exponential decay law. Nuclear lifetimes allow radiometric dating to be used to determine the ages of rocks and other materials.
NJSLS Mathematical Practices – These practices are demonstrated throughout the curriculum.	1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.
NJSLS Career Ready Practices – These practices are demonstrated throughout the curriculum	CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP9. Model integrity, ethical leadership and effective management. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence.

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Differentiation/Accommodations/Modifications

Note: Each district should review the various strategies noted below and determine which are applicable for their population within varied grade levels and languages and make edits where needed.

Gifted and Talented	English Language Learners	Students with Disabilities	Students at Risk of School Failure
(content, process, product and learning environment) **Extension Activities:** Conduct research and provide presentation of mathematical topics. Design surveys to generate and analyze data to be used in discussion. Use of higher level questioning techniques. Provide assessments at a higher level of thinking.	**Modifications for Classroom:** **Modifications for Homework/Assignments** Modified assignments. Extended time for assignment completion as needed. Use graphing calculator. Highlight formulas.	*(appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team)* **Modifications for Classroom:** Ask students to restate information, directions, and assignments. Repetition and practice. Model skills / techniques to be mastered. Extended time to complete class work. Provide copy of classnotes. Preferential seating to be mutually determined by the student and teacher. Students may request books online, on tape/CD, as available and appropriate. Assign peer helper in the class setting.	**Modifications for Classroom:** Ask students to restate information, directions, and assignments. Repetition and practice. Model skills / techniques to be mastered. Extended time to complete class work. Provide copy of classnotes. Preferential seating to be mutually determined by the student and teacher. Students may request books online, on tape/CD, as available and appropriate. Assign peer helper in the class setting. Provide oral reminders and check student work during independent work time. Assist student with long and short

		Provide regular parent / school communication Provide oral reminders and check student work during independent work time. Assist student with long and short term planning of assignments **Modifications for Homework** Extended time to complete assignments. Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases. Provide the student with clearly stated (written) expectations and grading criteria for assignments. **Modification for Assessments** Extended time on classroom tests and quizzes. Student may take / complete tests in an alternate setting as needed.	term planning of assignments Provide regular parent / school communication. Assign peer helper in the class setting. Provide oral reminders and check student work during independent work time. Assist student with long and short term planning of assignments **Modifications for Homework** Extended time to complete assignments. Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases. Provide the student with clearly stated (written) expectations and grading criteria for assignments. **Modification for Assessments** Extended time on classroom tests and quizzes.

		Restate, reread, and clarify directions/questions. Distribute study guide for classroom tests. Establish procedures for accommodations / modifications for assessments.	Student may take / complete tests in an alternate setting as needed. Restate, reread, and clarify directions/questions. Distribute study guide for classroom tests. Establish procedures for accommodations / modifications for assessments.

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CONTENT: Chapter 1

Theme: Connections to Algebra

Essential Questions:
What is a variable?
What rules are used to simplify expressions with exponents?
How is the order of operations applied when simplifying an expression?
What inverse operations are used in order to solve a one-step or multi-step equation?
How do you interpret data on a graph?
What is a function?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** NJSLS MA 9-12 CED.A.1, CED.A.2, CED.A.3 F.IF.A.1 N.Q.A.1, N.Q.A.2, N.Q.A.3 SSE.A.1 REI.B.3 TECH 8.1.12.A.CS1
• Section 1.1 (Variables in Algebra) • Section 1.2 (Exponents and Powers) • Section 1.3 (Order of Operations) • Section 1.4 (Equations and Inequalities) • Section 1.5 (A Problem Solving Plan Using Models) • Section 1.6 (Tables and Graphs) • Section 1.7 (An Introduction to Functions)	• Evaluate expressions • Apply order of operations • Write expressions • Write equations and inequalities • Use a problem solving plan • Represent functions as rules and tables • Represent functions as graphs	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	**Time Frame:** 3-4 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils.

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CONTENT: Chapter 3

Theme: Solving Linear Equations

Essential Questions:
What are the four inverse operations?
How are inverse operations used to solve equations?
How can you check that your solution is correct?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 N.Q.A.1 CED.A.1, CED.A.4 REI.B.3 PFL 9.2.12.C.4 **Time Frame:** 3-4 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils.
• Section 3.1-3.4 Solving: -One-step equations -Two-step equations -Multi-step equations -With variables on both sides	• Solve one-step equations • Solve two-step equations • Solve multi-step equations • Solve equations with variables on both sides • Check their solution	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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<table>
<tr><td colspan="4">CONTENT: Chapter 3</td></tr>
<tr><td colspan="4">Theme: Solving Linear Equations</td></tr>
<tr><td colspan="4">Essential Questions:
How do you rewrite equations in terms of a variable?</td></tr>
<tr>
<td>Content (As a result of this learning segment, students will know…)

• Section 3.7
(Formulas and Functions)</td>
<td>Skills (As a result of this learning segment, students will be able to…)

• Represent situations using algebraic symbols
• Analyze situations using algebraic symbols</td>
<td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td>
<td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
N-Q.A.1
CED.A.1, CED.A.4
REI.B.3
PFL9.2.12.C.4

Time Frame:
1-2 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: TI-83/84 plus / TI-30XS

Smart board, internet research and activities, graph papers, color pencils.</td>
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<table>
<tr><td colspan="4">CONTENT: Chapter 3</td></tr>
<tr><td colspan="4">Theme: Solving Linear Equations</td></tr>
<tr><td colspan="4">Essential Questions:
How do you solve proportions using cross-products?
What is a rate?
What is a ratio?
How do you write a percent as a decimal?
How do you write a decimal as a percent?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 3.8
(Rates, Ratios, and Percents)</td><td>Skills (As a result of this learning segment, students will be able to…)

• Solve proportions
• Simplify ratios
• Convert percents to decimals
• Convert decimals to percents
• Apply percents in real-life problems</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
N-Q.A.1
CED.A.1
CED.A.4
REI.B.3
PFL 9.2.12.C.5

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: TI-83/84 plus / TI-30XS

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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CONTENT: Chapter 4

Theme: Graphing Linear Equations and Functions

Essential Questions:
How do you plot points in the coordinate plane?
What do the two numbers in an ordered pair represent?
How do you read a point off of a graph?
Where are the four quadrants located?
What is a scatter plot?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 F.IF.C.6, C.7, C.7a PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5 **Time Frame:** 1-2 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils.
• Section 4.1 (Coordinates and Scatter Plots)	• Plot points in the coordinate plane • Label the four quadrants • Identify the ordered pair of a point plotted on a coordinate plane • Identify what a scatter plot is and whether it has a positive or negative correlation	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CONTENT: Chapter 4

Theme: Graphing Linear Equations and Functions

Essential Questions:
What is slope-intercept form?
How can a table of values be used to graph a linear equation?
How are horizontal and vertical lines graphed?
What are the four types of slopes?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 F.IF.A.6, F.IF.A.7, F.IF.7a PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5 **Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils.
• Section 4.2 (Graphing Linear Equations)	• Use a table of values to graph a linear equation • Identify what type of slope the line has after graphing • Check whether an ordered pair is a solution to a linear equation	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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CONTENT: Chapter 4

Theme: Graphing Linear Equations and Functions

Essential Questions:
What is standard form?
How can intercepts be used to graph a linear equation?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 F.IF.A.6, F.IF.A.7, F.IF.7a PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5
• Section 4.3 (Quick graphs using intercepts)	• Use intercepts to graph a linear equation • Identify what type of slope the line has after graphing • Check whether an ordered pair is a solution to a linear equation • Identify the x-intercept and y-intercept of a graph	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	**Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils.

CONTENT: Chapter 4

Theme: Graphing Linear Equations and Functions

Essential Questions:
What ratio is used to represent slope?
What formula is used to find slope?
How do you read a graph to determine its slope?
What kind of slope do horizontal and vertical lines have?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 F.IF.A.6, F.IF.A.7, F.IF.7a PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5 **Time Frame:** 1-2 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils.
• Section 4.4 (Slope of a line)	• Find the slope of a line using rise over run • Find the slope of a line using the slope formula • Read the slope of a graph • Determine a line's slope based on its sign	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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CONTENT: Chapter 4

Theme: Graphing Linear Equations and Functions

Essential Questions:
What is slope-intercept form?
What is a y-intercept?
How is an equation rewritten in slope-intercept form?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 F.IF.A.6, F.IF.A.7, F.IF.7a PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5 **Time Frame:** 1-2 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils.
• Section 4.6 (Graphing lines in slope-intercept form)	• Rewrite an equation in slope-intercept form • Graph an equation in slope-intercept form • Identify the slope of a line based on a given graph	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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CONTENT: Chapter 4

Theme: Graphing Linear Equations and Functions

Essential Questions:
What is a relation?
What is a function?
How do you determine whether a relation is a function?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 F.IF.A.6, F.IF.A.7, F.IF.7a PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5 **Time Frame:** 1-2 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils.
• Section 4.8 (Functions and Relations)	• Determine whether a relation is a function: Graphically Using a list of ordered pairs In a real-life situation	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
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CONTENT: Chapter 5

Theme: Writing Linear Equations

Essential Questions:
What is slope-intercept form?
Where is the y-intercept located on a graph?
How is slope determined using a graph?
How is an equation written when given slope and a point?
How is an equation written when given two points?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 F-LE.A.2 PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5 **Time Frame:** 1 day **Materials**: Textbook: 2004 *McDougal Littell* Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2 Graphing calculators: Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 5.1 (Writing equations in slope-intercept form)	• Write an equation in slope-intercept form when given: Slope and y-intercept Slope and a point Two points	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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<table>
<tr><td colspan="4">CONTENT: Chapter 5</td></tr>
<tr><td colspan="4">Theme: Writing Linear Equations</td></tr>
<tr><td colspan="4">Essential Questions:
What is slope-intercept form?
Where is the y-intercept located on a graph?
How is slope determined using a graph?
How is an equation written when given slope and a point?
How is an equation written when given two points?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 5.1
(Writing linear equations in slope-intercept form)
• Section 5.2
(Writing linear equations given slope and a point)
• Section 5.3
(Writing linear equations using two points)</td><td>Skills (As a result of this learning segment, students will be able to…)

• Write an equation in slope-intercept form when given:
Slope and y-intercept
Slope and a point
Two points</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.2
F-LE.A.2
PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2

Graphing calculators: Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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<table>
<tr><td colspan="4">CONTENT: Chapter 5</td></tr>
<tr><td colspan="4">Theme: Writing Linear Equations</td></tr>
<tr><td colspan="4">Essential Questions:
What is point-slope form?
How do you find the slope of a line given two points?
What is slope-intercept form?</td></tr>
<tr>
<td>Content (As a result of this learning segment, students will know…)

• Section 5.5
(Point-slope form of a linear equation)</td>
<td>Skills (As a result of this learning segment, students will be able to…)

• Write an equation in point-slope form when given:

Slope and y-intercept
Slope and a point
Two points</td>
<td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td>
<td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.2
F-LE.A.2
PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5

Time Frame:
1-2 days

Materials:
Textbook: 2004 McDougal Littell Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2

Graphing calculators: Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td>
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CONTENT: Chapter 5

Theme: Writing Linear Equations

Essential Questions:
How do you write an equation in standard form?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 F-LE.A.2 PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5
• Section 5.6 (Standard form of a linear equation)	• Rewrite an equation in standard form	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	**Time Frame:** 1-2 days
			Materials: Textbook: 2004 *McDougal Littell* Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2 Graphing calculators: Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.

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CONTENT: Chapter 6

Theme: Solving and Graphing Linear Inequalities

Essential Questions:
What is a linear inequality?
How are solutions graphed on number line?
What determines an open or closed circle when graphing a solution on a number line?
What must you do when dividing or multiplying by a negative when solving a linear inequality?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.1 REI.B.3 REI.D.12 PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5 **Time Frame:** 1-2 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2 Graphing calculators: Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 6.1 (Solving one-step linear inequalities) • Section 6.2 (Solving multi-step linear inequalities)	• Solve a one-step and multi-step inequality • Recall that when multiplying or dividing by a negative, the inequality sign must be switched • Decide when an open or closed are used based on the solution • Graph the solution to a linear inequality	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
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CONTENT: Chapter 6

Theme: Solving and Graphing Linear Inequalities

Essential Questions:
What is a compound inequality?
What are the two types of compound inequalities?
What do the two types of compound inequalities look like on a number line?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.1 REI.B.3 REI.D.12 PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5 **Time Frame:** 2-4 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2 Graphing calculators: Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 6.3 (Solving compound inequalities)	• Using a given graph on a number line, identify whether the compound inequality represents an "and" or "or" inequality • Solve and graph an "and" inequality • Solve and graph an "or" inequality	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

CONTENT: Chapter 6

Theme: Solving and Graphing Linear Inequalities

Essential Questions:
What many solutions does an absolute value equation have?
What steps have to be taken to solve an absolute value inequality?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.1 REI.B.3 REI.D.12 PFL 9.1.12.A.2, 9.1.12.D.3, 9.1.12.D.5 **Time Frame:** 2- 4 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2 Graphing calculators: Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 6.4 (Solving absolute value equations and inequalities)	• Solve an absolute value equation • Graph the solutions to an absolute value equation on a number line • Solve an absolute value inequality • Decide whether an absolute value inequality represents an "and" or "or" compound inequality • Write the final answer to an "and" absolute value inequality as a compound inequality	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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<tr><td colspan="4">CONTENT: Chapter 7</td></tr>
<tr><td colspan="4">Theme: Systems of Linear Equations and Inequalities</td></tr>
<tr><td colspan="4">Essential Questions:
What are three different techniques used to solve a system of equations?
How does solving a system of equations relate to a real-world scenario?
How does a system of inequalities differ from a system of equations?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 7.1 Solving Linear Systems by Graphing</td><td>Skills (As a result of this learning segment, students will be able to…)

• Solve a system of linear equations by graphing.
• Model a real-life problem using a system of equations.
• Check a solution to a system of equations.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.2, A.3
REI.C.6
REI.D.12

Time Frame:
1-2 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
</table>

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ALGEBRA 1 / ALGEBRA 1 CP

CONTENT: Chapter 7

Theme: Systems of Linear Equations and Inequalities

Essential Questions:
What are three different techniques used to solve a system of equations?
How does solving a system of equations relate to a real-world scenario?
How does a system of inequalities differ from a system of equations?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 and A3 REI.C.5 and C6 REI.D.12
• Section 7.2 Solving Linear Systems by Substitution.	• Solve a system of equations using substitution method. • Model a real-life problem using a system of equations.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	**Time Frame:** 3-4 days
			Materials: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.

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What are three different techniques used to solve a system of equations?
How does solving a system of equations relate to a real-world scenario?
How does a system of inequalities differ from a system of equations?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 7.3 Solving Linear Systems by Linear Combinations (Elimination Method)</td><td>Skills (As a result of this learning segment, students will be able to…)

• Solve a system of equations using elimination method.
• Model a real-life problem using a system of equations.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.2 and A3
REI.C.5 and C6

Time Frame:
3-4 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
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CONTENT: Chapter 7

Theme: Systems of Linear Equations and Inequalities

Essential Questions:
What are three different techniques used to solve a system of equations?
How does solving a system of equations relate to a real-world scenario?
How does a system of inequalities differ from a system of equations?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 and A3 REI.C.5 and C6 **Time Frame:** 1-2 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 7.4 Applications of Linear Systems	• Model a real-life problem using a system of equations. • Choose the best method to solve a system of linear equations.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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CONTENT: Chapter 7

Theme: Systems of Linear Equations and Inequalities

Essential Questions:
What are three different techniques used to solve a system of equations?
How does solving a system of equations relate to a real-world scenario?
How does a system of inequalities differ from a system of equations?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 CED.A.2 and A3 REI.C.5 and C6 **Time Frame:** 1-2 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 7.5 Special Types of Linear Systems	• Identify linear systems as having one solution, no solution, or infinitely many solutions. • Model real-life problems using a linear system.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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What are three different techniques used to solve a system of equations?
How does solving a system of equations relate to a real-world scenario?
How does a system of inequalities differ from a system of equations?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 7.6 Solving Systems of Linear Inequalities</td><td>Skills (As a result of this learning segment, students will be able to…)

• Solve a system of linear inequalities by graphing.
• Use a system of linear inequalities to model a real-life situation.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.2 and A3
REI.C.5 REI.D.12

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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CONTENT: Chapter 8

Theme: Exponents and Exponential Functions

Essential Questions:
How do you use properties of exponents to simplify an exponential expression?
What real-life situations can be modeled by an exponential growth function?
What real-life situations can be modeled by an exponential decay function?
What is the difference between growth factor and decay factor?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 SSE.B.3c **Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 8.1 Multiplication Properties of Exponents	• Use properties of exponents to multiply exponential expressions	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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<tr><td colspan="4">Essential Questions:
How do you use properties of exponents to simplify an exponential expression?
What real-life situations can be modeled by an exponential growth function?
What real-life situations can be modeled by an exponential decay function?
What is the difference between growth factor and decay factor?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 8.2 Zero and Negative Exponents</td><td>Skills (As a result of this learning segment, students will be able to…)

• Evaluate powers that have zero and negative exponents.
• Graph exponential functions.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
SSE.B.3c
N-RN.A.1

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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CONTENT: Chapter 8

Theme: Exponents and Exponential Functions

Essential Questions:
How do you use properties of exponents to simplify an exponential expression?
What real-life situations can be modeled by an exponential growth function?
What real-life situations can be modeled by an exponential decay function?
What is the difference between growth factor and decay factor?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 SSE.B.3c N-RN.A.1 **Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 8.3 Division Properties of Exponents	• Use the division properties of exponents to evaluate powers and simplify expressions. • Use the division properties of exponents to find a probability.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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<tr><td colspan="4">Essential Questions:
How do you use properties of exponents to simplify an exponential expression?
What real-life situations can be modeled by an exponential growth function?
What real-life situations can be modeled by an exponential decay function?
What is the difference between growth factor and decay factor?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 8.4 Scientific Notation</td><td>Skills (As a result of this learning segment, students will be able to…)

• Use scientific notation to represent numbers.
• Use scientific notation to describe real-life situations.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
SSE.B.3c
N-RN.A.1

Time Frame:
1-2 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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<tr><td colspan="4">Essential Questions:
How do you use properties of exponents to simplify an exponential expression?
What real-life situations can be modeled by an exponential growth function?
What real-life situations can be modeled by an exponential decay function?
What is the difference between growth factor and decay factor?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 8.5 Exponential Growth Functions</td><td>Skills (As a result of this learning segment, students will be able to…)

• Write and use models for exponential growth.
• Graph models for exponential growth.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.2
F.IF.C.7e
F.IF.BF.5
F.LE.A.1,A.2.
F.LE.B.5
9.2.12.C.1
9.2.12.C.4
9.1.12.D.3
9.1.12.D.5

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6
Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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<tr><td colspan="4">Essential Questions:
How do you use properties of exponents to simplify an exponential expression?
What real-life situations can be modeled by an exponential growth function?
What real-life situations can be modeled by an exponential decay function?
What is the difference between growth factor and decay factor?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 8.6 Exponential Decay Functions</td><td>Skills (As a result of this learning segment, students will be able to…)

• Write and use models for exponential decay.
• Graph models for exponential decay.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.2
F.IF.C.7e
F.IF.BF.5
F.LE.A.1,A.2.
F.LE.B.5

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
</table>

CONTENT: Chapter 9

Theme: Quadratic Equations and Functions

Essential Questions:
How do we graph a quadratic function?
What do the roots of a quadratic function represent?
What are different ways to solve a quadratic function?
How do you determine the number of solutions a quadratic function has?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 REI.B.4 **Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 9.1 Solving Quadratic Equations by Finding Square Roots	• Evaluate and approximate square roots. • Solve a quadratic equation by finding square roots.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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CONTENT: Chapter 9

Theme: Quadratic Equations and Functions

Essential Questions:
How do we graph a quadratic function?
What do the roots of a quadratic function represent?
What are different ways to solve a quadratic function?
How do you determine the number of solutions a quadratic function has?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 REI.B.4 **Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 9.2 Simplifying Radicals.	• Use properties of radicals to simplify radicals. • Use quadratic equations to model real-life problems.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

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<tr><td colspan="4">Theme: Quadratic Equations and Functions</td></tr>
<tr><td colspan="4">Essential Questions:
How do we graph a quadratic function?
What do the roots of a quadratic function represent?
What are different ways to solve a quadratic function?
How do you determine the number of solutions a quadratic function has?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 9.3 Graphing Quadratic Functions</td><td>Skills (As a result of this learning segment, students will be able to…)

• Sketch the graph of a quadratic function.
• Use quadratic models in real-life settings.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.2 and A.3
REI.B.4
REI.D.11
F.IF.B.4
F.IF.C.7a and F.IF.C.7c
F.BF.B.3

Time Frame:
3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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How do we graph a quadratic function?
What do the roots of a quadratic function represent?
What are different ways to solve a quadratic function?
How do you determine the number of solutions a quadratic function has?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 9.4 Solving Quadratic Equations by Graphing.</td><td>Skills (As a result of this learning segment, students will be able to…)

• Solve a quadratic equation graphically.
• Use quadratic models in real-life settings.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.2 and A.3
REI.B.4
REI.D.11
F.IF.B.4
F.IF.C.7a and F.IF.C.7c
F.BF.B.3

Time Frame:
2 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

CONTENT: Chapter 9

Theme: Quadratic Equations and Functions

Essential Questions:
How do we graph a quadratic function?
What do the roots of a quadratic function represent?
What are different ways to solve a quadratic function?
How do you determine the number of solutions a quadratic function has?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 REI.B.4 **Time Frame:** 3-4 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 9.5 Solving Quadratic Equations by the Quadratic Formula	• Use the quadratic formula to solve a quadratic equation. • Use quadratic models for real-life situations.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

CONTENT: Chapter 9

Theme: Quadratic Equations and Functions

Essential Questions:
How do we graph a quadratic function?
What do the roots of a quadratic function represent?
What are different ways to solve a quadratic function?
How do you determine the number of solutions a quadratic function has?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 REI.B.4 **Time Frame:** 1-2 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 9.6 Applications of the Discriminant	• Use the discriminant to find the number of solutions of a quadratic equation. • Apply the discriminant to solve real-life problems.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

CONTENT: Chapter 10

Theme: Polynomials and Factoring

Essential Questions:
How do you perform operations with polynomials?
What are different techniques of factoring polynomials?
How can you use factoring to solve a quadratic equation?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 A-APR.A.1 F.IF.C.7c **Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 10.1 Adding and Subtracting Polynomials	• Add and subtract polynomials. • Use polynomials to model real-life situations.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
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ALGEBRA 1 / ALGEBRA 1 CP

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How do you perform operations with polynomials?
What are different techniques of factoring polynomials?
How can you use factoring to solve a quadratic equation?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 10.2 Multiplying Polynomials.</td><td>Skills (As a result of this learning segment, students will be able to…)

• Multiply two polynomials.
• Use polynomial multiplication in real-life situations.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
A-APR.A.1

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

CONTENT: Chapter 10

Theme: Polynomials and Factoring

Essential Questions:
How do you perform operations with polynomials?
What are different techniques of factoring polynomials?
How can you use factoring to solve a quadratic equation?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 SSE.A.2 APR.A.1 and APR.C.4 **Time Frame:** 1-2 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 10.3 Special Products of Polynomials.	• Use special product patterns for the product of a sum and a difference, and for the square of a binomial. • Use special products as real-life models.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
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How do you perform operations with polynomials?
What are different techniques of factoring polynomials?
How can you use factoring to solve a quadratic equation?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 10.4 Solving Polynomials Equations in Factored Form.</td><td>Skills (As a result of this learning segment, students will be able to…)

• Solve a polynomial equation in factored form.
• Relate factors and x-intercepts.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
APR.B.3
CED.A.1
A-REI.B.4b
F.IF.C.8a

Time Frame:
1-2 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

CONTENT: Chapter 10

Theme: Polynomials and Factoring

Essential Questions:
How do you perform operations with polynomials?
What are different techniques of factoring polynomials?
How can you use factoring to solve a quadratic equation?

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 APR.B.3 CED.A.1 SSE.B.3a A-REI.B.4b F.IF.C.8a **Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Section 10.5 Factoring a Quadratic Trinomial (ac method, when a = 1)	• Factor a quadratic expression of the form $x^2 + bx + c$ • Solve quadratic equations by factoring.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
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How do you perform operations with polynomials?
What are different techniques of factoring polynomials?
How can you use factoring to solve a quadratic equation?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 10.6 Factoring a Quadratic Trinomial (ac method, when a ≠ 1)</td><td>Skills (As a result of this learning segment, students will be able to…)

• Factor a quadratic expression of the form $ax^2 + bx + c$
• Solve quadratic equations by factoring</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
APR.B.3
CED.A.1
SSE.B.3a
A-REI.B.4b
A-APR.B.3
F.IF.C.8a

Time Frame:
3-4 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

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<tr><td colspan="4">Essential Questions:
How do you perform operations with polynomials?
What are different techniques of factoring polynomials?
How can you use factoring to solve a quadratic equation?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 10.7 Factoring Special Products</td><td>Skills (As a result of this learning segment, students will be able to…)

• Use special product patterns to factor quadratic polynomials.
• Solve quadratic equations by factoring.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.1
REI.B.4b
SSE.A.2, SSE.B.3
A-APR.B.3
A-APR.C.4

Time Frame:
1-2 days

Materials: Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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How do you perform operations with polynomials?
What are different techniques of factoring polynomials?
How can you use factoring to solve a quadratic equation?</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Section 10.8 Factoring Using the Distributive Property</td><td>Skills (As a result of this learning segment, students will be able to…)

• Use the distributive property to factor a polynomial.
• Solve polynomial equations by factoring.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
CED.A.1
REI.B.4b
A-SSE.B.3
A-APR.B.3

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6

Calculators: Ti 30xs,Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

CONTENT: (use online materials or from Algebra 2 book)

Theme: Probability and Data Analysis

Essential Questions:
What is a biased sample?
What is a biased question?
How do you identify populations and sampling methods?
How to analyze central tendency?
How to analyze real-life data using Histograms, Box-and-Whisker Plots, and Stem-and-Leaf Plots

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 S.IC.1, S.IC.3 **Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 1 by Larson, ISBN-13: 978-0-618-25019-6 Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Analyze Surveys and Samples	• Identify populations and sampling methods. • Identify biased samples and questions.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

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What is a biased question?
How do you identify populations and sampling methods?
How to analyze central tendency?
How to analyze real-life data using Histograms, Box-and-Whisker Plots, and Stem-and-Leaf Plots</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Use Measures of Central Tendency and Dispersion</td><td>Skills (As a result of this learning segment, students will be able to…)

• Compare measures of central tendency.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
S.ID.2, S.ID.3

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2

Graphing calculators: Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

CONTENT: (use online materials or from Algebra 2 book)

Theme: Probability and Data Analysis

Essential Questions:
What is a biased sample?
What is a biased question?
How do you identify populations and sampling methods?
How to analyze central tendency?
How to analyze real-life data using Histograms, Box-and-Whisker Plots, and Stem-and-Leaf Plots

Content *(As a result of this learning segment, students will know…)*	**Skills** *(As a result of this learning segment, students will be able to…)*	**Assessments** (The above Essential Questions will be assessed with the following formative and summative measures:)	**Standards:** **Standards:** TECH 8.1.12.A.CS1 NJSLS MA 9-12 S.ID.1 S.ID.2 S.ID.3 S.ID.5 **Time Frame:** 2-3 days **Materials**: Textbook: 2004 *McDougal Littell* Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2 Graphing calculators: Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils.
• Interpret Stem-and-Leaf Plots and Histograms	• Construct Stem-and-Leaf Plots and Histograms. • Interpret Stem-and-Leaf Plots and Histograms.	• Homework • Warm up exercises • Exit Tickets • Group activities • Section quizzes • Chapter tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam	

CARLSTADT-EAST RUTHERFORD REGIONAL HIGH SCHOOL DISTRICT
MATHEMATICS DEPARTMENT
ALGEBRA 1 / ALGEBRA 1 CP

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What is a biased question?
How do you identify populations and sampling methods?
How to analyze central tendency?
How to analyze real-life data using Histograms, Box-and-Whisker Plots, and Stem-and-Leaf Plots</td></tr>
<tr><td>Content (As a result of this learning segment, students will know…)

• Interpret Box-and-Whisker Plots</td><td>Skills (As a result of this learning segment, students will be able to…)

• Interpret Box-and-Whisker Plots.</td><td>Assessments (The above Essential Questions will be assessed with the following formative and summative measures:)

• Homework
• Warm up exercises
• Exit Tickets
• Group activities
• Section quizzes
• Chapter tests
• Cumulative tests
• Projects / Presentations
• Midterm exam
• Final Exam</td><td>Standards:
Standards:
TECH 8.1.12.A.CS1
NJSLS MA 9-12
S.ID.1
S.ID.2
S.ID.3
8.1.12.A.1

Time Frame:
2-3 days

Materials:
Textbook: 2004 McDougal Littell Algebra 2 by Larson, ISBN-13: 978-0-618-25020-2

Graphing calculators: Ti-83/84 plus.

Smart board, internet research and activities, graph papers, color pencils.</td></tr>
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