Math Lab 9-10 Curriculum Guide

| Pacing Guide | Unit 1: Expressions, Equations, and Functions. 1 week |
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| Math Lab is a full year course | Unit 2: Properties of Real Numbers. 1 week |
| that meets on a rotating basis for three (3) 55-minute blocks and | Unit 3: Solving Linear Equations. 3 weeks |
| one (1) 40-minute block for every five (5) day cycle. | Unit 4: Graphing Linear Equations. 3 weeks |
| | Unit 5: Writing Linear Equations. 3 weeks |
| | Unit 6: Solving and Graphing Linear Inequalities. 3 weeks |
| | Unit 7: Systems of Linear Equations and Inequalities. 3 weeks |
| | Unit 8: Exponents and Exponential Functions. 3 weeks |
| | Unit 9: Polynomials and Factoring. 4 weeks |
| | Unit 10: Quadratic Equations and Functions. 2 weeks |
| | Unit 11: Radicals and Geometry Connections. 3 weeks |
| | Unit 12: Rational Equations and Functions. 2 weeks |
| | Unit 13: Probability and Data Analysis. 3 weeks |
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| 21st Century Skills Standards: | |
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| 9.1 Personal Finance Literacy | 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. 9.1.12.D.10: Differentiate among various investment products and savings vehicles and how to use them most effectively. |
| 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. |
| Technology Standards | 8.1.12.A.4: Construct a spreadsheet, enter data, and use mathematical or logical functions to manipulate data, generate charts and graphs, and interpret the results. |
| Interdisciplinary Connections | ENLGISH LANUGAGE ARTS |
| | WHST.9-12.9 Draw evidence from informational texts to support analysis, reflection, and research. |

| NJSLS Mathematical Practices – | 1. Make sense of problems and persevere in solving them. | | |
|----------------------------------|--|--|--|
| These practices are demonstrated | 2. Reason abstractly and quantitatively. | | |
| throughout the curriculum. | 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 – | CRP2. Apply appropriate academic and technical skills. | | |
| These practices are demonstrated | CRP4. Communicate clearly and effectively and with reason. | | |
| throughout the curriculum | CRP6. Demonstrate creativity and innovation. | | |
| - C | 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.

| (contant process product and Modifications for Classroom) (appropriate accommodations | Modifications for Classroom: |
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| Iterning environment) 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 Classrom: Modified assignments. Extended time for assignment. Wodified assignments. Highlight formulas. Model skills / techniques to be mattered. Provide assessments at a higher level of thinking. Provide assessments a | 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 class notes. 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 term planning of assignments Provide regular parent / school communication. |

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| 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 | 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. |
|--|--|
| Extended time on classroom tests and quizzes. 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. | Modification for Assessments Extended time on classroom tests and quizzes. 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. |

| CONTENT: Unit 1 | | | | |
|---|---|---|--|--|
| Theme: Expressions, Equations, and F | unctions | | | |
| 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? | | | | |
| Content (As a result of this learning segment, students will know) Section 1.1 (Evaluate expressions) Section 1.2 (Apply Order of Operations) Section 1.3 (Write Expressions) Section 1.4 (Write Equations and Inequalities) Section 1.5 (Use a Problem Solving Plan) Section 1.6 (Represent Functions as Rules and Tables) | Skills (As a result of this learning segment, students will be able to) 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 | 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 • Unit tests • Cumulative tests | Standards: NJSLS MA 9-12 A.CED.1, A.CED.2, A.CED.3 F.IF.1 N.Q.1, N.Q.2, N.Q.3 A.CED.1 A.SSE.1 A.REI.3 Time Frame: 5 days | |
| • Section 1.7 (Represent Functions as Graphs) | | Projects / Presentations Midterm exam Final Exam | Materials: Worksheet, guided practice Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils. | |

| CONTENT: Unit 2 | | | |
|--|--------------------------------------|--|--|
| Theme: Properties of Real Numbers | | | |
| Essential Questions: | | | |
| What is an integer? | | | |
| What is a rational number? | | | |
| How is the distributive property applied | ? | | |
| How do you find the square root of a nu | mber? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above | Standards: |
| segment, students will know) | segment, students will be able to) | Essential Questions will be | NJSLS MA 9-12 |
| | | assessed with the following | A.CED.1, A.CED.2, A.CED.3 |
| • Section 2.1 (Use Integers and Real | Add Real Numbers | formative and summative | F.IF.1 |
| Numbers) | Subtract Real Numbers | measures:) | N.Q.1, N.Q.2, N.Q.3 |
| • Section 2.2 (Add Real Numbers) | Multiply Real Numbers | | A.CED.1 |
| • Section 2.3 (Subtract Real | • Apply the Distributive Property | Homework | A.SSE.1 |
| Numbers) | Divide Real Numbers | • Warm up exercises | A.REI.3 |
| • Section 2.4 (Multiply Real | Find Square Roots and Compare | • Exit Tickets | Time Frame: |
| Numbers) | Real Numbers | • Group activities | 5 days |
| • Section 2.5 (Apply the | | Section guizzes | |
| Distributive Property) | | • Unit tests | |
| • Section 2.6 (Divide Real | | Cumulative tests | |
| Numbers) | | Projects / Presentations | Matarials |
| • Section 2.7 (Find Square Roots | | Midterm exam | Water lais. |
| and Compare Real Numbers) | | Final Exam | worksheet, guided practice |
| | | | Calculators: TI 83/84 plus / TI 30VS |
| | | | Smart board internet research and |
| | | | sinart board, internet research and |
| | | | activities, graph papers, color pencils. |

| CONTENT: Unit 3 | | | |
|--|--|-------------------------------------|---|
| Theme: Solving Linear Equations | | | |
| Essential Questions: | | | |
| What are the four inverse operations? | | | |
| How are inverse operations used to solv | ve equations? | | |
| How can you check that your solution is | s correct? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.CED.I |
| • Section 3.1-3.4 | • Solve one-step equations | measures:) | |
| Solving: | • Solve two-step equations | • Homowork | N.Q.I A CED 1 |
| -One-step equations | • Solve multi-step equations | Warm up avaraisas | A SSF 1 |
| -Multi-step equations | • Solve equations with variables on both sides | Figure Tickets | A.REL3 |
| -With variables on both sides | Chack their solution | Group activities | Time Frame: |
| | • Check their solution | Section guizzes | 6 days |
| | | | |
| Cumulative tests | | | |
| | | Projects / Presentations | |
| | | Midterm exam | Materials: |
| | | Final Exam | Worksheet, guided practice |
| | | | Calculators: TI-83/84 plus / TI-30XS |
| | | | Smart board, internet research and activities, graph papers, color pencils. |
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| CONTENT: Unit 3 | | | |
|--|--|--|--|
| Theme: Solving Linear Equations | | | |
| Essential Questions: | | | |
| What is a ratio? | | | |
| What is a proportion? | | | |
| How do you solve a proportion? | | | |
| Content (As a result of this learning segment, students will know) | Skills (<i>As a result of this learning segment, students will be able to</i>) | Assessments (The above Essential Questions will be assessed with the following formative and summative | Standards: NJSLS MA 9-12 A CED 1 A CED 2 A CED 3 |
| Section 3.5 (Write Ratios and Proportions) Section 3.6 (Solve Proportions Using Cross Products) | Simplify ratios Use the cross-product property to solve a proportion Analyze situations in real-life using proportions | Gaussions will be assessed with the following formative and summative measures:) Homework Warm up exercises Exit Tickets Group activities Section quizzes Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | A.CED.1, A.CED.2, A.CED.3 F.IF.1 N.Q.1, N.Q.2, N.Q.3 A.CED.1 A.SSE.1 A.REI.3 Time Frame: 3 days Materials: Worksheet, guided practice Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 3 | | | | |
|--|---|--|---|--|
| Theme: Solving Linear Equations | | | | |
| Essential Questions: | | | | |
| What is the proportion used to solve pe | ercent problems? | | | |
| Content (As a result of this learning segment, students will know) • Section 3.7 (Solve Percent Problems) | Skills (As a result of this learning segment, students will be able to) Use the cross-product property to solve a proportion Analyze situations in real-life using proportions and percents | 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 • Unit tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam | Standards: NJSLS MA 9-12 A.CED.1, A.CED.2, A.CED.3 F.IF.1 N.Q.1, N.Q.2, N.Q.3 A.CED.1 A.SSE.1 A.REI.3 Time Frame: 2 days Materials: Worksheet, guided practice Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils. | |

| CONTENT: Unit 3 | CONTENT: Unit 3 | | | | |
|---|--|--|---|--|--|
| Theme: Solving Linear Equations | | | | | |
| Essential Questions: | | | | | |
| How do you rewrite equations in terms | of a variable? | | | | |
| Essential Questions: How do you rewrite equations in terms Content (As a result of this learning segment, students will know) Section 3.8 (Formulas and Functions) | of a variable? Skills (<i>As a result of this learning segment, students will be able to)</i> • Represent situations using algebraic symbols • Analyze situations using algebraic symbols | 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 • Unit tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam | Standards: NJSLS MA 9-12 A.CED.1, A.CED.2, A.CED.3 F.IF.1 N.Q.1, N.Q.2, N.Q.3 A.CED.1 A.SSE.1 A.REI.3 Time Frame: 3 days Materials: Worksheet, guided practice Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils. | | |
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| CONTENT: Unit 4 | CONTENT: Unit 4 | | | | |
|---|---|--|---|--|--|
| Theme: Graphing Linear Equations an | d 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 plat? | | | | | |
| Content (As a result of this learning segment, students will know) Section 4.1 (Plot Points in the Coordinate Plane) | Skills (As a result of this learning segment, students will be able to) 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 | 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 • Unit tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam | Standards: NJSLS MA 9-12 A.CED.2 F.IF.6 F.IF.7a Time Frame: 2 days Materials: Worksheet, guided practice Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils. | | |

| CONTENT: Unit 4 | | | |
|---|--|--|--|
| Theme: Graphing Linear Equations and | 1 Functions | | |
| Essential Questions: What is slope-intercept form? How can a table of values be used to gra How are horizontal and vertical lines gra What are the four types of slopes? | aph a linear equation? aphed? | | |
| Content (As a result of this learning segment, students will know) • Section 4.2 (Graphing Linear Equations) | Skills (As a result of this learning segment, students will be able to) 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 | 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 Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | Standards: NJSLS MA 9-12 A.CED.2 F.IF.6 F.IF.7 F.IF.7a Time Frame: 3 days Materials: Worksheet, guided practice Calculators: TI-83/84 plus / TI-30XS Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 4 | | | | | |
|--|--|-------------------------------------|--|--|--|
| Theme: Graphing Linear Equations and Functions | | | | | |
| Essential Questions: | | | | | |
| What is standard form? | | | | | |
| How can intercepts be used to graph a li | How can intercepts be used to graph a linear equation? | | | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: | | |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 | | |
| | | following formative and summative | A.CED.2 | | |
| • Section 4.3 | • Use intercepts to graph a linear | measures:) | F.IF.6 | | |
| (Graphing using intercepts) | equation | | F.IF.7 | | |
| | • Identify what type of slope the | Homework | F.IF.7a | | |
| | line has after graphing | • Warm up exercises | Time Frame: | | |
| | • Check whether an ordered pair is a | • Exit Tickets | 3 days | | |
| | solution to a linear equation | Group activities | | | |
| | • Identify the x-intercept and y- | • Section quizzes | | | |
| | intercept of a graph | Unit tests | | | |
| | | Cumulative tests | Materials: | | |
| | | Projects / Presentations | Worksheet, guided practice | | |
| | | Midterm exam | | | |
| | | Final Exam | Calculators: TI-83/84 plus / TI-30XS | | |
| | | | | | |
| | | | Smart board, internet research and | | |
| | | | activities, graph papers, color pencils. | | |
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| CONTENT: Unit 4 | CONTENT: Unit 4 | | | | |
|--|---|-------------------------------------|--|--|--|
| Theme: Graphing Linear Equations an | d Functions | | | | |
| Essential Questions: | | | | | |
| What is slope-intercept form? | | | | | |
| What is a y-intercept? | | | | | |
| How is an equation rewritten in slope-in | ntercept form? | | | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: | | |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 | | |
| | | following formative and summative | A.CED.2 | | |
| • Section 4.7 | • Rewrite an equation in slope- | measures:) | F.IF.6 | | |
| (Graph Linear Functions) | intercept form | TT 1 | | | |
| | • Graph an equation in slope- | • Homework | F.IF./a | | |
| | intercept form | • Warm up exercises | Time Frame: | | |
| | • Identify the slope of a line based | • Exit Tickets | 3 days | | |
| | on a given graph | Group activities | | | |
| | | Section quizzes | | | |
| | | • Unit tests | | | |
| | | Cumulative tests | Materials [.] | | |
| | | Projects / Presentations | Worksheet guided practice | | |
| | | Midterm exam | Worksheed, guidea praediee | | |
| | | • Final Exam | Calculators: TI-83/84 plus / TI-30XS | | |
| | | | - | | |
| | | | Smart board, internet research and | | |
| | | | activities, graph papers, color pencils. | | |
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| CONTENT: Unit 5 | | | | | |
| Fagential Questions | | | | | |
| Essential Questions: | | | | | |
| What is slope-intercept form? | anh l | | | | |
| where is the y-intercept located on a gra | 1pn ? | | | | |
| How is slope determined using a graph? | -1 | | | | |
| How is an equation written when given | slope and a point? | | | | |
| How is an equation written when given | | A manufacture (The share Free of sh | | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: | | |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 | | |
| | | following formative and summative | A.CED.2 | | |
| • Section 5.1 | • Write an equation in slope- | measures:) | F.LE.2 | | |
| (Writing equations in slope- | intercept form when given: | | | | |
| intercept form) | | Homework | | | |
| | Slope and y-intercept | • Warm up exercises | Time Frame: | | |
| | Slope and a point • Exit Tickets 4 days | | | | |
| A graph • Group activities | | | | | |
| | | Section auizzes | | | |
| | | Unit tests | | | |
| | | Cumulative tests | | | |
| | | • Cumulative tests | Materials: | | |
| | | Projects / Presentations | Worksheet, guided practice | | |
| | | • Midterm exam | | | |
| | | • Final Exam | Graphing calculators: Ti-83/84 plus. | | |
| | | | Smart board, internet research and | | |
| | activities, graph papers, color pencils. | | | | |
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| CONTENT: Unit 5 | | | |
|---|--|--|---|
| Theme: Writing Linear Equations | | | |
| Essential Questions: What is slope-intercept form? Where is the y-intercept located on a gra How is slope determined using a graph? How is an equation written when given How is an equation written when given Content (As a result of this learning | aph? slope and a point? two points? Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| Section 5.2 (Use Linear Equations Written in Slope-intercept Form) | Write an equation in slope- intercept form when given: Slope and a point Two Points | Questions will be assessed with the following formative and summative measures:) Homework Warm up exercises Exit Tickets Group activities Section quizzes Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | NJSLS MA 9-12 A.CED.2 F.LE.2 Time Frame: 3 days Materials: Worksheet, guided practice Graphing calculators: Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 5 | | | | |
|--|---|-------------------------------------|--|--|
| Theme: Writing Linear Equations | | | | |
| Essential Questions: | | | | |
| What is point-slope form? | | | | |
| How do you find the slope of a line give | en two points? | | | |
| What is slope-intercept form? | 1 | | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: | |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 | |
| | | following formative and summative | A.CED.2 | |
| • Section 5.3 | • Write an equation in point-slope | measures:) | F.LE.2 | |
| (Write Linear Equations in Point- | form when given: | | | |
| slope form) | | Homework | | |
| | Slope and y-intercept | Warm up exercises | Time Frame: | |
| | Slope and a point | Exit Tickets | 2 days | |
| | Two points | Group activities | | |
| Section guizzes | | | | |
| • Unit tests | | | | |
| | | Cumulative tests | Madania la | |
| | | Projects / Presentations | Materials: | |
| | | Midterm exam | worksneet, guided practice | |
| | | Final Exam | C 1: 1 1 (T: 02/04 1 | |
| | | | Graphing calculators: 11-83/84 plus. | |
| | | | Smort board intermet research and | |
| | | | Smart board, internet research and | |
| | | | activities, graph papers, color pencils. | |
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| CONTENT: Unit 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) Section 5.4 (Write Linear Equations in Standard form) | Skills (As a result of this learning segment, students will be able to) Rewrite an equation in standard form | Assessments (The above Essential Questions will be assessed with the following formative and summative measures:) | Standards: NJSLS MA 9-12 A.CED.2 F.LE.2 |
| form) | | Homework Warm up exercises Exit Tickets Group activities Section quizzes Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | Time Frame: 2 days Materials: Worksheet, guided practice Graphing calculators: Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 5 | | | | | |
|--|--------------------------------------|--|--|--|--|
| Theme: Writing Linear Equations | | | | | |
| Essential Questions: | | | | | |
| What types of slopes do parallel lines hav | ve? | | | | |
| What types of slopes do perpendicular lin | es have? | | | | |
| How do you write equations of parallel and | nd perpendicular lines? | | | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: | | |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 | | |
| | | following formative and summative | A.CED.2 | | |
| • Section 5.5 | • Identify the relationship between | measures:) | F.LE.2 | | |
| (Write Equations of Parallel and | the slopes of parallel and | | | | |
| Perpendicular Lines) | perpendicular lines | Homework | | | |
| | • Write equations of parallel and | • Warm up exercises | Time Frame: | | |
| | perpendicular lines | • Exit Tickets | 3 days | | |
| | | • Group activities | - | | |
| | Section guizzes | | | | |
| | | Unit tests | | | |
| | | Cumulative tests | | | |
| | | Projects / Presentations | Materials: | | |
| | | Midterm exam | Worksheet, guided practice | | |
| | | Final Exam | Graphing calculators: Ti-83/84 plus | | |
| | | | Graphing calculators. 11-05/04 plus. | | |
| | | | Smart board internet research and | | |
| | | | activities graph papers color pencils | | |
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| CONTENT: Unit 6 | | | | | |
|---|---|--|--|--|--|
| Theme: Solving and Graphing Linear Inequalities | | | | | |
| Essential Questions: | | | | | |
| What is a linear inequality? | | | | | |
| How are solutions graphed on number lin | e? | | | | |
| What determines an open or closed circle | when graphing a solution on a number l | ine? | | | |
| What must you do when dividing or multi | plying by a negative when solving a line | ear inequality? | | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: | | |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 | | |
| | | following formative and summative | A.CED.1 | | |
| • Section 6.1 | • Solve a one-step inequality using | measures:) | A.REI.3 | | |
| (Solving linear inequalities using | addition, subtraction, | | A.REI.12 | | |
| addition and subtraction) | multiplication, and division | Homework | | | |
| • Section 6.2 | • Recall that when multiplying or | • Warm up exercises | Time Frame: | | |
| (Solving linear inequalities using | dividing by a negative, the | • Exit Tickets | 2 days | | |
| multiplication and division) | inequality sign must be switched • Group activities | | | | |
| Decide when an open or closed Section quizzes | | | | | |
| | are used based on the solution | • Unit tests | | | |
| | • Graph the solution to a linear | Cumulative tests | Materials [.] | | |
| | inequality on a number line | Projects / Presentations | Worksheet guided practice | | |
| | | Midterm exam | Worksheet, guided practice | | |
| | | Final Exam | Graphing calculators: Ti-83/84 plus | | |
| | | | Staphing carculators: 11 00/01 prast | | |
| | | | Smart board, internet research and | | |
| | | | activities, graph papers, color pencils. | | |
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| CONTENT: Unit 6 | | | |
|---|--|-------------------------------------|--|
| Theme: Solving and Graphing Linear Ind | equalities | | |
| Essential Questions: | | | |
| What is a linear inequality? | | | |
| How are solutions graphed on number lin | e? | | |
| What determines an open or closed circle | when graphing a solution on a number l | ine? | |
| What must you do when dividing or multi | plying by a negative when solving a line | ear inequality? | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.CED.1 |
| • Section 6.3 | • Solve a multi-step inequality | measures:) | A.REI.3 |
| (Solve multi-step linear inequalities) | using addition, subtraction, | | A.REI.12 |
| | multiplication, and division | Homework | |
| | • Recall that when multiplying or | • Warm up exercises | Time Frame: |
| | dividing by a negative, the | • Exit Tickets | 2 days |
| | inequality sign must be switched | Group activities | |
| | • Decide when an open or closed | Section quizzes | |
| | are used based on the solution | • Unit tests | |
| | • Graph the solution to a linear | Cumulative tests | |
| | inequality on a number line | Projects / Presentations | Materials: |
| | | • Midterm exam | Worksheet, guided practice |
| | | • Final Exam | |
| | | | Graphing calculators: Ti-83/84 plus. |
| | | | |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 6 | | | | |
|---|--------------------------------------|---|--|--|
| Theme: Solving and Graphing Linear Inequalities | | | | |
| Essential Questions: | | | | |
| What many solutions does an absolute va | alue equation have? | | | |
| What steps have to be taken to solve an a | absolute value inequality? | | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: | |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 | |
| | | following formative and summative | A.CED.1 | |
| • Section 6.5 | • Solve an absolute value | measures:) | A.REI.3 | |
| (Solving absolute value | equation | | A.REI.12 | |
| equations) | • Graph the solutions to an | Homework | | |
| • Section 6.6 | absolute value equation on a | Warm up exercises | Time Frame: | |
| (Solving absolute value | number line | Exit Tickets | 4 days | |
| inequalities) | • Solve an absolute value | Group activities | | |
| | inequality | Section guizzes | | |
| | • Decide whether an absolute | • Unit tests | | |
| | value inequality represents an | Cumulative tests | | |
| | "and" or "or" compound | Cumulative tests Drojects / Presentations | Materials: | |
| | inequality | Flojects / Flesentations | Worksheet, guided practice | |
| | • Write the final answer to an | • Mildterm exam | | |
| | "and" absolute value inequality | • Final Exam | Graphing calculators: Ti-83/84 plus. | |
| | as a compound inequality | | | |
| | 1 1 2 | | Smart board, internet research and | |
| | | | activities, graph papers, color pencils. | |
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| CONTENT: Unit 6 | | | |
|--|--------------------------------------|---|--|
| Theme: Solving and Graphing Linear Ine | equalities | | |
| Essential Questions: | | | |
| How is a linear inequality graphed? | | | |
| What is a half plane? | | | |
| How do you decide whether the linear ine | quality is a dotted or solid line? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.CED.1 |
| • Section 6.7 | • Graph a linear inequality in two | measures:) | A.REI.3 |
| (Graph Linear Inequalities in | variables | | A.REI.12 |
| two variables) | • Decide if the line is dotted or | Homework | |
| | solid | • Warm up exercises | Time Frame: |
| | • Test an ordered pair in order to | Exit Tickets | 3 days |
| | shade the appropriate half plane | Group activities | |
| | • Apply linear inequalities to real- | Section quizzes | |
| | life problems | Unit tests | |
| | F | Cumulative tests | |
| | | Cumulative tests Drojosts / Drosontations | Materials: |
| | | • Projects / Presentations | Worksheet, guided practice |
| | | • Mildterm exam | |
| | | • Final Exam | Graphing calculators: Ti-83/84 plus. |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| 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 learningSkills (As a result of this learningAssessments (The above EssentialStandards: | | | |
| segment, students will know) segment, students will be able to) Questions will be assessed with the NJSLS MA 9-12 | | | |
| following formative and summative A.CED.2 | | | |
| Section 7.1 Solve a system of linear equations measures:) A.CED.3 | | | |
| (Solve Linear Systems by by graphing. A.REI.6 | | | |
| Graphing) • Model a real-life problem using a • Homework A.REI.12 | | | |
| system of equations. • Warm up exercises A.RE.5 | | | |
| Check a solution to a system of Exit Tickets Time Frame: | | | |
| equations. • Group activities 2 days | | | |
| Section quizzes | | | |
| Unit tests | | | |
| Cumulative tests | | | |
| Projects / Presentations | | | |
| Midterm exam Worksheet, guided practice | | | |
| Final Exam | | | |
| Calculators: Ti 30xs,Ti-83/84 | lus. | | |
| Smart board, internet research | and | | |
| activities, graph papers, color | encils. | | |
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| CONTENT. Unit 7 | | | |
|---|---|-------------------------------------|--|
| CONTENT: Unit / | ad Inequalities | | |
| Figure Constinues of Linear Equations and | lu mequanties | | |
| Essential Questions: What are three different techniques used | to solve a system of aquations? | | |
| How does solving a system of equations | relate to a real world scenario? | | |
| How does a system of inequalities differ | r from a system of equations? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards |
| sogment students will know | sogment students will be able to | Questions will be assessed with the | NISI S MA 0.12 |
| segment, students witt know) | segment, students witt be able to) | following formative and summative | $\frac{1}{1} \frac{1}{2} \frac{1}{1} \frac{1}$ |
| • Section 7.2 | • Solve a system of equations using | manufactive and summative | A CED 3 |
| • Section 7.2 (Solve Linear Systems by | • Solve a system of equations using | measures.) | A REL6 |
| (Solve Linear Systems by Substitution) | Model a mel life mehlem using a | • Homowork | A REL 12 |
| Substitution | • Model a real-file problem using a | Homework | $\Delta RE 5$ |
| | system of equations. | • warm up exercises | A.RL.5 |
| | | • Exit lickets | A days |
| | | • Group activities | 4 days |
| | | • Section quizzes | |
| | | • Unit tests | |
| | | Cumulative tests | |
| | | Projects / Presentations | Materials: |
| | | Midterm exam | Worksheet, guided practice |
| | | Final Exam | |
| | | | Calculators: Ti 30xs,Ti-83/84 plus. |
| | | | |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 7 | CONTENT: Unit 7 | | | |
|--|---|-------------------------------------|---|--|
| Theme: Systems of Linear Equations an | nd Inequalities | | | |
| Essential Questions: | | | | |
| What are three different techniques used | d to solve a system of equations? | | | |
| How does solving a system of equations | s 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 | Skills (As a result of this learning | Assessments (The above Essential | Standards: | |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 | |
| | | following formative and summative | A.CED.2 | |
| • Section 7.3 Solving Linear | • Solve a system of equations using | measures:) | A.CED.3 | |
| Systems by Linear Combinations | elimination method | | A.REI.6 | |
| (Elimination Method) | • Model a real-life problem using a | Homework | A.REI.12 | |
| | system of equations. | Warm up exercises | A.RE.5 | |
| | | Exit Tickets | Time Frame: | |
| | | Group activities | 4 days | |
| | | Section quizzes | | |
| | | • Unit tests | | |
| | | Cumulative tests | | |
| | | Projects / Presentations | Matarials | |
| | | • Midterm exam | Workshoot, guided practice | |
| | | • Final Exam | worksheet, guided practice | |
| | | | Calculators: Ti 30ve Ti 83/84 plus | |
| | | | Calculators. 11 50x8,11-65/64 plus. | |
| | | | Smart board internet research and | |
| | | | activities graph papers color pencils | |
| | | | activities, graph papers, color perioris. | |
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| CONTENT. Unit 7 | | | | |
|--|---|-------------------------------------|--|--|
| Theme: Systems of Linear Equations at | CONTENT: Official / | | | |
| Essential Questions: | | | | |
| How do you graph a linear inequality? | | | | |
| How many linear inequalities exist in a | system? | | | |
| How is the solution identified in a system of linear inequalities? | | | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: | |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 | |
| | | following formative and summative | A.CED.2 | |
| • Section 7.6 | • Graph a linear inequality by | measures:) | A.CED.3 | |
| (Solve Systems of Linear | recalling: | | A.REI.6 | |
| Inequalities) | -whether the line is dotted or solid | Homework | A.REI.12 | |
| | -how to test an ordered pair and | • Warm up exercises | A.KE.5 | |
| | shade an appropriate half-plane | • Exit Tickets | Time Frame: | |
| | • Graph two linear inequalities on | Group activities | 4 days | |
| | the same graph and identify their | Section quizzes | | |
| | intersection | • Unit tests | | |
| | | Cumulative tests | | |
| | | Projects / Presentations | Materials: | |
| | | Midterm exam | Worksheet, guided practice | |
| | | Final Exam | | |
| | | | Calculators: Ti 30xs, Ti-83/84 plus. | |
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| | | | Smart board, internet research and | |
| | | | activities, graph papers, color pencils. | |
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| CONTENT: Unit 8 | | | |
|---|--|---|---|
| Theme: Exponents and Exponential Fu | nctions | | |
| Essential Questions: How do you use properties of exponents What real-life situations can be modeled What real-life situations can be modeled What is the difference between growth f | to simplify an exponential expression? by an exponential growth function? by an exponential decay function? factor and decay factor? | | |
| Content (As a result of this learning segment, students will know) Section 8.1 (Apply Exponent Properties Involving Products) | Skills (As a result of this learning segment, students will be able to) Use properties of exponents to multiply exponential expressions | Assessments (The above Essential Questions will be assessed with the following formative and summative measures:) Homework | Standards: NJSLS MA 9-12 A.SSE.3c N.RN.1 |
| in or mg rioueus) | | Warm up exercises Exit Tickets Group activities Section quizzes Unit tests | Time Frame: 2 days |
| | | Cumulative tests Projects / Presentations Midterm exam Final Exam | Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT. Unit 9 | | | |
|--|--|--|--|
| Theme: Exponents and Exponential Eu | nctions | | |
| Theme: Exponents and Exponential Fu Essential Questions: How do you use properties of exponents What real-life situations can be modeled What real-life situations can be modeled What is the difference between growth f Content (As a result of this learning segment, students will know) | a to simplify an exponential expression? by an exponential growth function? by an exponential decay function? factor and decay factor? Skills (<i>As a result of this learning segment, students will be able to</i>) | Assessments (The above Essential Questions will be assessed with the following formative and summative | Standards: NJSLS MA 9-12 A.SSE.3c |
| Section 8.2 (Apply Exponent Properties Involving Quotients) | Use properties of exponents to multiply exponential expressions | measures:) Homework Warm up exercises Exit Tickets Group activities Section quizzes Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | N.RN.1 Time Frame: 2 days Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 8 | | | |
|--|--|---|---|
| Theme: Exponents and Exponential Fu | nctions | | |
| Essential Questions: How do you use properties of exponents What real-life situations can be modeled | to simplify an exponential expression? by an exponential growth function? | | |
| What is the difference between growth f | a by an exponential decay function? | | |
| What is the difference between growth if Content (As a result of this learning segment, students will know) Section 8.3 (Define and Use Zero and Negative Exponents) | Skills (As a result of this learning segment, students will be able to) Use the division properties of exponents to evaluate powers and simplify expressions. Evaluate zero and negative exponents | 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 Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | Standards: NJSLS MA 9-12 A.SSE.3c N.RN.1 Time Frame: 3 days Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 8 | | | |
|--|--|--|--|
| Theme: Exponents and Exponential Fu | nctions | | |
| Essential Questions: How do you use properties of exponents What real-life situations can be modeled What real-life situations can be modeled What is the difference between growth f Content (As a result of this learning | to simplify an exponential expression? by an exponential growth function? by an exponential decay function? factor and decay factor? Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| • Section 8.4 (Use Scientific Notation) | Convert numbers in decimal form to scientific notation Convert numbers in scientific notation to decimal form Use rules of exponents to simplify numbers in scientific notation that are multiplied or divided Rewrite a number in proper scientific notation | Guestions will be assessed with the following formative and summative measures:) Homework Warm up exercises Exit Tickets Group activities Section quizzes Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | A.SSE.3c N.RN.1 Time Frame: 4 days Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 8 | | | |
|---|--|--|---|
| Theme: Exponents and Exponential Fu | nctions | | |
| Essential Questions: How do you use properties of exponents What real-life situations can be modeled What is the difference between growth f | to simplify an exponential expression? by an exponential growth function? by an exponential decay function? factor and decay factor? | | |
| Content (As a result of this learning segment, students will know) Section 8.5 (Exponential Growth Functions) Section 8.6 (Exponential Decay Functions) | Skills (As a result of this learning segment, students will be able to) Write and use models for exponential growth and decay Graph models for exponential growth using a graphing calculator Apply exponential growth and decay models to real-life situations | 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 • Unit tests • Cumulative tests • Projects / Presentations • Midterm exam • Final Exam | Standards: NJSLS MA 9-12 A.CED.2 F.IF.7e F.BF.3 F.LE.1 F.LE.2 F.LE.5 Time Frame: 4 days Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 9 | | | |
|--|---|-------------------------------------|---|
| Theme: Polynomials and Factoring | | | |
| Essential Questions: | | | |
| How do you perform operations with po | olynomials? | | |
| What are different techniques of factori | ng polynomials? | | |
| How can you use factoring to solve a qu | adratic equation? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.APR.1 |
| • Section 9.1 | • Add and subtract polynomials | measures:) | F.IF.7c |
| (Add and Subtract Polynomials) | • Use polynomials to model real-life | | |
| | situations. | Homework | |
| | | • Warm up exercises | |
| | | Exit Tickets | Time Frame: |
| | | Group activities | 3 days |
| | | Section guizzes | |
| | | Junit tests | |
| | | • Onit tests | |
| | | • Cumulative tests | Materials [.] |
| | | • Projects / Presentations | Worksheet guided practice |
| | | • Midterm exam | Worksheet, guided practice |
| | | • Final Exam | Calculators: Ti 30vs Ti-83/84 plus |
| | | | Calculators. 11 50x3,11-05/04 plus. |
| | | | Smart board internet research and |
| | | | activities, graph papers, color papeils |
| | | | activities, graph papers, color pelicits. |
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| CONTENT. Unit 0 | | | |
|--|---|--|---|
| Theme: Dolynomials and Eastering | | | |
| Essential Questions: | | | |
| How do you perform operations with pe | lynomials? | | |
| What are different techniques of factori | ng polynomials? | | |
| How can you use factoring to solve a gu | adratic equation? | | |
| What are different techniques of factoring How can you use factoring to solve a que Content (As a result of this learning segment, students will know) Section 9.2 (Multiply Polynomials) | ng polynomials? adratic equation? Skills (As a result of this learning segment, students will be able to) Multiply polynomials by applying rules of exponents Apply polynomial multiplication in real-life situations. | 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 Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | Standards: NJSLS MA 9-12 A.APR.1 F.IF.7c Time Frame: 3 days Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |
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| CONTENT. Unit 0 | | | |
|--|---|-------------------------------------|---|
| Theme: Dolynomials and Eastering | | | |
| Figure: Forynonnais and Factoring | | | |
| Essential Questions: | lynomials? | | |
| What are different techniques of featoric | ng nglynomials? | | |
| What are different techniques of factoring | ng polynomials? | | |
| How can you use factoring to solve a qu | | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.SSE.2 |
| • Section 9.3 | • Use special product patterns for | measures:) | A.APR.1 |
| (Special Products of Polynomials) | the product of a sum and a | | A.APR.4 |
| | difference, and for the square of a | Homework | |
| | binomial. | Warm up exercises | Time Frame: |
| | • Use special products as real-life | Exit Tickets | 3 days |
| | models. | Group activities | |
| | | Section guizzes | |
| | | • Unit tests | |
| | | Cumulative tests | |
| | | Projects / Presentations | Materials: |
| | | Midterm exam | Worksheet, guided practice |
| | | Final Exam | $C_{2} = 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$ |
| | | | Calculators: 11 30xs, 11-83/84 plus. |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 9 | | | |
|--|---|-------------------------------------|--|
| Theme: Polynomials and Factoring | | | |
| Essential Questions: | | | |
| How do you perform operations with pe | olynomials? | | |
| What are different techniques of factori | ng polynomials? | | |
| How can you use factoring to solve a qu | adratic equation? | 1 | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.APR.3 |
| • Section 9.4 | • Solve a polynomial equation in | measures:) | A.CED.1 |
| (Solve Polynomials Equations in | factored form. | | A.REI.4b |
| Factored Form) | • Relate factors and x-intercepts. | Homework | F.IF.8a |
| | | Warm up exercises | |
| | | Exit Tickets | Time Frame: |
| | | • Group activities | 2 days |
| | | Section guizzes | |
| | | • Unit tests | |
| | | Cumulative tests | |
| | | Projects / Presentations | Matarials: |
| | | Midterm exam | Worksheet guided practice |
| | | • Final Exam | worksheet, guided practice |
| | | | Calculators: Ti 20vs Ti 22/24 plus |
| | | | Calculators. 11 50x8,11-05/04 plus. |
| | | | Smart hoard internet research and |
| | | | activities graph papers color pencils |
| | | | activities, graph papers, color penelis. |
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| CONTENT: Unit 9 | | | |
|--|---|--|--|
| Theme: Polynomials and Factoring | | | |
| Essential Questions: | 1 10 | | |
| How do you perform operations with po | olynomials? | | |
| What are different techniques of factorin | ng polynomials? | | |
| How can you use factoring to solve a qu | adratic equation? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.CED.1 |
| • Section 9.5 Factoring a Quadratic | • Factor a quadratic expression of | measures:) | A.REI.4b |
| Trinomial (ac method, when $a = 1$) | the form $x^2 + bx + c$ when $a=1$ | | F.IF.8a |
| | using the AC method | Homework | A.SSE.3a |
| | | Warm up exercises | Time Frame: |
| | | Exit Tickets | 3 days |
| | | Group activities | |
| | | Section guizzes | |
| | | • Unit tests | |
| | | Cumulative tests | |
| | | Projects / Presentations | Materials: |
| | | Midterm exem | Worksheet, guided practice |
| | | • Milderin exam | |
| | | • Final Exam | Calculators: Ti 30xs, Ti-83/84 plus. |
| | | | |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 9 | | | |
|--|---|---|--|
| Theme: Polynomials and Factoring | | | |
| Essential Questions: | | | |
| How do you perform operations with po | olynomials? | | |
| What are different techniques of factoring | ng polynomials? | | |
| How can you use factoring to solve a qu | adratic equation? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.CED.1 |
| • Section 9.6 Factoring a Quadratic | • Factor a quadratic expression of | measures:) | A.REI.4b |
| Trinomial (ac method, when $a \neq 1$) | the form $ax^2 + bx + c$ when $a \neq 1$ | | F.IF.8a |
| | using the AC method | Homework | A.SSE.3a |
| | - | • Warm up exercises | Time Frame: |
| | | Exit Tickets | 4 days |
| | | Group activities | |
| | | Section guizzes | |
| | | Unit tests | |
| | | Cumulative tests | |
| | | Cumulative tests Drojacts / Presentations | Materials: |
| | | Midtarm avom | Worksheet, guided practice |
| | | • Milderin exam | |
| | | • Final Exam | Calculators: Ti 30xs,Ti-83/84 plus. |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils, |
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| CONTENT: Unit 10 | | | |
|--|---|-------------------------------------|--|
| Theme: Quadratic Equations and Funct | ions | | |
| Essential Questions: | | | |
| How do we graph a quadratic function? | | | |
| What do the roots of a quadratic function | n represent? | | |
| What are different ways to solve a quadr | ratic function? | | |
| How do you determine the number of so | Solutions a quadratic function has? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.REI.4b |
| • Section 10.2 | • Graph quadratic functions using a | measures:) | |
| $(Graph y = ax^2 + bx + c)$ | graphing calculator | YY 1 | |
| • Section 10.3 | | • Homework | |
| (Solve Quadratic Equations by | | • Warm up exercises | Time Frame: |
| Graphing) | | • Exit Tickets | 3 days |
| | | Group activities | |
| | | Section quizzes | |
| | | • Unit tests | |
| | | Cumulative tests | Materials: |
| | | Projects / Presentations | Worksheet, guided practice |
| | | • Midterm exam | |
| | | Final Exam | Calculators: Ti 30xs, Ti-83/84 plus. |
| | | | _ |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 10 | | | |
|--|---|-------------------------------------|--|
| Theme: Quadratic Equations and Func | tions | | |
| Essential Questions: | | | |
| How do we graph a quadratic function? | | | |
| What do the roots of a quadratic functio | n represent? | | |
| What are different ways to solve a quad | ratic function? | | |
| How do you determine the number of so | olutions a quadratic function has? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.REI.4b |
| • Section 10.6 | • Decide whether a quadratic | measures:) | |
| (Solve Quadratic Equations using | equation is factorable | | |
| the Quadratic Formula) | • Use the quadratic formula to find | | |
| • Section 10.7 | the roots of a quadratic equation | Homework | Time Frame: |
| (Interpret the Discriminant) | • Use the discriminant to determine | • Warm up exercises | 5 days |
| | how many roots a quadratic | Exit Tickets | |
| | equation has | Group activities | |
| | | Section quizzes | |
| | | • Unit tests | |
| | | Cumulative tests | Materials: |
| | | Projects / Presentations | Worksheet, guided practice |
| | | • Midterm exam | |
| | | Final Exam | Calculators: Ti 30xs,Ti-83/84 plus. |
| | | | |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 11 | | | |
|--|---|-------------------------------------|--|
| Theme: Radicals and Geometry Conne | ctions | | |
| Essential Questions: | | | |
| What is a square root function and how | is it graphed? | | |
| What is a radical? | | | |
| How do you simplify a radical? | | | |
| How many solutions do radical equation | ns have? | | |
| How is the Pythagorean theorem applied | d to find a missing side in a right triangle? | | |
| What is the converse of the Pythagorean | theorem used to determine? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.REI.4b |
| • Section 11.1 | • Use a graphing calculator to graph | measures:) | |
| (Graph Square Root Functions) | a square root function | | |
| | | Homework | |
| | | • Warm up exercises | Time Frame: |
| | | • Exit Tickets | 2 days |
| | | Group activities | |
| | | Section quizzes | |
| | | Unit tests | |
| | | Cumulative tests | Materials [.] |
| | | • Projects / Presentations | Worksheet guided practice |
| | | • Midterm exam | worksheet, guided practice |
| | | • Final Exam | Calculators: Ti 30xs Ti-83/84 plus |
| | | | |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 11 | | | |
|---|---|--|--|
| Theme: Radicals and Geometry Conne | ections | | |
| Essential Questions: What is a square root function and how What is a radical? How do you simplify a radical? What is a perfect square? How many solutions do radical equation How is the Pythagorean theorem applie What is the converse of the Pythagorean | is it graphed? is have? d to find a missing side in a right triangle? a theorem used to determine? | , | |
| Content (As a result of this learning segment, students will know) Section 11.2 (Simplify Radical Expressions) | Skills (As a result of this learning segment, students will be able to) Simplify radical expressions Identify and evaluate perfect square roots, where applicable | 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 Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | Standards: NJSLS MA 9-12 A.REI.4b Time Frame: 3 days Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 11 | | | |
|--|--|--|---|
| Theme: Radicals and Geometry Conne | ections | | |
| Essential Questions: | | | |
| What is a square root function and how | is it graphed? | | |
| What is a radical? | | | |
| How do you simplify a radical? | | | |
| What is a perfect square? | | | |
| How are inverses applied to solve radic | al equations? | | |
| How many solutions do radical equation | ns have? | | |
| Content (As a result of this learning segment, students will know) Section 11.3 (Solve Radical Equations) | Skills (As a result of this learning segment, students will be able to) Simplify radical expressions Identify and evaluate perfect | Assessments (The above Essential Questions will be assessed with the following formative and summative measures:) | Standards: NJSLS MA 9-12 A.REI.4b |
| | Solve radical equations | Homework Warm up exercises Exit Tickets Group activities Section quizzes Unit tests | Time Frame: 3 days |
| | | Cumulative tests Projects / Presentations Midterm exam Final Exam | Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. |
| | | | Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 11 | | | |
|--|---|-------------------------------------|--|
| Theme: Radicals and Geometry Conne | ections | | |
| Essential Questions: | | | |
| What is a square root function and how | is it graphed? | | |
| What is a radical? | | | |
| How do you simplify a radical? | | | |
| What is a perfect square? | | | |
| How are inverses applied to solve radica | al equations? | | |
| How many solutions do radical equation | ns have? | | |
| How is the Pythagorean theorem applied | d to find missing side lengths in right triar | ngles? | |
| What is the converse of the Pythagorear | theorem used to determine? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.REI.4b |
| • Section 11.4 | Simplify radical expressions | measures:) | |
| (Apply the Pythagorean Theorem | • Identify and evaluate perfect | | |
| and its Converse) | square roots, where applicable | Homework | Time Frome: |
| | • Solve radical equations when | • Warm up exercises | A days |
| | applying the Pythagorean theorem | • Exit Tickets | + days |
| | and its converse | Group activities | |
| | | Section quizzes | |
| | | • Unit tests | |
| | | Cumulative tests | Materials: |
| | | Projects / Presentations | Worksheet, guided practice |
| | | Midterm exam | |
| | | Final Exam | Calculators: Ti 30xs,Ti-83/84 plus. |
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| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 11 | | | |
|--|--------------------------------------|-------------------------------------|--|
| Theme: Radicals and Geometry Conne | ctions | | |
| Essential Questions: | | | |
| What is a square root function and how | is it graphed? | | |
| What is a radical? | | | |
| What is a perfect square? | | | |
| How is the distance formula derived from | m the Pythagorean theorem? | | |
| What does the midpoint formula tell you | about two points? | 1 | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | A.REI.4b |
| • Section 11.5 | Simplify radical expressions | measures:) | |
| (Apply the Distance and Midpoint | • Apply the distance formula to find | | |
| Formula) | the distance between two points | Homework | |
| | • Apply the midpoint formula to | • Warm up exercises | Time Frame: |
| | find the midpoint of two points | • Exit Tickets | 3 days |
| | | Group activities | |
| | | Section quizzes | |
| | | • Unit tests | |
| | | Cumulative tests | Motoriala |
| | | Projects / Presentations | Waterials. |
| | | • Midterm exam | worksheet, guided practice |
| | | Final Exam | Calculators: Ti 30xs Ti-83/84 plus |
| | | | Calculators. 11 50x3,11-05/04 plus. |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils, |
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| CONTENT: Unit 12 | | | |
|---|---|--|--|
| Theme: Rational Equations and Function | ons | | |
| Essential Questions: | | | |
| What is a polynomial? | | | |
| How do you divide two polynomials? | | | |
| What is a rational expression? | | | |
| How are rational expressions simplified | when multiplying and dividing? | | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segmeni, siudenis will know) | segment, students witt be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| G (* 12.2 | | Tonowing formative and summative | A.KEI.40 |
| • Section 12.3 (Divide Polynomials) | Divide polynomials using synthetic division | measures.) | |
| | Divide polynomials using long | Homework | |
| | division | Warm up exercises | |
| | | Fyit Tickets | Time Frame: |
| | | Croup activities | 4 days |
| | | Group activities | |
| | | • Section quizzes | |
| | | • Unit tests | |
| | | Cumulative tests | Matarials: |
| | | Projects / Presentations | Workshoot guided preatice |
| | | Midterm exam | worksheet, guided practice |
| | | • Final Exam | Calculators: Ti 30xs,Ti-83/84 plus. |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 12 | | | |
|---|------|--|--|
| Theme: Rational Equations and Functions | | | |
| Essential Questions: | | | |
| What is a polynomial? | | | |
| How do you divide two polynomials? | | | |
| What is a rational expression? | | | |
| How are rational expressions simplified when multiplying and dividing? | | | |
| Content (As a result of this learningSkills (As a result of this learningAssessments (The above EssentialStandards: | | | |
| segment, students will know) segment, students will be able to) Questions will be assessed with the NJSLS MA 9-12 | | | |
| following formative and summative A.REI.4b | | | |
| Section 12.4 Simplify rational expressions measures:) | | | |
| (Simplify Rational Expressions) using rules of exponents | | | |
| Homework | | | |
| Warm up exercises Time Frame: | | | |
| Exit Tickets 4 days | | | |
| Group activities | | | |
| Section quizzes | | | |
| Unit tests | | | |
| Cumulative tests Materials: | | | |
| Projects / Presentations Worksheet guided practice | | | |
| Midterm exam | | | |
| • Final Exam Calculators: Ti 30xs Ti-83/84 plus | | | |
| | • | | |
| Smart hoard internet research and | | | |
| activities graph papers color penc | vils | | |
| activities, graph papers, color pene | 110. | | |
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| CONTENT: Unit 12 | | | |
|---|--|--|---|
| Theme: Rational Equations and Function | ons | | |
| Essential Questions: | | | |
| What is a polynomial? | | | |
| How do you divide two polynomials? | | | |
| What is a rational expression? | | | |
| How are rational expressions simplified | when multiplying and dividing? | | |
| 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 | Standards: NJSLS MA 9-12 |
| • Section 12.5 (Multiply and Divide Rational Expressions) | Multiply rational expressions using rules of exponents Divide rational expressions using rules of exponents | following formative and summative measures:) Homework Warm up exercises Exit Tickets Group activities Section quizzes Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | A.REI.4b |
| | | | Time Frame: 4 days Materials: |
| | | | Worksheet, guided practice Calculators: Ti 30xs.Ti-83/84 plus. |
| | | | Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 13 | | | |
|---|---|--|--|
| Theme: Probability and Data Analysis | | | |
| Essential Questions: What is a biased sample? What is a biased question? How do you identify populations and sa How to analyze central tendency? How to analyze real-life data using Hist | mpling methods? ograms, Box-and-Whisker Plots, and Ster | m-and-Leaf Plots | Standardar |
| segment, students will know) | segment, students will be able to) | Ouestions will be assessed with the | Standards: NJSLS MA 9-12 |
| | | following formative and summative | S.IC.1 |
| • Section 13.1 | • Find the probability of an event | measures:) | S.IC.3 |
| (Find Probabilities and Odds) | occurringFind the odds of an event | Homework | |
| | occurring | • Warm up exercises | Time Frame: |
| | • Apply probability and odds to | • Exit Tickets | 4 days |
| | real-life situations | Group activities | |
| | | Section quizzesUnit tests | |
| | | Cumulative tests | Materials: |
| | | Projects / Presentations | Worksheet, guided practice |
| | | Midterm exam | |
| | | • Final Exam | Calculators: Ti 30xs,Ti-83/84 plus. |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |
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| CONTENT: Unit 13 | | | |
|---|--|--|--|
| Theme: Probability and Data Analysis | | | |
| Fineme: Probability and Data Analysis Essential Questions: What is a biased sample? What is a biased question? How do you identify populations and sa How to analyze central tendency? How to analyze real-life data using Hist Content (As a result of this learning segment, students will know) Section 13.5 | mpling methods? ograms, Box-and-Whisker Plots, and Ster Skills (As a result of this learning segment, students will be able to) | n-and-Leaf Plots Assessments (The above Essential Questions will be assessed with the following formative and summative measures:) | Standards: NJSLS MA 9-12 S.IC.1 S.IC.3 |
| (Analyze Surveys and Samples) | Conduct a survey to a sample population based on a topic of interest Analyze the data collected | Homework Warm up exercises Exit Tickets Group activities Section quizzes Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | Time Frame: 4 days Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |

| CONTENT: Unit 13 | | | |
|--|---|-------------------------------------|--|
| Theme: Probability and Data Analysis | | | |
| Essential Questions: | | | |
| What is a biased sample? | | | |
| What is a biased question? | | | |
| How do you identify populations and sa | mpling methods? | | |
| How to analyze central tendency? | | | |
| How to analyze real-life data using Hist | ograms, Box-and-Whisker Plots, and Ster | n-and-Leaf Plots | |
| Content (As a result of this learning | Skills (As a result of this learning | Assessments (The above Essential | Standards: |
| segment, students will know) | segment, students will be able to) | Questions will be assessed with the | NJSLS MA 9-12 |
| | | following formative and summative | S.IC.1 |
| • Section 13.7 | • Construct a stem-and-lead plot | measures:) | S.IC.3 |
| (Interpret Stem-and-Leaf Plots and | based on given information | | |
| Histograms) | • Interpret data using a given stem- | Homework | |
| | and-leaf plot | • Warm up exercises | Time Frame. |
| | Construct a histogram based on | Fxit Tickets | A days |
| | given information | Group activities | 4 days |
| | Interpret data and answer | Soction guizzes | |
| | • Interpret data and answer questions based on a given | • Section quizzes | |
| | histogram | • Unit tests | |
| | Instogram | • Cumulative tests | Materials: |
| | | Projects / Presentations | Worksheet, guided practice |
| | | Midterm exam | |
| | | Final Exam | Calculators: Ti 30xs,Ti-83/84 plus. |
| | | | |
| | | | Smart board, internet research and |
| | | | activities, graph papers, color pencils. |

| CONTENT: Unit 13 | | | |
|--|---|--|--|
| Theme: Probability and Data Analysis | | | |
| Essential Questions: What is a biased sample? What is a biased question? How do you identify populations and sa How to analyze central tendency? How to analyze real-life data using Hist Content (As a result of this learning segment, students will know) Section 13.8 | mpling methods? ograms, Box-and-Whisker Plots, and Ster Skills (As a result of this learning segment, students will be able to) Construct a box-and-whisker plot | n-and-Leaf Plots Assessments (The above Essential Questions will be assessed with the following formative and summative measures:) | Standards: NJSLS MA 9-12 S.IC.1 S.IC.3 |
| (Interpret Box-and-Whisker Plots) | based on given information Interpret data using a given box- and-whisker plot | Homework Warm up exercises Exit Tickets Group activities Section quizzes Unit tests Cumulative tests Projects / Presentations Midterm exam Final Exam | Time Frame: 4 days Materials: Worksheet, guided practice Calculators: Ti 30xs,Ti-83/84 plus. Smart board, internet research and activities, graph papers, color pencils. |