Cliffside Park Public Schools

COURSE OF STUDY UNIT PLANNING GUIDE FOR:
Algebra 1

Grade Level:
8th or 9th

Cliffside Park School District
Cliffside Park, NJ 07010
www.cliffsidepark.edu

Revised on August 2018

Course Overview:

Algebra 1 course looks into the structure of expressions. Student learn how to interpret expressions and write equivalent forms to solve problems. Arithmetic operations are extended to polynomials and rational functions. The understanding of significant values such as the zeros and factors of polynomials is used throughout the course. Students create equations and define functions that model relationships between numbers. Students are expected to explain their reasoning when they obtain a solution or solve an equation or an inequality. Students are introduced to various representations of problems such as graphic, tabular and algebraic.

Overview of Units:

1. Modeling with Linear Equations and Inequalities

2. Modeling with Linear Functions, Linear Systems, & Functions

3. Quadratic Equations, Functions, and Polynomials

4. Modeling with Statistics

Overview	NJSLS-M Standards for Mathematical Content	Unit Focus	NJSLS-M Standards for Mathematical Practice
Unit 4 **Exponential Functions, Step Functions, Data Analysis and Probability**	• **N.Q.A.1** • **N.Q.A.2** • **N.q.A.3** • **F.IF.C.7** • **F.IF.B.5*** • **F.LE.A.1** • **F.LE.A.2** • **A.REI.C.7**	• Construct & compare linear, quadratic, & exponential models • Build new functions from existing functions • Analyze functions using different representations • Use properties of rational and irrational numbers • Construct and compare linear and exponential models and solve problems • Construct linear and exponential functions, including arithmetic and geometric sequences • Summarize, represent, and interpret data on a single count or measurement variable • Summarize, represent, and interpret data on two categorical and quantitative variables • Interpret functions that arise in applications in terms of the context	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments & critique the reasoning of others. MP.4 Model with mathematics.
Unit 4: ***Suggested Open Educational Resources***	F.IF.B.4 The Aquarium F.IF.B.5 Average Cost F.IF.C.7 Graphs of quadratic functions F.LE.A.1 Basketball Rebounds A.REI.C.7 A linear and quadratic system F.LE.A.1 Finding Linear and Exponential Models F.LE.A.2 Interesting Interest Rates		

		MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

Unit 4 Algebra 1		
Content & Practice Standards		**Critical Knowledge & Skills**
NJSLS-Technology: 8.1.12.A.3 Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue. **Career Ready Practices:** CRP2. apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity	MP.3 Construct viable arguments & critique the reasoning of other MP4 Model with mathematics MP5. Use appropriate tools strategically MP.6 Attend to precision.	Students must learn to collaborate with others to perform specific tasks. Students must defend their answers with reason and communicate effectively. Students must be able to use technology effectively to find the correct answers and justify their claims.
• N.Q.A.1. Use units as a way to understand problems and to guide the solution of multi-step problems; Choose and interpret units consistently in formulas; Choose and interpret the scale and the origin in graphs and data displays. • N.Q.A.2. Define appropriate quantities for the purpose of descriptive modeling. • N.Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.	Concept(s): • Units are associated with variables in expressions and equations in context. • Quantities may be used to model attributes of real world situations. • Measurement tools have an inherent amount of uncertainty in measurement. Students are able to: • use units to understand real world problems. • use units to guide the solution of multi-step real world problems (e.g. dimensional analysis). choose and interpret units while using formulas to solve problems.

		• identify and define appropriate quantities for descriptive modeling. • choose a level of accuracy when reporting measurement quantities. Learning Goal 1: Solve multi-step problems, using units to guide the solution, interpreting units consistently in formulas and choosing an appropriate level of accuracy on measurement quantities. Develop descriptive models by defining appropriate quantities.
• F.IF.C.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. F.IF.C.7a. Graph linear and quadratic functions and show intercepts, maxima, and minima. F.IF.C.7b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. • F.IF.A.1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x).	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.6 Attend to precision.	Concept(s): • Piecewise-defined functions may contain discontinuities. • Absolute value functions are piecewise functions. Students are able to: • interpret step or piecewise-defined functions. • graph step or piecewise functions • graph more complicated cases of functions using technology. • identify and describe key features of the graphs of square root, cube root, and piecewise-defined functions • identify intercepts and intervals where the function is positive or negative. • interpret parameters in context. • determine the *practical* domain of a function.

• F.IF.B.4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity*. *[Focus on exponential functions]		Learning Goal 2: Graph linear, square root, cube root, and piecewise-defined functions (including step and absolute value functions) expressed symbolically. Graph by hand in simple cases and using technology in more complex cases, showing key features of the graph.
• A.REI.C.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. *For example,find the points of intersection between a line y=3x and the circle* $x^2+y^2=3$. • A.REI.D.11. Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately, e.g., using technology to graph the functions, make tables of values,	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.	Concept(s): • Systems that model real life examples are not always linear • the system can have 1, 2 or no real solutions Students are able to: • approximate the solution(x) to a system of equations comprised of a linear and a quadratic function by using technology to graph the functions, by making a table of values and/or by finding successive approximations. • interpret the meaning of the solutions • A geometric sequence is an exponential sequence with a restricted domain.(natural numbers) • Exponential functions increase by a common ratio

or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.*		• Learning Goal 3: Find approximate solutions of f(x) = g(x), where f(x) is a linear function and g(x) is a quadratic function by making a table of values, using technology to graph and finding successive approximations.
• F.IF.C.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.. F.IF.C.7e Graph exponential and Logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline and amplitude. ***Algebra 1 Exponential functions only* • F.LE.A.1. Distinguish between situations that can be modeled with linear functions and with exponential functions. F.LE.A.1a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. F.LE.A.1b. Recognize situations in which one quantity changes at a constant	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concept(s): • Linear functions grow by equal differences over equal intervals. • Sequences are functions, sometimes defined and represented recursively. • Sequences are functions whose domain is a subset of integers • A geometric sequence is an exponential sequence with a restricted domain.(natural numbers) • Exponential functions increase by a common ratio . Students are able to: • identify and describe situations in which one quantity changes at a constant rate. • identify and describe situations in which a quantity grows or decays by a constant percent. • create exponential functions given - a graph; - a description of a relationship; - a table of values. • show that linear functions grow by equal differences over equal intervals. • show that exponential functions grow by equal factors over equal intervals • create arithmetic and geometric sequences from verbal descriptions. • create arithmetic sequences from linear functions.

rate per unit interval relative to another. F.LE.A.1c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. • F.LE.A.2. Construct linear and exponential functions - including arithmetic and geometric sequences - given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). *[Algebra 1 limitation: exponential expressions with integer exponents] • F.IF.A.3. Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by *f(0) = f(1) = 1, f(n+1) = f(n) + f(n-1) for n ≥ 1*.		• create geometric sequences from exponential functions. • identify recursively defined sequences as functions. • Learning Goal 4: Identify and graph exponential functions. Learning Goal 5: Identify and construct arithmetic and geometric sequences. Learning Goal 6: Distinguish between and explain situations modeled with linear functions, quadratic functions and with exponential functions.
• F.IF.C.9 Compare properties of two functions each representing a different way (algebraically. graphically, numerically in tables, or by verbal descriptions). *For example given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*	MP.4 Model with mathematics. MP.6 Attend to precision.	Concept(s): No new concepts introduced Students are able to: • interpret maximum/minimum and intercepts of functions from graphs and tables in the context of the problem. • sketch graphs of functions given a verbal description of the relationship between the quantities.

• F.IF.B.4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity*. • F.IF.B.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*		• identify intercepts and intervals where function is increasing/decreasing. • determine the practical domain of a function . Learning Goal 7: Interpret key features of functions from graphs and tables. Given a verbal description of the relationship, sketch the graph of a function, showing key features and relating the domain of the function to its graph.
• F.LE.A.1. Distinguish between situations that can be modeled with linear functions and with exponential functions. F.LE.A.1a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.		Concept(s): • Repeated multiplication by numbers greater than one cause a quantity to increase • Repeated multiplication by a number between 0 and 1 causes a quantity to decrease. Students are able to: • evaluate exponential growth and decay functions

F.LE.A.1b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. F.LE.A.1c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. ● F.LE.A.2. Construct linear and exponential functions - including arithmetic and geometric sequences - given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). *[Algebra 1 limitation: exponential expressions with integer exponents]		● identify and graph exponential growth and decay functions ● write an exponential growth or decay function Learning Goal 8: To solve problem involving exponential growth and decay.
● S.ID.A.1. Represent data with plots on the real number line (dot plots, histograms, and box plots). ● S.ID.A.2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. ● S.ID.A.3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision.	Concept(s): ● Appropriate use of a statistic depends on the shape of the data distribution. ● Standard deviation Students are able to: ● represent data with dot plots on the real number line. ● represent data with histograms on the real number line. ● represent data with box plots on the real number line. ● represent two or more data sets with plots and use appropriate statistics to compare their center and spread. ● interpret differences in shape, center, and spread in context. ● explain possible effects of extreme data points (outliers) when summarizing data and interpreting shape, center and spread.

		Learning Goal 9 : Read and interpret data from tables and graphs. Learning Goal 10: Create stem-and -leaf plots; Create frequency tables and histograms. Learning Goal 11: Represent data with plots (dot plots, histograms, and box plots) on the real number line. Learning Goal 12: Describe the central tendency of a data set. Learning Goal 13: Create and interpret box plots. Learning Goal 14 : Compare center and spread of two or more data sets, interpreting differences in shape, center, and spread in the context of the data, taking into account the effects of outliers.
• S.CP.A.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not"). • S.MD.A.1 (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.	Concept(s): • The probability of an event is between 0 and 1 inclusively. • Theoretical Probability deals with events that consist of finite equally likely outcomes. • Experimental probability is a ration of the number of times the event occurs to the total number of trials. Students are able to: • Identify and write the sample spaces and outcomes • Find experimental probability and theoretical probability • FInd the theoretical probability using the complement • Convert odds and probabilities

		Learning Goal 15: Interpreting and calculating simple probabilities.

Unit 4 Algebra 1 What This May Look Like	
District/School Formative Assessment Plan	**District/School Summative Assessment Plan**
Homework, IXL practice, do nows, exit tickets, surveys, projects, teacher made chapter tests and quizzes.	End of chapter Tests Projects Quarterly Assessment (or Project) for indicated unit. Type of assessment to be unanimously determined by department.

Alternate Assessments:

Journaling
Problems worked out partially
Using manipulatives to gauge understanding and develop reasoning skills
Using questioning strategies in TE.
Creating scaffolding questions on test
Online tests
Questions tied to Real-World scenarios
Projects

Focus Mathematical Concepts

Districts should consider listing prerequisites skills. Concepts that include a focus on relationships and representation might be listed as grade level appropriate.

Prerequisite skills:

- Perform arithmetic operations on polynomials
- Understand the relationship between zeros and factors
- Interpret the structure of expression
- Interpret functions that arise in applications in terms of the context

- Represent and solve equations and inequalities graphically
- Build a function that models a relationship between two quantities
- Construct & compare linear, quadratic, & exponential models
- Build new functions from existing functions
- Analyze functions using different representations
- Use properties of rational and irrational numbers

Common Misconceptions:

- Students may have difficulty finding an explicit or recursive formula for an arithmetic or geometric sequence.
- Students often confuse histograms and bar graphs.
- Matching data with an appropriate representation is difficult. Students often try to force data to fit a representation with which they are comfortable.
- Students sometimes confuse mean and median.
- Students may try to use box plots to identify the mean or indicate sample size.
- Students may merely look for the word "frequency" on a table to tell if it is a frequency table, rather than actually understanding what the data table means and determining whether a frequency is being given.
- Students tend to learn quartile data through an algorithm, rather than understanding what it means. This causes difficulty when analyzing box plots.
- Students tend to memorize when to use the mean vs. the median due to the presence of an outlier, rather than reasoning in the context of the problem.
- When calculating standard deviation, students may follow a formula only and may not understand what standard deviation is. This leads to difficulty analyzing questions about how it can be misused.
- Students confuse joint, relative, and marginal frequencies.

District/School Tasks	District/School Primary and Supplementary Resources
District Benchmarks End of Year Projects	Holt McDougal Algebra 1 Common Core Edition 2012 and online website. Big Ideas Algebra 1 (Honors classes) www.IXL.com www.Khanacademy.com www.desmos.com www.illustrativemathematics.org www.GeoGebra.com

	Graphing Calculator

Interdisciplinary Standards

Interdisciplinary Connections and Activities:

ELA

RST.6-8.3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

RST.6-8.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

RST.6-8.9. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

RST.6-8.9. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

NJSLSA.W1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

WHST.6-8.1. Write arguments focused on discipline-specific content.

A. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
B. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
C. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
D. Establish and maintain a formal/academic style, approach, and form.
E. Provide a concluding statement or section that follows from and supports the argument presented.

WHST.6-8.6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

W.11-12.2.D Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.

NJSLS-Technology:

Students will participate in activities on Google Classroom and other online resources, MathXL, IXL

8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.

Career Ready Practices:

Students will use online graphing resources or the TI-84 calculator to assist in graphing and analyzing equations. They will discuss their findings with the instructor and their classmates.

CRP2. Apply appropriate academic and technical skills.
CRP4. Communicate clearly and effectively and with reason
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11. Use technology to enhance productivity

Integrated Differentiation/Accommodations/Modifications for Algebra 1 Unit 4 *(Alternate Modes of Instruction and Support)*		
Modifications to Support Gifted and Talented Students	**Modifications to Support English Language Learners**	**Modifications to Support Our Learners (Students with IEPs/504s and At-Risk Learners)**
Integrate Higher Order Thinking Skills (HOTS) through questioning and extension projects specific to linear equations, inequalities and functions Provide menu of challenge activities for when the child finishes the lesson early (integrate technology when possible). College/Career Readiness skill enhancement - G & T students can research professions related to the Algebra. Have the student teach the lesson - peer tutoring (research-based strategy) Accelerate pace for students who are advanced in concepts. Use inquiry-based, discovery learning approaches that emphasize open-ended problems with multiple solutions or multiple paths to solutions. Allow students to design their own ways to find the answers to complex questions. Leveled Questions assignments for classwork and homework. Challenge Problems	**Concept/Idea Map** - teacher models note-taking on piecewise functions, systems of equations, exponential functions and data analysis. **Contextualize language** for the following key vocabulary terms: ***ratio, rate, scale, unit rate, conversion factor, proportion, cross product, scale drawing. scale model, dimensional analysis,similar, corresponding sides, corresponding angles, indirect measurement, scale factor, piecewise function, step-function, interval, discontinuity, nonlinear system of equations,exponential function,sequence, term, arithmetic sequence, common difference, geometric sequence, common ratio, recursive pattern, exponential growth, compound interest, exponential decay, half-life, bar graph, line graph, circle graph, stem-and-leaf plot, frequency, frequency table, histogram, cumulative frequency, mean, median, mode, outlier, first-quartile, third-quartile, interquartile range (IQR) box-plot (box-and-whisker plot), dot plot, uniform distribution, symmetric distribution, skewed distribution, experiment, trial, outcome, sample***	Review student individual educational plan and/or 504 plan for instructional, assessment, and environmental supports. Allow student to use calculator to solve scatter plots; lines of correlation; absolute value function transformations; systems of linear equations; and systems of linear inequalities. Teach students how to check the accuracy of the solution that was derived from use of the graphing calculator. Provide manipulatives to aid in solving systems of equations (algebra tiles). Utilize manipulatives and/or visuals within instructional presentation of modeling linear functions, linear systems and inequalities ans well as absolute value functions. to support visual learners. Teach students how to check the accuracy of the solution that was derived from use of the calculator or other method. Provide graph paper to aid in aligning system of equations or system of inequalities properly. Utilize graphic organizer or partially completed template for students to solve system problems.

	space, event, probability, experimental probability, predictions, equally likely, theoretical probability, fair, complement, odds. **Visuals and illustrations** to be used for comprehension of piecewise and step functions, exponential functions, exponential growth or decay functions, data displays, stem-and-leaf plots, histograms, box plots, dot plots, sample space and other concrete terms. **Word/picture bank** available for students' reference in classroom, online and in their textbooks. **Wait Time Two** - extend basic "Wait Time" - after the 1st student responds to a question, the teacher waits an additional 5 - 7 seconds before calling on another student to ask a question about unit 3. **Native Language Supports** (peer, online assistive technology, translation device, bilingual dictionary) Teach the text backward - **frontload** the concepts and vocabulary needed for learning the material and activating prior knowledge unit 3 vocabulary, see above. Use a **word square** to teach target academic vocabulary for unit 4. Reading Strategies Worksheets Reteach Worksheets Leveled Practice Problems	Provide study guides that are partially completed by teacher, allowing the student to fill in missing information during instruction in order to aid in obtaining information pertaining to modeling linear functions and solving linear systems. Utilize visual aids such as charts or graphs connected to linear functions or systems of equations or system of inequalities and provide explicit instruction in how to analyze or use the data or information. By utilizing individual student assessment results, the teacher will provide small group or remedial instruction to review essential questions/big ideas of linear functions or systems of equations or system of inequalities, to provide additional explanations, more examples, and to model procedures in finding the solutions to particular problems. Provide wait time to allow students to process orally presented information and questions relating to the Unit 4. Access to word/picture banks to develop an understanding and use content-specific vocabulary, such as those listed under **Contextualize language.** Allow for Student Choice: Students should be permitted to demonstrate understanding of content through illustrations, computer projects, oral response, creative presentations or demonstration, etc. Support comprehension of unknown vocabulary, by providing examples of Note-taking, highlighting, underlining, etc. Students should be allowed given copies of grade level material or text so they can highlight or underline pertinent information. Text to speech/Oral reading

		Provide students with flexible seating options while working independently, depending on need or preference. Math-specific vocabulary and literary terms should be pre-taught before teaching relevant concepts. Allow extra time to complete in class written assignments. Provide students with a sample problem or list of steps or procedures for multi-step solutions to problems. Allow student to reference these procedures when solving independently. Reduce the number of assigned problems within Unit 4. Provide models or templates to teach the structure of how to solve problems systematically. If necessary, provide additional set of materials or online access so that students can utilize resources at school and home. Provide study guide for students to review before Unit 4 quizzes and tests. review essential questions/big ideas of linear functions or systems of equations or system of inequalities, to provide additional explanations, more examples, and to model procedures in finding the solutions to particular problems. Provide wait time to allow students to process orally presented information and questions relating to the Unit 4.

		Access to word/picture banks to develop an understanding and use content-specific vocabulary, such as those listed under **Contextualize language.** Allow for Student Choice: Students should be permitted to demonstrate understanding of content through illustrations, computer projects, oral response, creative presentations or demonstration, etc. Support comprehension of unknown vocabulary, by providing examples of Note-taking, highlighting, underlining, etc. Students should be allowed given copies of grade level material or text so they can highlight or underline pertinent information. Text to speech/Oral reading Provide students with flexible seating options while working independently, depending on need or preference. Math-specific vocabulary and literary terms should be pre-taught before teaching relevant concepts. Allow extra time to complete in class written assignments. Provide students with a sample problem or list of steps or procedures for multi-step solutions to problems. Allow student to reference these procedures when solving independently. Reduce the number of assigned problems within Unit 4. Provide models or templates to teach the structure of how to solve problems systematically.

		If necessary, provide additional set of materials or online access so that students can utilize resources at school and home. Provide study guide for students to review before Unit 4 quizzes and tests. Modify tests to address big ideas/essential questions of Unit 4. Reading Strategies Worksheets Reteach Worksheets Leveled Practice Problems

Edit History:

July 2017 Update CCSS to NJSLS-M

August 2018 Correlation with pacing guide; Include differentiated instruction blueprint for units.