

**Califon Public School  
Curriculum**



<b>Subject: Algebra</b>	<b>Grade: 8</b>	<b>Unit #: 1</b>	<b>Pacing: Approx. 7 Weeks</b>
<b>Unit Title: Relationships Between Quantities and Reasoning With Equations</b>			

**OVERVIEW OF UNIT:**

Explore the basic language of algebra. Topics include writing and simplifying numeric and algebraic expressions.  
 Explore techniques for solving and applying equations in one variable.  
 Explore comparing numbers and expressions using ratios, proportions and percents. Apply the concepts of proportion and similarity to real-world problems.

<b>Unit References</b>	
<b>Big Ideas</b>	<b>Essential Questions</b>
<ul style="list-style-type: none"> <li>● Mathematics is a language of carefully designed terms and symbols.</li> <li>● Mathematics is used to make informed decisions about problems in everyday life.</li> <li>● Analogies can be quantified.</li> </ul>	<ul style="list-style-type: none"> <li>● Recognizing, understanding and applying standard rules of math ensure consistent results?</li> <li>● How do complex, real-life scenarios require the language of math?</li> <li>● What does the language of math look like?</li> <li>● What is the mathematical language of balance?</li> <li>● How are equations used to find something you don't know from something you do know?</li> <li>● How are equations related to symmetry?</li> <li>● How is comparison used to gain knowledge?</li> <li>● What does it mean to be equivalent?</li> </ul>
<b>Objectives</b>	

- Students will be able to recognize, understand and apply standard rules of math ensure consistent results.
- Students will be able to recognize how complex, real-life scenarios require the language of math.
- Students will be able to recognize what the language of math looks like.
- Students will be able to understand what the mathematical language of balance looks like.
- Students will be able to calculate how equations are used to find something you don't know from something you do know.
- Students will be able to understand how equations are related to symmetry.
- Students will be able to use comparison used to gain knowledge.
- Students will be able to determine what it means to be equivalent.

### Assessment

#### **Formative Assessment:**

- Homework
- Skill Sheets
- Classwork
- Projects
- Exit Slips
- Teacher Observations
- Discussion
- Math Minutes

#### **Summative Assessment:**

- Quizzes
- Tests

#### **Benchmark:**

- **Link It**

#### **Alternative:**

- Performance Tasks
- Extended Projects
- Modified tests independently developed by teacher

**Key Vocabulary**

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|--|--|
| <ul style="list-style-type: none"><li>● Algebraic Expression</li><li>● Base</li><li>● Coefficient</li><li>● Coordinate System</li><li>● Dependent Variable</li><li>● Domain</li><li>● Equation</li><li>● Exponent</li><li>● Function</li><li>● Dependent Variable</li><li>● Intercept</li><li>● Like Terms</li><li>● Line Symmetry</li><li>● Mapping</li></ul> | <ul style="list-style-type: none"><li>● Ordered Pair</li><li>● Order of Operations</li><li>● Origin</li><li>● Power</li><li>● Range</li><li>● Reciprocal</li><li>● Relation</li><li>● Replacement Set</li><li>● Simplest Form</li><li>● Solution</li><li>● Term</li><li>● Variables</li><li>● Vertical Line Test</li></ul> |
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**Resources & Materials**

- Glencoe Algebra 1
- SMARTBoard
- Calculator
- Teacher-made materials

**Technology Infusion**

**Teacher Technology:**

- [www.khanacademy.com](http://www.khanacademy.com)
- [www.desmos.com](http://www.desmos.com)
- SMARTBoard
- Graphing calculator

- Calculator-scientific
- Chromebook
- [www.factmonster.com](http://www.factmonster.com)

**Student Technology:**

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- Calculator-scientific
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**Activities:**

- Students will use the Smartboard to balance linear equations.

Standard	Standard Description
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.

**Interdisciplinary Integration**

**Activities:**

- Students will read and interpret texts in order to solve multi-step word problems.
- Students will compose written explanations of problem solving techniques so that their thinking is clear and supported by mathematical details, containing computation and appropriate vocabulary.

Standard	Standard Description
NJLSLA.SL4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

**21<sup>st</sup> Century Life Skills**

**Activities:**

- Students will work both individually and in collaborative groups to interpret and organize data and problem solve while utilizing varied strategies to complete a task.
- Students will discuss various solutions to a problem, communicating thinking effectively both verbally and in writing.

Standard	Standard Description
9.4.8.IML.12	Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.

**Careers**

**Activities:**

- Students will translate real world problems into Algebraic, write using appropriate mathematical vocabulary and then they explain their thought process for obtaining solutions to specific problems.

Standard	Standard Description
CRP4	Communicate clearly and effectively and with reason.

Common Core State Standards for Mathematical Practice: Bold all that apply	
MP #	Practice
<b>1</b>	<b>Make sense of problems and persevere in solving them.</b>
<b>2</b>	<b>Reason abstractly and quantitatively.</b>
3	Construct viable arguments and critique the reasoning of others.
<b>4</b>	<b>Model with mathematics.</b>
5	Use appropriate tools strategically.
<b>6</b>	<b>Attend to precision.</b>
7	Look for and make use of structure.
<b>8</b>	<b>Look for and express regularity in repeated reasoning.</b>

Standards	
Standard #	Standard Description
N.Q.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.2	Define appropriate quantities for the purpose of descriptive modeling.
N.Q.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
A.SSE.1	Interpret expressions that represent a quantity in terms of its context. ★ a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)^n$ as the product of $P$ and a factor not depending on $P$ .
A.CED.1	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear functions.
A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance $R$ .
A.REI.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
A.REI.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

Major Content (MC) Supporting Content (SC) Additional Content (AC)

Differentiation			
Special Education	English Language Learners (ELL)	Response to Intervention (RTI)	Enrichment
<ul style="list-style-type: none"> <li>● Provide modifications &amp; accommodations as listed in the student’s IEP</li> <li>● Position student near helping peer or have quick access to teacher</li> <li>● Modify or reduce assignments/tasks</li> <li>● Reduce length of assignment for different mode of delivery</li> <li>● Increase one-to-one time</li> <li>● Prioritize tasks</li> <li>● Use graphic organizers</li> <li>● Use online resources for skill building</li> <li>● Provide teacher notes</li> <li>● Use collaborative grouping strategies such as small groups</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/specialed/">http://www.state.nj.us/education/specialed/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Provide text-to-speech</li> <li>● Use of translation dictionary or software</li> <li>● Provide graphic organizers</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/ELL.htm">http://www.state.nj.us/education/aps/cccs/ELL.htm</a></li> <li>● Adapt a Strategy – Adjusting strategies for ESL students - <a href="http://www.teachersfirst.com/content/esl/adaptstrat.cfm">http://www.teachersfirst.com/content/esl/adaptstrat.cfm</a></li> </ul>	<ul style="list-style-type: none"> <li>● Tiered interventions following RTI framework</li> <li>● Effective RTI strategies for teachers - <a href="http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/">http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/</a></li> <li>● Interventional Central - <a href="http://www.interventioncentral.org/">http://www.interventioncentral.org/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Process should be modified: higher order thinking skills, open-ended thinking, discovery</li> <li>● Utilize project-based learning for greater depth of knowledge</li> <li>● Utilize exploratory connections to higher grade concepts</li> <li>● Contents should be modified: real world problems, audiences, deadlines, evaluations, transformations</li> <li>● Learning environments should be modified: student-centered learning, independence, openness, complexity, groups varied</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm">http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm</a></li> </ul>

**Califon Public School  
Curriculum**



<b>Subject: Algebra 1</b>	<b>Grade: 8</b>	<b>Unit #:2</b>	<b>Pacing: Approx. 7 Weeks</b>
<b>Unit Title:Linear Relationships</b>			

**OVERVIEW OF UNIT:**

**Explore techniques for solving and applying inequalities and compound inequalities in one variable. Illustrate the solution set graphically. Explore techniques for solving and applying systems of equations and inequalities. Apply these techniques to solve real-world problems.**

<b>Unit References</b>	
<b>Big Ideas</b>	<b>Essential Questions</b>
<ul style="list-style-type: none"> <li>● Things in life are rarely exact.</li> <li>● Mathematics is a language of carefully designed terms and symbols.</li> <li>● Mathematics is used to make informed decisions about problems in everyday life.</li> <li>● The best solution to many problems requires analysis of multiple possibilities.</li> </ul>	<ul style="list-style-type: none"> <li>● How can we communicate situations that are not exact?</li> <li>● What is the language of imbalance?</li> <li>● How can you communicate that something is between 2 values?</li> <li>● How do you communicate choice?</li> <li>● What are some of the factors that go into selecting one solution over another?</li> <li>● When do real-world problems have many answers?</li> </ul>
<b>Objectives</b>	
<ul style="list-style-type: none"> <li>● Students will be able to communicate situations that are not exact.</li> <li>● Students will be able to determine what the language of imbalance is.</li> <li>● Students will be able to communicate that something falls between 2 values.</li> <li>● Students will be able to communicate that something is between 2 values.</li> <li>● Students will be able to communicate choice.</li> <li>● Students will be able to determine some of the factors that go into selecting one solution over another.</li> </ul>	



- Students will be able to determine why real-world problems have many answers.

## Assessment

### **Formative Assessment:**

- Homework
- Skill Sheets
- Classwork
- Projects
- Exit Slips
- Teacher Observations
- Discussion
- Math Minutes

### **Summative Assessment:**

- Tests
- Quizzes

### **Benchmark:**

- **Link It**

### **Alternative:**

- Performance Tasks
- Extended Projects
- Modified tests independently developed by teacher

## Key Vocabulary

<ul style="list-style-type: none"><li>● Consecutive Integers</li><li>● Dimensional Analysis</li><li>● Equivalent Fractions</li><li>● Extremes</li><li>● Formula</li><li>● Identity</li><li>● Literal Equations</li><li>● Means</li><li>● Multi-Step Equations</li><li>● Number Theory</li><li>● Percent of Change</li></ul>	<ul style="list-style-type: none"><li>● Percent of Increase</li><li>● Percent of Decrease</li><li>● Proportions</li><li>● Rate</li><li>● Ratio</li><li>● Scale</li><li>● Scale Model</li><li>● Solve an Equation</li><li>● Unit Analysis</li><li>● Unit Rate</li></ul>
<b>Resources &amp; Materials</b>	
<ul style="list-style-type: none"><li>• Textbook Glencoe Algebra 1</li><li>• SMARTBoard</li><li>• Calculator</li><li>• Teacher-made materials</li></ul>	

### Technology Infusion

#### Teacher Technology:

- [www.khanacademy.com](http://www.khanacademy.com)
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- SMARTBoard
- Graphing calculator
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- Chromebook

- [www.factmonster.com](http://www.factmonster.com)

**Activities:**

- Students will use the SmartBoard and [www.desmos.com](http://www.desmos.com) to graph linear equations and linear inequalities.

Standard	Standard Description
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.

**Interdisciplinary Integration**

**Activities:**

- Students will read and interpret texts in order to solve multi-step word problems.
- Students will compose written explanations of problem solving techniques so that their thinking is clear and supported by mathematical details, containing computation and appropriate vocabulary.

Standard	Standard Description
NJSLSA.SL4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

**21<sup>st</sup> Century Life Skills**

**Activities:**

- Students will work both individually and in collaborative groups to interpret and organize data and problem solve while utilizing varied strategies to complete a task.
- Students will discuss various solutions to a problem, communicating thinking effectively both verbally and in writing.

Standard	Standard Description
9.4.8.IML.12	Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.

**Careers**

**Activities:**

- Students will interpret the results from a group survey project and determine if those results are linear or non linear.

July 2022

<b>Standard</b>	<b>Standard Description</b>
CRP4	Communicate clearly and effectively and with reason.

Common Core State Standards for Mathematical Practice: Bold all that apply	
MP #	Practice
1	<b>Make sense of problems and persevere in solving them.</b>
2	<b>Reason abstractly and quantitatively.</b>
3	<b>Construct viable arguments and critique the reasoning of others.</b>
4	<b>Model with mathematics.</b>
5	<b>Use appropriate tools strategically.</b>
6	<b>Attend to precision.</b>
7	<b>Look for and make use of structure.</b>
8	<b>Look for and express regularity in repeated reasoning.</b>

Standards	
Standard #	Standard Description
A.REI.5	Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
A.REI.6	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
A.REI.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
A.REI.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, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
A.REI.12	Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.
A.CED.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.
F.IF.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 $y = f(x)$ .
F.IF.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
F.IF.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 $n \geq 1$ .

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F.IF.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
F.IF.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. a. Graph linear functions.
F.IF.9	Compare properties of two functions each represented in 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.

Major Content (MC) Supporting Content (SC) Additional Content (AC)

Differentiation			
Special Education	English Language Learners (ELL)	Response to Intervention (RTI)	Enrichment
<ul style="list-style-type: none"> <li>● Provide modifications &amp; accommodations as listed in the student’s IEP</li> <li>● Position student near helping peer or have quick access to teacher</li> <li>● Modify or reduce assignments/tasks</li> <li>● Reduce length of assignment for different mode of delivery</li> <li>● Increase one-to-one time</li> <li>● Prioritize tasks</li> <li>● Use graphic organizers</li> <li>● Use online resources for skill building</li> <li>● Provide teacher notes</li> <li>● Use collaborative grouping strategies such as small groups</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/specialed/">http://www.state.nj.us/education/specialed/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Provide text-to-speech</li> <li>● Use of translation dictionary or software</li> <li>● Provide graphic organizers</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/ELL.htm">http://www.state.nj.us/education/aps/cccs/ELL.htm</a></li> <li>● Adapt a Strategy – Adjusting strategies for ESL students - <a href="http://www.teachersfirst.com/content/esl/adaptstrat.cfm">http://www.teachersfirst.com/content/esl/adaptstrat.cfm</a></li> </ul>	<ul style="list-style-type: none"> <li>● Tiered interventions following RTI framework</li> <li>● Effective RTI strategies for teachers - <a href="http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/">http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/</a></li> <li>● Interventional Central - <a href="http://www.interventioncentral.org/">http://www.interventioncentral.org/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Process should be modified: higher order thinking skills, open-ended thinking, discovery</li> <li>● Utilize project-based learning for greater depth of knowledge</li> <li>● Utilize exploratory connections to higher grade concepts</li> <li>● Contents should be modified: real world problems, audiences, deadlines, evaluations, transformations</li> <li>● Learning environments should be modified: student-centered learning, independence, openness, complexity, groups varied</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm">http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm</a></li> </ul>

**Califon Public School  
Curriculum**



<b>Subject: Algebra</b>	<b>Grade: 8</b>	<b>Unit #:3</b>	<b>Pacing: Approx. 7 Weeks</b>
<b>Unit Title: Exponential and Quadratic Relationships</b>			

**OVERVIEW OF UNIT:**

**Explore and model linear relationships using graphs, tables and equations. Compare, analyze, interpret the characteristics of linear relationships when applied to real-world problems.**  
**Explore and model exponential functions using graphs, tables and equations and by applying the rules for operations with exponents. Construct, compare, and analyze exponential functions.**  
**Explore the techniques to add, subtract, multiply and factor polynomials.**  
**Explore how to simplify radical expressions, solve radical equations and apply these techniques to real-world situations involving the pythagorean theorem.**

<b>Unit References</b>	
<b>Big Ideas</b>	<b>Essential Questions</b>
<ul style="list-style-type: none"> <li>● Linear models allow us to understand the present and communicate predictions about the future.</li> <li>● Mathematics is a language of carefully designed terms and symbols.</li> <li>● Mathematics is used to make informed decisions about problems in everyday life.</li> <li>● Many real-world complex problems require simplification to solve.</li> </ul>	<ul style="list-style-type: none"> <li>● What types of relationships can be modeled by a straight line?</li> <li>● What is the language of linear models?</li> <li>● How can real-life situations be represented by linear functions?</li> <li>● How can you communicate ideas that involve very large and very small numbers?</li> <li>● Why is it necessary to have so many ways of representing a single number?</li> <li>● How do we communicate growth?</li> <li>● What does it mean to simplify in the language of algebra?</li> <li>● How can patterns be used to simplify mathematical expressions?</li> <li>● How are right triangles used to understand and model our physical world?</li> </ul>



- What does triangulation mean?

### Objectives

- Students will be able to determine the types of relationships can be modeled by a straight line.
- Students will be able to use the language of linear models.
- Students will be able to determine how real-life situations be represented by linear functions.
- Students will be able to state how they can communicate ideas that involve very large and very small numbers.
- Students will be able to determine why it is necessary to have so many ways of representing a single number.
- Students will be able to determine how to communicate growth.
- Students will be able to state what it means to simplify the language of algebra.
- Students will be able to determine how patterns be used to simplify mathematical expressions.
- Students will be able to How right triangles are used to understand and model our physical world.
- Students will be able to state what triangulation means.

### Assessment

#### **Formative Assessment:**

- Homework
- Skill Sheets
- Classwork
- Projects
- Exit Sips
- Teacher Observations
- Discussion
- Math Minutes

#### **Summative Assessment:**

- Quizzes
- Tests

**Benchmark:**

- Link It

**Alternative:**

- Performance Tasks
- Extended Projects
- Modified tests independently developed by teacher

**Key Vocabulary**

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|--|--|
| <ul style="list-style-type: none"><li>• Arithmetic Sequence</li><li>• Common Difference</li><li>• Constant</li><li>• Constant of Variation</li><li>• Deductive Reasoning</li><li>• Direct Variation</li><li>• Inductive Reasoning</li><li>• Linear Equation</li><li>• Linear Function</li><li>• Rate of Change</li></ul> | <ul style="list-style-type: none"><li>• Root</li><li>• Sequence</li><li>• Slope</li><li>• Standard Form</li><li>• Terms of the Sequence</li><li>• x-intercept</li><li>• y-intercept</li><li>• Zero of a Function</li></ul> |
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**Resources & Materials**

- Textbook (Glencoe Algebra 1)
- SMARTBoard
- Calculator
- Teacher-made materials

**Technology Infusion**

**Teacher Technology:**

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**Activities:**

- Students will use [www.desmos.com](http://www.desmos.com) and Graphing Calculators to graph Exponential and Quadratic functions.

Standard	Standard Description
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.

**Interdisciplinary Integration**

**Activities:**

- Students will read and interpret texts in order to solve multi-step word problems.
- Students will compose written explanations of problem solving techniques so that their thinking is clear and supported by mathematical details, containing computation and appropriate vocabulary.

Standard	Standard Description
NJLSA.SL4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

**21<sup>st</sup> Century Life Skills**

<b>Activities:</b> <ul style="list-style-type: none"><li>• Students will work both individually and in collaborative groups to interpret and organize data and problem solve while utilizing varied strategies to complete a task.</li><li>• Students will discuss various solutions to a problem, communicating thinking effectively both verbally and in writing.</li></ul>	
<b>Standard</b>	<b>Standard Description</b>
9.4.8.IML.12	Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.

<b>Careers</b>	
<b>Activities:</b> <ul style="list-style-type: none"><li>• Students will complete the unit Performance Task which provides the opportunity to apply the concepts from this unit in real-world problem situations.</li></ul>	
<b>Standard</b>	<b>Standard Description</b>
CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.

Common Core State Standards for Mathematical Practice: Bold all that apply	
MP #	Practice
1	<b>Make sense of problems and persevere in solving them.</b>
2	<b>Reason abstractly and quantitatively.</b>
3	Construct viable arguments and critique the reasoning of others.
4	<b>Model with mathematics.</b>
5	Use appropriate tools strategically.
6	<b>Attend to precision.</b>
7	<b>Look for and make use of structure.</b>
8	<b>Look for and express regularity in repeated reasoning.</b>

Standards	
Standard #	Standard Description
A.SSE.1	Interpret expressions that represent a quantity in terms of its context. ★ a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.
A.SSE.2	Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$ , thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$ .
A.SSE.3	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. ★ a. Factor a quadratic expression to reveal the zeros of the function it defines. b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. c. Use the properties of exponents to transform expressions for exponential functions. For example the expression $1.15t$ can be rewritten as $(1.151/12)^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.
A.APR.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
A.CED.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R.

A.REI.4	<p>Solve quadratic equations in one variable.</p> <ol style="list-style-type: none"><li>a. Use the method of completing the square to transform any quadratic equation in <math>x</math> into an equation of the form <math>(x - p)^2 = q</math> that has the same solutions. Derive the quadratic formula from this form.</li><li>b. Solve quadratic equations by inspection (e.g., for <math>x^2 = 49</math>), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as <math>a \pm bi</math> for real numbers <math>a</math> and <math>b</math>.</li></ol>
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Major Content (MC) Supporting Content (SC) Additional Content (AC)

Differentiation			
Special Education	English Language Learners (ELL)	Response to Intervention (RTI)	Enrichment
<ul style="list-style-type: none"> <li>● Provide modifications &amp; accommodations as listed in the student’s IEP</li> <li>● Position student near helping peer or have quick access to teacher</li> <li>● Modify or reduce assignments/tasks</li> <li>● Reduce length of assignment for different mode of delivery</li> <li>● Increase one-to-one time</li> <li>● Prioritize tasks</li> <li>● Use graphic organizers</li> <li>● Use online resources for skill building</li> <li>● Provide teacher notes</li> <li>● Use collaborative grouping strategies such as small groups</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/specialed/">http://www.state.nj.us/education/specialed/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Provide text-to-speech</li> <li>● Use of translation dictionary or software</li> <li>● Provide graphic organizers</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/ELL.htm">http://www.state.nj.us/education/aps/cccs/ELL.htm</a></li> <li>● Adapt a Strategy – Adjusting strategies for ESL students - <a href="http://www.teachersfirst.com/content/esl/adaptstrat.cfm">http://www.teachersfirst.com/content/esl/adaptstrat.cfm</a></li> </ul>	<ul style="list-style-type: none"> <li>● Tiered interventions following RTI framework</li> <li>● Effective RTI strategies for teachers - <a href="http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/">http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/</a></li> <li>● Interventional Central - <a href="http://www.interventioncentral.org/">http://www.interventioncentral.org/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Process should be modified: higher order thinking skills, open-ended thinking, discovery</li> <li>● Utilize project-based learning for greater depth of knowledge</li> <li>● Utilize exploratory connections to higher grade concepts</li> <li>● Contents should be modified: real world problems, audiences, deadlines, evaluations, transformations</li> <li>● Learning environments should be modified: student-centered learning, independence, openness, complexity, groups varied</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm">http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm</a></li> </ul>

**Califon Public School  
Curriculum**



<b>Subject: Algebra</b>	<b>Grade: 8</b>	<b>Unit #: 4</b>	<b>Pacing: Approx. 7 Weeks</b>
<b>Unit Title: Advanced Functions and Equations</b>			

**OVERVIEW OF UNIT:**

**Explore mathematical relationships between two variables or attributes using graphs, tables, expressions, and equations with emphasis on functional relationships.**  
**Explore operations with rational expressions and how to solve rational equations.**

<b>Unit References</b>	
<b>Big Ideas</b>	<b>Essential Questions</b>
Mathematics is a language of carefully designed terms and symbols. Mathematics is used to make informed decisions about problems in everyday life. Many real-world complex problems require simplification to solve.	How do humans explain their world through quantitative representations? How would your life be affected if the machines around you behaved unpredictably? How do we quantify things that can't be counted? What does it mean to simplify in the language of algebra? How can patterns be used to simplify mathematical expressions?
<b>Objectives</b>	
<ul style="list-style-type: none"> <li>• Students will be able to determine how humans explain their world through quantitative representations.</li> <li>• Students will be able to state how your life will be affected if the machines around you behave unpredictably.</li> <li>• Students will be able to determine how to quantify things that can't be counted.</li> <li>• Students will be able to determine what it means to simplify in the language of algebra.</li> <li>• Students will be able to anticipate how patterns can be used to simplify mathematical expressions.</li> </ul>	



Assessment	
<b>Formative Assessment:</b> <ul style="list-style-type: none"><li>● Homework</li><li>● Skill Sheets</li><li>● Classwork</li><li>● Projects</li><li>● Exit Sips</li><li>● Teacher Observations</li><li>● Discussion</li><li>● Math Minutes</li></ul>	
<b>Summative Assessment:</b> <ul style="list-style-type: none"><li>● Quizzes</li><li>● Tests</li></ul>	
<b>Benchmark:</b> <ul style="list-style-type: none"><li>● Link It</li></ul>	
<b>Alternative:</b> <ul style="list-style-type: none"><li>● Performance Tasks</li><li>● Extended Projects</li><li>● Modified tests independently developed by teacher</li></ul>	
Key Vocabulary	
<ul style="list-style-type: none"><li>● Conjugate</li><li>● Converse</li><li>● Distance Formula</li><li>● Extraneous Solution</li><li>● Hypotenuse</li></ul>	<ul style="list-style-type: none"><li>● Square Root Function</li><li>● Asymptote</li><li>● Complex Fraction</li><li>● Excluded Value</li><li>● Extraneous Solution</li></ul>

<ul style="list-style-type: none"><li>● Legs</li><li>● Midpoint</li><li>● Pythagorean Triple</li><li>● Radical Expression</li><li>● Radical Equation</li><li>● Radical Function</li><li>● Radicand</li><li>● Rationalizing the Denominator</li><li>● Solving the Triangle</li></ul>	<ul style="list-style-type: none"><li>● Inverse Variation</li><li>● LCD</li><li>● LCM</li><li>● Mixed Expression</li><li>● Product Rule</li><li>● Rate Problems</li><li>● Rational Equation</li><li>● Rational Expression</li><li>● Rational Function</li><li>● Work Problems</li></ul>
<p>Resources &amp; Materials</p> <ul style="list-style-type: none"><li>● Textbook (Glencoe Algebra 1)</li><li>● SMARTBoard</li><li>● Calculator</li><li>● Teacher-made materials</li></ul>	

**Technology Infusion**

**Teacher Technology:**

- [www.khanacademy.com](http://www.khanacademy.com)
- [www.desmos.com](http://www.desmos.com)
- SMARTBoard
- Calculator-scientific
- Graphing calculator
- [www.factmonster.com](http://www.factmonster.com)

**Student Technology:**

- [www.khanacademy.com](http://www.khanacademy.com)
- [www.desmos.com](http://www.desmos.com)
- SMARTBoard
- Calculator-scientific
- Graphing calculator
- Chrome books

- [www.factmonster.com](http://www.factmonster.com)

**Activities:**

- Students will use the Graphing calculators and [www.desmos.com](http://www.desmos.com) to graph radical functions.

Standard	Standard Description
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.

<b>Interdisciplinary Integration</b>
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**Activities:**

- Students will read and interpret texts in order to solve multi-step word problems.
- Students will compose written explanations of problem solving techniques so that their thinking is clear and supported by mathematical details, containing computation and appropriate vocabulary.

Standard	Standard Description
NJSLSA.SL4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

<b>21<sup>st</sup> Century Life Skills</b>
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**Activities:**

- Students will work both individually and in collaborative groups to interpret and organize data and problem solve while utilizing varied strategies to complete a task.
- Students will discuss various solutions to a problem, communicating thinking effectively both verbally and in writing.

Standard	Standard Description
9.4.8.IML.12	Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.

**Careers**

**Activities:**

- Students will discuss and then write detailed explanations utilizing appropriate mathematical vocabulary to explain their thought process for obtaining solutions to specific problems.

**Standard**

**Standard Description**

CRP4

Communicate clearly and effectively and with reason.

Common Core State Standards for Mathematical Practice: Bold all that apply	
MP #	Practice
1	<b>Make sense of problems and persevere in solving them.</b>
2	<b>Reason abstractly and quantitatively.</b>
3	Construct viable arguments and critique the reasoning of others.
4	<b>Model with mathematics.</b>
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.

Standards	
Standard #	Standard Description
A.APR.3	Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial
N.RN.3	Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a non-zero rational number and an irrational number is irrational.
F.IF.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.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.
F.IF.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
F.IF.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. <ol style="list-style-type: none"> <li>Graph linear and quadratic functions and show intercepts, maxima, and minima.</li> <li>Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.</li> </ol>
F.IF.8a	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. <ol style="list-style-type: none"> <li>Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.</li> </ol>

F.IF.9	Compare properties of two functions each represented in 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.
F.BF.1	Compare properties of two functions each represented in 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.
F.BF.3	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$ , $k f(x)$ , $f(kx)$ , and $f(x + k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.
F.LE.1	Distinguish between situations that can be modeled with linear functions and with exponential functions. a. Prove that linear functions grow by equal differences over equal intervals; and that exponential functions grow by equal factors over equal intervals. b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative another.
F.LE.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).
F.LE.3	Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.
F.LE.5	Interpret the parameters in a linear or exponential function in terms of a context.

Major Content (MC) Supporting Content (SC) Additional Content (AC)

Differentiation			
Special Education	English Language Learners (ELL)	Response to Intervention (RTI)	Enrichment
<ul style="list-style-type: none"> <li>● Provide modifications &amp; accommodations as listed in the student’s IEP</li> <li>● Position student near helping peer or have quick access to teacher</li> <li>● Modify or reduce assignments/tasks</li> <li>● Reduce length of assignment for different mode of delivery</li> <li>● Increase one-to-one time</li> <li>● Prioritize tasks</li> <li>● Use graphic organizers</li> <li>● Use online resources for skill building</li> <li>● Provide teacher notes</li> <li>● Use collaborative grouping strategies such as small groups</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/specialed/">http://www.state.nj.us/education/specialed/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Provide text-to-speech</li> <li>● Use of translation dictionary or software</li> <li>● Provide graphic organizers</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/ELL.htm">http://www.state.nj.us/education/aps/cccs/ELL.htm</a></li> <li>● Adapt a Strategy – Adjusting strategies for ESL students - <a href="http://www.teachersfirst.com/content/esl/adaptstrat.cfm">http://www.teachersfirst.com/content/esl/adaptstrat.cfm</a></li> </ul>	<ul style="list-style-type: none"> <li>● Tiered interventions following RTI framework</li> <li>● Effective RTI strategies for teachers - <a href="http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/">http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/</a></li> <li>● Interventional Central - <a href="http://www.interventioncentral.org/">http://www.interventioncentral.org/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Process should be modified: higher order thinking skills, open-ended thinking, discovery</li> <li>● Utilize project-based learning for greater depth of knowledge</li> <li>● Utilize exploratory connections to higher grade concepts</li> <li>● Contents should be modified: real world problems, audiences, deadlines, evaluations, transformations</li> <li>● Learning environments should be modified: student-centered learning, independence, openness, complexity, groups varied</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm">http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm</a></li> </ul>

**Califon Public School  
Curriculum**



<b>Subject: Algebra</b>	<b>Grade: 8</b>	<b>Unit #:5</b>	<b>Pacing: Approx. 7 Weeks</b>
<b>Unit Title: Data Analysis</b>			

**OVERVIEW OF UNIT:**

**Explore techniques for organizing and analyzing data. Apply the concepts of probability to interpret data.**

<b>Unit References</b>	
<b>Big Ideas</b>	<b>Essential Questions</b>
<ul style="list-style-type: none"> <li>● Raw data becomes useful information after analysis and through appropriate presentation.</li> <li>● Mathematics is a language of carefully designed terms and symbols.</li> <li>● Mathematics is used to make informed decisions about problems in everyday life.</li> </ul>	<ul style="list-style-type: none"> <li>● How can collecting and analyzing data help you make decisions or predictions?</li> <li>● In what situations can incorrectly presented data be deceiving or even dangerous?</li> <li>● What are the different ways that humans deal with chance?</li> </ul>
<b>Objectives</b>	
<ul style="list-style-type: none"> <li>● Students will be able to collect and analyze data to help make decisions or predictions.</li> <li>● Students will be able to determine in what situations can incorrectly presented data be deceiving or even dangerous.</li> <li>● Students will be able to determine the different ways that humans deal with chance.</li> </ul>	
<b>Assessment</b>	
<b>Formative Assessment:</b>	
<ul style="list-style-type: none"> <li>● Homework</li> <li>● Skill Sheets</li> <li>● Classwork</li> <li>● Projects</li> </ul>	



- Exit Sips
- Teacher Observations
- Discussion
- Math Minutes

**Summative Assessment:**

- Quizzes
- Tests

**Benchmark:**

- Link It

**Alternative:**

- Performance Tasks
- Extended Projects
- Modified tests independently developed by the teacher

**Key Vocabulary**

- Bias
- Combination
- Compound Event
- Convenience Sample
- Dependent Events
- Discrete Random Variable
- Distribution
- Expected Value
- Experiment
- Experimental Probability
- Independent Events
- Linear Transformation

- Population
- Probability Distribution
- Probability Graph
- Random Variable
- Sample
- Self-Selected Sample
- Simple Random Sample
- Simulation
- Standard Deviation
- Statistic
- Statistical Inference
- Stratified Sample

<ul style="list-style-type: none"> <li>• Mean Absolute Deviation</li> <li>• Mutually Exclusive Events</li> <li>• Observational Study</li> <li>• Parameter</li> <li>• Permutation</li> </ul>	<ul style="list-style-type: none"> <li>• Survey</li> <li>• Systemic Sample</li> <li>• Theoretical Probability</li> <li>• Variance</li> </ul>
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**Resources& Materials**

<ul style="list-style-type: none"> <li>• Glencoe Algebra 1</li> <li>• SMARTBoard</li> <li>• Calculator</li> <li>• Teacher-created Materials</li> </ul>
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**Technology Infusion**

**Teacher Technology:**

- www.khanacademy.com
- [www.desmos.com](http://www.desmos.com)
- SMARTBoard
- Graphing Calculator
- Chrome books
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**Activities:**

- Students will use the SMARTBoard and their Chrome books to collect and analyze data from real world scenarios.

Standard	Standard Description
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.

<b>Interdisciplinary Integration</b>	
<b>Activities:</b> <ul style="list-style-type: none"> <li>• Students will read and interpret texts in order to solve multi-step word problems.</li> <li>• Students will compose written explanations of problem solving techniques so that their thinking is clear and supported by mathematical details, containing computation and appropriate vocabulary.</li> </ul>	
<b>Standard</b>	<b>Standard Description</b>
NJSLSA.SL4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

<b>21<sup>st</sup> Century Life Skills</b>	
<b>Activities:</b> <ul style="list-style-type: none"> <li>• Students will work both individually and in collaborative groups to interpret and organize data and problem solve while utilizing varied strategies to complete a task.</li> <li>• Students will discuss various solutions to a problem, communicating thinking effectively both verbally and in writing.</li> </ul>	
<b>Standard</b>	<b>Standard Description</b>
9.4.8.IML.12	Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.

<b>Careers</b>	
<b>Activities:</b> <ul style="list-style-type: none"> <li>• Students will discuss and then write detailed explanations utilizing appropriate mathematical vocabulary to explain their thought process for obtaining solutions to specific problems.</li> </ul>	
<b>Standard</b>	<b>Standard Description</b>
CRP4	Communicate clearly and effectively and with reason.

Common Core State Standards for Mathematical Practice: Bold all that apply	
MP #	Practice
1	<b>Make sense of problems and persevere in solving them.</b>
2	<b>Reason abstractly and quantitatively.</b>
3	<b>Construct viable arguments and critique the reasoning of others.</b>
4	<b>Model with mathematics.</b>
5	<b>Use appropriate tools strategically.</b>
6	<b>Attend to precision.</b>
7	<b>Look for and make use of structure.</b>
8	<b>Look for and express regularity in repeated reasoning.</b>

Standards	
Standard #	Standard Description
S.ID.1	Represent data with plots on the real number line (dot plots histograms and box plots).
S.ID.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.3	Interpret differences in shape center and spread in the context of the data sets accounting for possible effects of extreme data points (outliers).
S.ID.5	Summarize and interpret categorical data for two categories in two-way frequency tables; recognize associations and trends in the data.
S.ID.6a	Represent and describe data for two variables on a scatter plot, fit a function to the data, analyze residuals (in order to informally assess fit), and use the function to solve problems. Uses a given function or choose a function suggested by the context. Emphasize linear and exponential models.
S.ID.7	Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
S.ID.8	Compute (using technology) and interpret the correlation coefficient of a linear fit.
S.ID.9	Distinguish between correlation and causation.

Major Content (MC) Supporting Content (SC) Additional Content (AC)

Differentiation			
Special Education	English Language Learners (ELL)	Response to Intervention (RTI)	Enrichment
<ul style="list-style-type: none"> <li>● Provide modifications &amp; accommodations as listed in the student’s IEP</li> <li>● Position student near helping peer or have quick access to teacher</li> <li>● Modify or reduce assignments/tasks</li> <li>● Reduce length of assignment for different mode of delivery</li> <li>● Increase one-to-one time</li> <li>● Prioritize tasks</li> <li>● Use graphic organizers</li> <li>● Use online resources for skill building</li> <li>● Provide teacher notes</li> <li>● Use collaborative grouping strategies such as small groups</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/specialed/">http://www.state.nj.us/education/specialed/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Provide text-to-speech</li> <li>● Use of translation dictionary or software</li> <li>● Provide graphic organizers</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/ELL.htm">http://www.state.nj.us/education/aps/cccs/ELL.htm</a></li> <li>● Adapt a Strategy – Adjusting strategies for ESL students - <a href="http://www.teachersfirst.com/content/esl/adaptstrat.cfm">http://www.teachersfirst.com/content/esl/adaptstrat.cfm</a></li> </ul>	<ul style="list-style-type: none"> <li>● Tiered interventions following RTI framework</li> <li>● Effective RTI strategies for teachers - <a href="http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/">http://www.specialeducationguide.com/pre-k-12/response-to-intervention/effective-rti-strategies-for-teachers/</a></li> <li>● Interventional Central - <a href="http://www.interventioncentral.org/">http://www.interventioncentral.org/</a></li> </ul>	<ul style="list-style-type: none"> <li>● Process should be modified: higher order thinking skills, open-ended thinking, discovery</li> <li>● Utilize project-based learning for greater depth of knowledge</li> <li>● Utilize exploratory connections to higher grade concepts</li> <li>● Contents should be modified: real world problems, audiences, deadlines, evaluations, transformations</li> <li>● Learning environments should be modified: student-centered learning, independence, openness, complexity, groups varied</li> <li>● NJDOE resources - <a href="http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm">http://www.state.nj.us/education/aps/cccs/g_and_t_req.htm</a></li> </ul>