



# Mathematics Department

## College Algebra

**Developed By:** Jessica Mabel

**Effective Date:**

**Scope and Sequence**

Month	College Algebra
September	<p><b>Unit 1: Linear Functions</b></p> <ul style="list-style-type: none"> <li>- Solve linear equations using add/sub/mult/division</li> <li>- Solve a formula for one of its variables</li> <li>- Use ratios, rates, and proportions to solve real-life problems</li> <li>- Percents</li> <li>- Solve absolute equations</li> <li>- Solve and graph inequalities using addition/subtraction/multiplication/division</li> <li>-Solve compound inequalities</li> <li>- Solve absolute value inequalities</li> <li>-Identify linear functions and linear equations</li> <li>-Find x- and y-intercepts to graph lines and interpret their meanings in real-world situations</li> <li>-Find rates of change and slopes</li> <li>- Graph linear equations using a t-chart, x and y intercepts, slope-intercept form, standard form, point-slope form,</li> <li>- Graph horizontal and vertical lines</li> <li>-Write linear equations in slope-intercept form, standard form, and point slope form given two points and a point and a slope</li> <li>-Identify, graph, and write equations of parallel and perpendicular lines.</li> <li>-Solve systems of equations by graphing, elimination, and substitution</li> <li>-Graph and solve linear inequalities in two variables</li> <li>-Graph and solve systems of linear inequalities in two variables</li> </ul>
October	<p><b>Unit 2: Factoring and Quadratic Functions</b></p> <ul style="list-style-type: none"> <li>-Find the GCF of a group of monomials</li> <li>-Factor polynomials by using the greatest common factor</li> <li>-Factor polynomials by grouping</li> <li>-Factor quadratic trinomials</li> <li>-Factor perfect-square trinomials and the difference of two squares</li> <li>-Identify quadratic functions</li> <li>-Identify the axis of symmetry, zeros, domain and range, and maximum/minimum of quadratic functions</li> <li>-Graph a quadratic function in standard form and vertex form</li> <li>-Graph and transform quadratic functions</li> <li>-Solve quadratic equations by graphing, factoring, and square roots</li> <li>-Solve quadratic functions by completing the square and the quadratic formula</li> <li>-Determine the number of solutions by using the discriminant</li> <li>-Solve systems of equations in two variables in which one equations and the other is quadratic</li> </ul>
November	<p><b>Unit 3: Functions</b></p>
December	

January	
February	
March	
April	
May	
June	

Unit 1
Linear Functions
Summary and Rationale
Recommended Pacing
___ days, weeks, etc.
Standards
(Sub Standard Heading)

RL.K.1

With prompting and support, ask and answer questions about key details in a text.

Interdisciplinary Connections

Standard x.x

Integration of Technology	
Instructional Focus	
<b>Enduring Understandings:</b>	<b>Essential Questions:</b>
	How does an intergrated STEAM method of integrate skills and process in science, technology, engineering, art, and mathmatics to solve probelm?
<b>Evidence of Learning (Assessments)</b>	
<b>Objectives (SLO)</b>	
Students will know: . .	Students will be able to: . .
Suggested Resources/Technology Tools	

## Modifications

Special Education -  
ELL -  
Gifted and Talented -  
504 -

## 21ST CENTURY LIFE AND CAREER STANDARDS

*Please select all standards that apply to this unit of study:*

- Act as a responsible and contributing citizen and employee.
- Apply appropriate academic and technical skills.
- Attend to personal health and financial well being.
- Communicate clearly and effectively and with reason.
- Consider the environmental social and economics impacts of decisions.
- Demonstrate creativity and innovation.
- Employ valid and reliable research strategies.
- Utilize critical thinking to make sense of problems and persevere in solving them.
- Model integrity, ethical leadership, and effective management.
- Plan education and career paths aligned to personal goals.
- Use technology to enhance productivity.
- Work productively in teams while using cultural global competence.

Suggestions on integrating these standards can be found at: <http://www.state.nj.us/education/cccs/2014/career/9.pdf>

*LINKS TO CAREERS:*

## Unit 2

**SOLVE MY PROBLEM**

Summary and Rationale

Instructional Focus

Recommended Pacing

\_\_\_ days, weeks, etc.

Standards

(Sub Standard Heading)

RL.K.1

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Interdisciplinary Connections	
Standard x.x	
Integration of Technology	
Instructional Focus	
<b>Enduring Understandings:</b>	<b>Essential Questions:</b>
<b>Evidence of Learning (Assessments)</b>	
<b>Objectives (SLO)</b>	

Students will know:

.  
.

Students will be able to:

.  
.

### Suggested Resources/Technology Tools

### Modifications

Special Education -  
ELL -  
Gifted and Talented -  
504 -

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*LINKS TO CAREERS:*



Unit 3

**SOLVE YOUR PROBLEM**

Summary and Rationale

Instructional Focus

Recommended Pacing

\_\_\_ days, weeks, etc.

Standards

(Sub Standard Heading)

RL.K.1

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Interdisciplinary Connections	
Standard x.x	
Integration of Technology	
Instructional Focus	
<b>Enduring Understandings:</b>	<b>Essential Questions:</b>
<b>Evidence of Learning (Assessments)</b>	

**Objectives (SLO)**

Students will know:

.  
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Students will be able to:

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**Suggested Resources/Technology Tools**

**Modifications**

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ELL -  
Gifted and Talented -  
504 -

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*LINKS TO CAREERS:*