

**Math Department Curriculum Map Template, 2018-19**

**Subject: Algebra B (Regents prep), Algebra I Summer School, Algebra I Extended Day**

**Textbook: Emathinstruction.com, McGraw Hill 2018**

**CC Algebra 1 Regents Examination Breakdown:**

- **Statistics - 10%, Numbers, Operations, Properties - 6%, Rate - 3%, Powers - 2%**
- **Equations and Inequalities - 25%**
- **Functions - 25%**
- **Polynomials - 10%, Quadratics - 10%, Systems - 9%**

Marking Periods	Unit Title (Big Idea/Major Focus)	Topics/Skills	Evidence of Learning (Assessments)	Resources (texts, online tools, etc.)
<p align="center"><b>Marking Period 1</b></p>	<p>Unit 1: Introduction/Overview of Functions</p> <p>Enduring Understanding:</p> <ul style="list-style-type: none"> <li>• Functions can be represented in multiple, equivalent ways</li> <li>• Function rules describe the quantitative relationship between variables</li> </ul> <p>Essential Questions:</p> <ul style="list-style-type: none"> <li>• How do we measure change?</li> <li>• Are all equations functions? Can you solve a function?</li> <li>• Can an input have multiple outputs?</li> </ul>	<ul style="list-style-type: none"> <li>• Define function and interpret graphs in the context of a situation</li> <li>• Identify a function given a table, graph, or rule</li> <li>• Function notation - <math>f(x)</math>, <math>g(x)</math>, <math>f(n)</math>, etc.</li> <li>• Evaluate a functions with a given value (linear, exponential, and quadratic)</li> <li>• State domain and range given a graph or a function rule as an inequality (simple or compound)</li> <li>• Graphing functions given a rule (linear, exponential, quadratic, absolute value, and square root focusing on precision of choosing and plotting integer points)</li> <li>• Graphical features of functions</li> <li>• Transformations based on the function rules</li> <li>• Matching functions to graphs</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pre-Assessment Check</li> <li><input type="checkbox"/> Performance Tasks</li> <li><input type="checkbox"/> Quizzes</li> <li><input type="checkbox"/> Castle Learning</li> <li><input type="checkbox"/> Exit Tickets</li> <li><input type="checkbox"/> Do Nows</li> <li><input type="checkbox"/> Class Discussion</li> <li><input type="checkbox"/> Daily Handouts</li> <li><input type="checkbox"/> Unit Review and Re-engagement Activities</li> <li><input type="checkbox"/> Unit Exam</li> </ul>	<p>Emathinstruction - Unit 3, 11 Castle Learning McGraw Hill 2018 - Chapter 1, Chapter 3</p>
	<p>Unit 2: Linear Functions, Equations, Inequalities</p> <p>Enduring Understanding:</p> <ul style="list-style-type: none"> <li>• A constant rate of change distinguishes a linear function from other functions.</li> <li>• Linear functions can be used to make predictions in real world situations.</li> </ul> <p>Essential Questions:</p> <ul style="list-style-type: none"> <li>• Why are lines straight?</li> <li>• Where do lines begin?</li> <li>• What real world situations can be modeled by linear functions?</li> </ul>	<ul style="list-style-type: none"> <li>• Define linear function and state features (i.e. slope/constant rate of change/common difference, initial value/y-intercept)</li> <li>• Introduce different forms of linear functions: slope-intercept and standard</li> <li>• Interpret the meaning of slope/common difference and y-intercept in the context of a situation</li> <li>• Writing linear function rules given a situation in both slope-intercept and standard form (emphasize annotating word problems and defining the variable)</li> <li>• Writing a linear function rule by using the calculator (linear regression) and finding the correlation coefficient</li> <li>• Review solving multi-step equations and inequalities</li> <li>• Transforming formulas for indicated variable (use formulas only from past Regents problems)</li> <li>• Graphing linear inequalities</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pre-Assessment Check</li> <li><input type="checkbox"/> Performance Tasks</li> <li><input type="checkbox"/> Quizzes</li> <li><input type="checkbox"/> Castle Learning</li> <li><input type="checkbox"/> Exit Tickets</li> <li><input type="checkbox"/> Do Nows</li> <li><input type="checkbox"/> Class Discussion</li> <li><input type="checkbox"/> Daily Handouts</li> <li><input type="checkbox"/> Unit Review and Re-engagement Activities</li> <li><input type="checkbox"/> Unit Exam</li> </ul>	<p>Emathinstruction - Unit 2 and 4 McGraw Hill Textbook - Algebra 1 2018 Edition</p>
	<p>Unit 3: Systems of Equations/Inequalities</p> <p>Enduring Understanding:</p> <ul style="list-style-type: none"> <li>• Systems of linear equations can be used to model problems when there are multiple variables.</li> <li>• Systems of equations can be solved by graphing, substitution, or eliminating a variable.</li> </ul> <p>Essential Questions:</p> <ul style="list-style-type: none"> <li>• What does the number of solutions (none, one or infinite) of a system of linear equations represent?</li> <li>• What are the advantages and disadvantages of solving a system of linear equations graphically</li> </ul>	<ul style="list-style-type: none"> <li>• Writing a system of equations given a situation (emphasize annotating the word problem and defining variables)</li> <li>• Graphing linear systems of equations and stating the solution/intersection point (include quadratic-linear example)</li> <li>• Interpreting the meaning of the intersection point in the context of a situation</li> <li>• Solving systems of equations algebraically using substitution and elimination</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pre-Assessment Check</li> <li><input type="checkbox"/> Performance Tasks</li> <li><input type="checkbox"/> Quizzes</li> <li><input type="checkbox"/> Castle Learning</li> <li><input type="checkbox"/> Exit Tickets</li> <li><input type="checkbox"/> Do Nows</li> <li><input type="checkbox"/> Class Discussion</li> <li><input type="checkbox"/> Daily Handouts</li> <li><input type="checkbox"/> Unit Review and Re-engagement Activities</li> <li><input type="checkbox"/> Unit Exam</li> </ul>	<p>EMathinstruction - Unit 5 McGraw Hill Textbook - Algebra 1 2018 Edition</p>

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	<p>versus algebraically?</p>	<ul style="list-style-type: none"> <li>Determining which is the most appropriate method to use when solving a given system (graphing, substitution, or elimination)</li> <li>Practice Regents problems involving writing systems and comparing to see which is the better deal in a situation</li> <li>Graphing systems of linear inequalities and state points in the solution region</li> <li>Writing systems of linear inequalities given a situation</li> <li>Practice Regents problems involving writing, graphing, and interpreting systems of linear inequalities</li> </ul>		
<p align="center"><b>Marking Period 2</b></p>	<p>Unit 4: Exponential Functions</p> <p>Enduring Understanding:</p> <ul style="list-style-type: none"> <li>A constant multiplier distinguishes an exponential function from other functions.</li> <li>Exponential functions can be used to make predictions in real world situations.</li> </ul> <p>Essential Questions:</p> <ul style="list-style-type: none"> <li>What is the difference between a linear and an exponential function? Is rate still constant?</li> <li>Is it all about the base?</li> </ul>	<ul style="list-style-type: none"> <li>Compare linear vs exponential functions (constant additive vs constant multiplier)</li> <li>Interpret the meaning of the starting amount/initial value and base/multiplier in the context of a situation</li> <li>Write an exponential function rule given a situation</li> <li>Determine the percent of increase or decrease given an exponential function rule</li> <li>Writing an exponential function rule by using the calculator (exponential regression)</li> <li>Find a given term using a recursive function rule (use past Regents questions)</li> <li>Practice Regents problems which involve comparing linear and exponential functions in various forms at the end of this unit (popular topic on the exam)</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pre-Assessment Check</li> <li><input type="checkbox"/> Performance Tasks</li> <li><input type="checkbox"/> Quizzes</li> <li><input type="checkbox"/> Castle Learning</li> <li><input type="checkbox"/> Exit Tickets</li> <li><input type="checkbox"/> Do Nows</li> <li><input type="checkbox"/> Class Discussion</li> <li><input type="checkbox"/> Daily Handouts</li> <li><input type="checkbox"/> Unit Review and Re-engagement Activities</li> <li><input type="checkbox"/> Unit Exam</li> </ul>	<p>Emathinstruction - Unit 6, 11 McGraw Hill Textbook - Algebra 1 2018 Edition</p>
	<p>Unit 5: Quadratics</p> <p>Enduring Understanding:</p> <ul style="list-style-type: none"> <li>The Structure of a Quadratic Equation provides insights about its key characteristics and how to find its solutions.</li> <li>Applying Zero Product Property to higher order polynomials in factored form is essential to determining the roots.</li> </ul> <p>Essential Questions :</p> <ul style="list-style-type: none"> <li>How many solutions are there to a quadratic function?</li> <li>What does a solution represent?</li> <li>How do we determine the best method for obtaining a solution?</li> </ul>	<ul style="list-style-type: none"> <li>Features of a quadratic function (i.e. roots/zeros, vertex, y-intercept, axis of symmetry)</li> <li>3 major forms of a quadratic function (standard, factored, and vertex)</li> <li>Discuss how the “a” value in the function affects the appearance of the parabola</li> <li>Graphing quadratic functions in all forms and identifying key features (i.e. roots, vertex, axis of symmetry)</li> <li>Interpret the meaning of the vertex and roots in the context of a situation</li> <li>Discuss the shifts/translations of the quadratic functions based on constants inside or outside grouping symbols</li> <li>Writing quadratic equations to model area problems (optional, if time permits)</li> <li>Solving quadratic equations by factoring (including linear/quadratic system)</li> <li>Solving quadratic equations by using the quadratic formula</li> <li>Solving quadratic equations by storing values for “x” in the calculator (including irrational solutions)</li> <li>Rational vs Irrational values (use calculator)</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pre-Assessment Check</li> <li><input type="checkbox"/> Performance Tasks</li> <li><input type="checkbox"/> Quizzes</li> <li><input type="checkbox"/> Castle Learning</li> <li><input type="checkbox"/> Exit Tickets</li> <li><input type="checkbox"/> Do Nows</li> <li><input type="checkbox"/> Class Discussion</li> <li><input type="checkbox"/> Daily Handouts</li> <li><input type="checkbox"/> Unit Review and Re-engagement Activities</li> <li><input type="checkbox"/> Unit Exam</li> </ul>	<p>Emathinstruction: Unit 7, 8, 9 McGraw Hill Textbook - Algebra 1 2018 Edition</p>
	<p>Unit 6: Statistics</p> <p>Enduring Understanding:</p> <ul style="list-style-type: none"> <li>Measures of Center are used to interpret univariate data</li> <li>Visual models illustrate the correlation of bivariate data</li> </ul> <p>Essential Questions:</p> <ul style="list-style-type: none"> <li>How do we interpret evidence in order to support arguments?</li> </ul>	<ul style="list-style-type: none"> <li>Calculating measures of central tendency (mean, median, mode, range, standard deviation)</li> <li>Constructing and interpreting box and whisker plots (emphasis on finding the key 5 points on the calculator)</li> <li>Constructing and interpreting two-way frequency tables</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pre-Assessment Check</li> <li><input type="checkbox"/> Performance Tasks</li> <li><input type="checkbox"/> Quizzes</li> <li><input type="checkbox"/> Castle Learning</li> <li><input type="checkbox"/> Exit Tickets</li> <li><input type="checkbox"/> Do Nows</li> <li><input type="checkbox"/> Class Discussion</li> <li><input type="checkbox"/> Daily Handouts</li> <li><input type="checkbox"/> Unit Review and Re-engagement Activities</li> <li><input type="checkbox"/> Unit Exam</li> </ul>	<p>Emathinstruction: Unit 10 McGraw Hill Textbook - Algebra 1 2018 Edition</p>

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	Unit 7: Calculator Strategies  Essential Questions: <ul style="list-style-type: none"> <li>• How can we use tools strategically?</li> </ul>	Discuss how students can determine if a problem can be solved by using the calculator only. These questions usually represent 25% of all possible points on the exam. The following strategies should be reviewed during this week: <ul style="list-style-type: none"> <li>• Storing values for “X” to evaluate an expression or find the solution to an equation</li> <li>• Using “Y=” and the table of values to find equivalent expressions or functions</li> <li>• Finding intersection points on graphs (using ZOOM feature)</li> <li>• Creating equations from a table or graph by using the regression feature</li> <li>• Finding specific points on the table of values (TBLSET feature)</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pre-Assessment Check</li> <li><input type="checkbox"/> Performance Tasks</li> <li><input type="checkbox"/> Quizzes</li> <li><input type="checkbox"/> Castle Learning</li> <li><input type="checkbox"/> Exit Tickets</li> <li><input type="checkbox"/> Do Nows</li> <li><input type="checkbox"/> Class Discussion</li> <li><input type="checkbox"/> Daily Handouts</li> <li><input type="checkbox"/> Unit Review and Re-engagement Activities</li> <li><input type="checkbox"/> Unit Exam</li> </ul>	This calculator <a href="#">guide</a> is very useful McGraw Hill Textbook - Algebra 1 2018 Edition
	Unit 8: Regents Review	Students should practice a mixture of random regents problems from the JMAP, Problem-Attic, or the green Regents review booklets. During review, students should always be shown the rubric after solving constructed response problems so they can determine where and how to earn points on these questions. Strategies for eliminating multiple choice selections should also be reviewed during this time.	Quizzes should be administered throughout this unit, spiraling back to all covered topics.  Regents questions should be used.  Use the Unit Review quizzes as a guide for developing these assessments.	McGraw Hill Textbook - Algebra 1 2018 Edition Emathinstruction.com
<b>Midterm/Final Assessment</b>	<b>January/June Regents Examination</b>			
<b>Summer</b>	<b>Summer Assignment: Depends on course placement</b>			