

**LITCHFIELD PUBLIC SCHOOLS**  
**Core Curriculum**  
**Scope and Sequence**  
**Algebra I**

<p><b>How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?</b>  <b>How are quantitative relationships represented by numbers?</b>  <b>How do geometric relationships and measurement help us to solve problems and make sense of our world?</b>  <b>How can collecting, organizing and displaying data help us analyze information and make reasonable predictions and informed decisions?</b></p>				
	<b>CT Frameworks/Standards</b>	<b>Content and Skill Objectives</b> Students will be able to:	<b>Assessments</b>	<b>Resources</b>
<p><b>UNIT 1</b>   <b>PATTERNS IN ALGEBRA</b>   <b>4 Weeks</b></p>	<p>CT(Core) 1.1a(1) Identify, describe, create and generalize numeric, geometric, and statistical patterns with tables, graphs, words and symbolic rules.            CT(C) 1.1a(2) Make and justify predictions based on patterns.            CT(Core) 2.1a(1) Compare, locate, label and order real numbers on number lines, scales, coordinate grids and measurement tools.            (ALL ABOVE STANDARDS ARE ASSESSED ON THE CAPT TEST.)</p>	<ul style="list-style-type: none"> <li>• Identify patterns in number sequences.</li> <li>• Make predictions.</li> <li>• Represent quantities with variables.</li> <li>• Apply the order of operations.</li> <li>• Plot points on a number line as well as in a coordinate plane.</li> <li>• Represent linear patterns with equations and graphs.</li> <li>• Interpret a scatter plot.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.  <b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered in unit.            Teacher generated worksheets</p>	<p>Textbook: Algebra 1            Holt, Rinehart and Winston  <a href="http://www.glencoe.com">www.glencoe.com</a>  <a href="http://www.kutasoftware.com">www.kutasoftware.com</a>            TI-84 Plus Graphing Calculator and SMARTBoard emulator            CAPT released items:</p> <ul style="list-style-type: none"> <li>• Health Club</li> <li>• 3-Level Pyramid</li> </ul>

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<p style="text-align: center;"><b>UNIT 2</b></p> <p style="text-align: center;"><b>OPERATIONS IN ALGEBRA</b></p> <p style="text-align: center;"><b>3 Weeks</b></p>	<p>CT(Core) 2.1a(2) Select and use an appropriate form of number (integer, fraction, decimal, ratio, percent, exponential, scientific notation, irrational) to solve practical problems involving order, magnitude, measures, labels, locations, and scales. (ALL ABOVE STANDARDS ARE ASSESSED ON THE CAPT TEST.)</p>	<ul style="list-style-type: none"> <li>• Compare numbers of different magnitudes.</li> <li>• Simplify expressions (both numeric and algebraic) Apply operations to real numbers.</li> <li>• Apply properties (commutative, associative, transitive, etc.) to real numbers.</li> <li>• Identify subsets of the real number system and name the subsets to which specific number belongs.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.</p> <p><b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered.</p> <p><b>CAPT related simulation and performance tasks.</b></p>	<p>Textbook: Algebra 1 Holt, Rinehart and Winston <a href="http://www.glencoe.com">www.glencoe.com</a> <a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p>TI-84 Plus Graphing Calculator and SMARTBoard emulator CAPT released items</p>

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<p style="text-align: center;"><b>UNIT 3</b></p> <p style="text-align: center;"><b>EQUATIONS</b></p> <p style="text-align: center;"><b>4 Weeks</b></p>	<p>CT(C) 1.3a(2) Determine equivalent representations of an algebraic equation or inequality to simplify and solve problems.</p> <p>CT(Core) 2.2a(1) Select and use appropriate methods for computing to solve problems in a variety of contexts.</p> <p>(ALL ABOVE STANDARDS ARE ASSESSED ON THE CAPT TEST.)</p>	<ul style="list-style-type: none"> <li>• Solve equations involving adding and subtracting.</li> <li>• Solve equations involving multiplying and dividing.</li> <li>• Write equations that represent real-world situations.</li> <li>• Solve multi-step equations.</li> <li>• Apply the distributive property to solve equations.</li> <li>• Apply formulas when solving equations.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.</p> <p><b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered in unit.</p> <p><b>CAPT related simulation and performance tasks.</b></p>	<p>Textbook: Algebra 1 Holt, Rinehart and Winston</p> <p><a href="http://www.glencoe.com">www.glencoe.com</a></p> <p><a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p>TI-84 Plus Graphing Calculator and SMARTBoard emulator</p> <p>CAPT released items:</p> <ul style="list-style-type: none"> <li>• Rubric for E85</li> </ul>

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<p style="text-align: center;"><b>UNIT 4</b></p> <p style="text-align: center;"><b>PROPORTIONAL REASONING AND STATISTICS</b></p> <p style="text-align: center;"><b>5 Weeks</b></p>	<p>CT(Core) 4.1a (1) Collect real data and create meaningful graphical representations of data.</p> <p>CT(Core) 4.2a (3) Determine and use measures of spread and central tendency to describe and compare sets of data.</p> <p>(ALL ABOVE STANDARDS ARE ASSESSED ON THE CAPT TEST.)</p>	<ul style="list-style-type: none"> <li>• Identify the means and extremes.</li> <li>• Solve proportions.</li> <li>• Calculate equivalent fractions, decimals, and percents.</li> <li>• Solve problems using percent.</li> <li>• Determine the probability of an event.</li> <li>• Compare measures of central tendency (mean, median, and mode).</li> <li>• Represent data with frequency tables on the graphing calculator.</li> <li>• Organize data.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.</p> <p><b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered in unit.</p> <p><b>CAPT related simulation and performance tasks.</b></p>	<p>Textbook: Algebra 1 Holt, Rinehart and Winston</p> <p><a href="http://www.glencoe.com">www.glencoe.com</a></p> <p><a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p>TI-84 Plus Graphing Calculator and SMARTBoard emulator</p> <p>CAPT released items:</p> <ul style="list-style-type: none"> <li>• Danbury Temperatures</li> <li>• Fastest Runner</li> <li>• Chocolate Candies</li> <li>• History Test</li> <li>• Antique appraisals</li> </ul>

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<p style="text-align: center;"><b>UNIT 5</b></p> <p style="text-align: center;"><b>LINEAR FUNCTIONS</b></p> <p style="text-align: center;"><b>5 Weeks</b></p>	<p>CT(Core) 1.1a (3) Identify the characteristics of functions and relations, including domain and range.</p> <p>CT(Core) 1.2a (1) Represent functions and relations on the coordinate plane.</p> <p>CT(Core) 1.2a (2) Identify the appropriate symbolic representation for a function or relation displayed graphically or verbally.</p> <p>CT(Core) 1.2a (3) Recognize and explain the meaning of the slope and x- and y-intercepts as they relate to a context, graph, table, or equation.</p> <p>CT(Core) 1.2a (4) Evaluate and interpret the graphs of linear, exponential, and polynomial functions.</p> <p>(ALL ABOVE STANDARDS ARE ASSESSED ON THE CAPT TEST.)</p>	<ul style="list-style-type: none"> <li>• Identify the difference between relations and functions.</li> <li>• Describe the domain and range of a function.</li> <li>• Calculate the slope of a line.</li> <li>• Write the equation of a line in slope-intercept form.</li> <li>• Write the equation of a line in standard form.</li> <li>• Graph an equation of a line using point-slope form of a line.</li> <li>• Compare slopes of parallel and perpendicular lines.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.</p> <p><b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered in unit.</p> <p><b>CAPT related simulation and performance tasks.</b></p>	<p>Textbook: Algebra 1 Holt, Rinehart and Winston</p> <p><a href="http://www.glencoe.com">www.glencoe.com</a></p> <p><a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p>TI-84 Plus Graphing Calculator and SMARTBoard emulator</p> <p>CAPT released items</p>

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<p align="center"><b>UNIT 6</b></p> <p align="center"><b>INEQUALITIES AND ABSOLUTE VALUE</b></p> <p align="center"><b>3 Weeks</b></p>	<p>CT(Core) 1.3a (1) Model and solve problems with linear, quadratic, and absolute value equations and linear inequalities.</p> <p>CT(Core) 2.2a (2) Solve problems involving scientific notation and absolute value.</p> <p>(ALL ABOVE STANDARDS ARE ASSESSED ON THE CAPT TEST.)</p>	<ul style="list-style-type: none"> <li>• Solve simple inequalities.</li> <li>• Solve multi-step inequalities.</li> <li>• Solve compound inequalities.</li> <li>• Evaluate absolute value expressions.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.</p> <p><b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered in unit.</p> <p><b>CAPT related simulation and performance tasks.</b></p>	<p>Textbook: Algebra 1 Holt, Rinehart and Winston</p> <p><a href="http://www.glencoe.com">www.glencoe.com</a></p> <p><a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p>TI-84 Plus Graphing Calculator and SMARTBoard emulator</p> <p>CAPT released item</p>

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<p align="center"><b>UNIT 7</b></p> <p align="center"><b>SYSTEMS OF EQUATIONS AND INEQUALITIES</b></p> <p align="center"><b>4 Weeks</b></p>	<p>CT(Core) 1.3a (3) Solve systems of two linear equations using algebraic or graphical methods. (ALL ABOVE STANDARDS ARE ASSESSED ON THE CAPT TEST.)</p>	<ul style="list-style-type: none"> <li>• Solve systems of equations by graphing.</li> <li>• Solve systems of equations by substitution.</li> <li>• Solve systems of equations by elimination.</li> <li>• Solve systems of equations on the graphing calculator.</li> <li>• Write a system of equations for real-world problems.</li> <li>• Graph the solution to a system of equations.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.</p> <p><b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered in unit.</p> <p><b>CAPT related simulation and performance tasks.</b></p>	<p>Textbook: Algebra 1 Holt, Rinehart and Winston <a href="http://www.glencoe.com">www.glencoe.com</a> <a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p>TI-84 Plus Graphing Calculator and SMARTBoard emulator CAPT released items</p>

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<p align="center"><b>UNIT 8</b></p> <p align="center"><b>SYSTEMS OF EQUATIONS AND INEQUALITIES</b></p> <p align="center"><b>4 Weeks</b></p>	<p>CT(Core) 2.2a (2) Solve problems using scientific notation and absolute value graphical methods. (ALL ABOVE STANDARDS ARE ASSESSED ON THE CAPT TEST.)</p>	<ul style="list-style-type: none"> <li>• Define exponents and powers.</li> <li>• Simplify products of monomials.</li> <li>• Apply the laws of exponents.</li> <li>• Analyze negative and zero exponents.</li> <li>• Recognize the need for scientific notation.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.</p> <p><b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered in unit.</p> <p><b>CAPT related simulation and performance tasks</b></p>	<p>Textbook: Algebra 1 Holt, Rinehart and Winston <a href="http://www.glencoe.com">www.glencoe.com</a> <a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p>TI-84 Plus Graphing Calculator and SMARTBoard emulator CAPT released items:</p> <ul style="list-style-type: none"> <li>• Dinosaur Weights</li> </ul>

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<p style="text-align: center;"><b>UNIT 9</b></p> <p style="text-align: center;"><b>POLYNOMIALS AND FACTORING</b></p> <p style="text-align: center;"><b>4 Weeks</b></p>	No CT Frameworks/Standards align directly with this unit.	<ul style="list-style-type: none"> <li>• Perform operations on polynomials.</li> <li>• Perform multiplication on binomials using the FOIL method.</li> <li>• Factor polynomials using the greatest common factor approach.</li> <li>• Factor perfect square trinomials.</li> <li>• Factor the difference of two squares.</li> <li>• Factor quadratic trinomials.</li> <li>• Solve equations by factoring.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.</p> <p><b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered in unit.</p> <p><b>CAPT related simulation and performance tasks</b></p>	<p>Textbook: Algebra 1 Holt, Rinehart and Winston  <a href="http://www.glencoe.com">www.glencoe.com</a>  <a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p>TI-84 Plus Graphing Calculator and SMARTBoard emulator            CAPT released items</p>

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<p style="text-align: center;"><b>UNIT 10</b></p> <p style="text-align: center;"><b>QUADRATIC FUNCTIONS</b></p> <p style="text-align: center;"><b>5 Weeks</b></p>	<p>CT(Core) 1.1a (4) Describe and compare properties and classes of linear, quadratic, and exponential functions. (ALL ABOVE STANDARDS ARE ASSESSED ON THE CAPT TEST.)</p>	<ul style="list-style-type: none"> <li>• Identify a quadratic function both algebraically and graphically.</li> <li>• Graph a parabola.</li> <li>• Evaluate square roots.</li> <li>• Solve equations involving square roots.</li> <li>• Apply The Quadratic Formula to find real solutions to a quadratic function.</li> </ul>	<p><b>Quizzes</b> –Encompass at least one objective given throughout the unit. There will be a minimum of three quizzes, but the total number will be dependent on need of the students.</p> <p><b>Unit Test</b> – Assesses computation as well as critical thinking and problems solving skills related to objectives covered in unit.</p> <p><b>CAPT related simulation and performance tasks</b></p>	<p>Textbook: Algebra 1 Holt, Rinehart and Winston  <a href="http://www.glencoe.com">www.glencoe.com</a>  <a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p>TI-84 Plus Graphing Calculator and SMARTBoard emulator</p>