

Little Compton Mathematics Curriculum-Grade 7 Accelerated Pre-Algebra  
 Designed by Nicole Hawes Gallo and Janet Griffith, August 2011  
**NUMBER SYSTEM -Template # 1 (NUMBER & OPERATIONS)**

*Applied Learning Standards: (SCANS)-Critical Thinking, Problem Solving, Research, Communication, Reflection and Evaluation; Principles of Learning; Disciplinary Literacy*

Common Core	GLEs	Instructional Strategies	Assessment Opportunities	Resources
<p><b>The Number System-Grade 7:</b>  <b>Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</b>                      1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.                      a. Describe situations in which opposite quantities combine to make 0. <i>For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</i>                      b. Understand <math>p + q</math> as the number located a distance <math> q </math> from <math>p</math>, in the positive or negative direction depending on whether <math>q</math> is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.                      c. Understand subtraction of rational numbers as adding the additive inverse, <math>p - q = p + (-q)</math>. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.                      d. Apply properties of operations as strategies to add and subtract rational numbers.</p>	<p><b>GLE: M (N&amp;O)–7–2 Demonstrates understanding of the relative magnitude of numbers</b> by ordering, comparing, or identifying equivalent rational numbers across number formats, numbers with whole number bases and whole number exponents (e.g., <math>3^3</math>, <math>4^3</math>), integers, absolute values, or <b>numbers represented in scientific notation</b> using number lines or equality and inequality symbols. (State) <b>**This is NOT addressed here (see Grade 8).</b></p> <p><b>GLE: M (N&amp;O)–7–3 Demonstrates conceptual understanding of operations with integers and whole number exponents</b> (where the base is a whole number) using models, diagrams, or explanations. (Local) <b>**This is NOT addressed here (see Grade 8).</b></p> <p><b>GLE:M (N&amp;O)–7–8 Applies properties of numbers (odd, even, remainders, divisibility, and prime factorization) and field properties</b> (commutative, associative, identity, distributive, inverses) <b>to solve problems and to simplify computations, and demonstrates conceptual understanding of field properties</b> as they apply to subsets of the real numbers (e.g., the set of whole numbers does not have additive inverses, the set of integers does not have multiplicative inverses). (Local) <b>**This is NOT addressed here (see Grade 8)</b> (IMPORTANT: <i>Applies the conventions of order of operations including parentheses, brackets, or exponents</i>)</p>	<p><u>Gradual Release of Responsibility:</u></p> <ul style="list-style-type: none"> <li>Describe the process standards and proficiencies important to reach mastery level</li> <li>Show an exemplar that models the framework of set tasks; revisit as needed (content &amp; process)</li> <li>Provide an understanding of key ideas/concepts; define what should be done (contextual framework)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Identify developmental skills</li> <li>Reinforcement of skills</li> <li>Drill and practice skills</li> </ul> <p><u>The Teacher Will:</u></p> <ul style="list-style-type: none"> <li>Model and show rational numbers that are opposite on a number line</li> <li>Connect the concept of absolute value to addition and subtraction of rational numbers</li> <li>Provide examples of rewriting subtraction problems as addition problems by adding the opposite</li> <li>Show that the absolute value of the difference of two rational numbers is the distance between them on a number line</li> <li>Provide examples showing properties of operations to add and subtract rational numbers</li> <li>Review properties of numbers to solve new problems</li> <li>Identify properties relating to specific operations when solving mathematical problems, simplifying computations, and comparing properties and number systems</li> <li>Show efficient techniques to solve field property problems, identity problems, and inverse properties</li> <li>Facilitate cooperative group work</li> <li>Use math language often and consistently</li> <li>Model questioning and inferencing</li> <li>Model and justify thinking</li> <li>Facilitate constructing written responses to defend mathematics</li> <li>Integrate content with other core subjects</li> <li>Use appropriate technology</li> <li>Model functions of the graphing and scientific calculators</li> <li>Model and/or facilitate common tasks</li> <li>Model and provide practice mental math</li> </ul>	<p><u>District Assessment</u></p> <ul style="list-style-type: none"> <li>Teacher Observations during Classroom Math Activities</li> <li>Formative &amp; Summative</li> <li>Tiered assignments</li> <li>Anecdotal records</li> <li>Exhibits</li> <li>Interviews</li> <li>Journals/notebooks</li> <li>Oral &amp; Visual presentations</li> <li>Portfolios (samples of process &amp; products)</li> <li>Performance/problem-based tasks</li> <li>Exemplars &amp; Rubrics</li> <li>Collaboration/Conferencing</li> <li>Common Local Assessments (quarterly)</li> <li>Common Tasks</li> </ul> <p><u>Performance Indicators:</u>                      The student will:</p> <ul style="list-style-type: none"> <li>Identify opposite quantities of rational numbers on a number line that combine to make 0, and apply in real-life situations.</li> <li>Explain the relationship of absolute value to the addition and subtraction of rational numbers, including additive inverses and apply to real-world contexts</li> <li>Construct equations to rewrite subtraction problems as addition problems by adding the opposite</li> <li>Show the distance between two rational numbers is the absolute value of their difference</li> <li>Apply the properties of operations to add and subtract rational numbers</li> <li>Practice and apply properties of numbers to solve problems, simplify computations, or compare and contrast the properties of numbers and number systems:                             <ul style="list-style-type: none"> <li>Field properties: Commutative; associative; identity; inverses</li> <li>Identity properties: Additive identity; multiplicative identity</li> <li>Inverse properties: Additive inverse; multiplicative inverse</li> </ul> </li> <li>Justify their thinking when approaching mathematics in general and support their thinking with evidence</li> <li>Question, analyze and solve real world problems from contexts outside of and within mathematics including those that cut across content strands or disciplines</li> <li>Construct written responses defending their work</li> <li>Demonstrate proficiency with common tasks: role playing (e.g., banker); chemistry experiment; 15% tip; 20% discount; area and volume</li> </ul>	<p><u>Programs &amp; Materials:</u></p> <ul style="list-style-type: none"> <li><i>Big Ideas Math Learning</i> by Larson Texts Inc.</li> <li><i>Impact Mathematics</i> Course 2 by Glencoe</li> <li>Scientific and graphing calculators</li> <li>Interactive TI-Connects graphing software</li> <li>Computer lab</li> <li>Calculators</li> <li>Smart Board</li> <li><i>Study Island/ALEKS</i> Interventions</li> <li>Rulers (metric), protractors</li> <li>Scissors, glue</li> <li>Four-quadrant multiplication grid</li> <li>Multiple Intelligences and Brain Dominance</li> <li>Differentiation</li> <li>Jigsaw, Anchoring, Think-Pair-Share, Cubing, etc.</li> <li>Questioning and making conjectures</li> <li><i>Classroom Instruction That Works</i> by Robert Marzano</li> <li><a href="http://www.glencoe.com">www.glencoe.com</a></li> <li><a href="http://www.bigideasmath.com">www.bigideasmath.com</a></li> <li><a href="http://www.ridoe.net">www.ridoe.net</a></li> <li><a href="http://www.ride.ri.gov/instruction/curriculum">www.ride.ri.gov/instruction/curriculum</a></li> <li>NECAP Release tasks</li> <li><a href="http://www.NECompact.org">www.NECompact.org</a></li> </ul> <p><u>Professional Resources (partial list):</u></p> <ul style="list-style-type: none"> <li><i>A Collection of Performance Tasks and Rubrics High School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><i>A Collection of Performance Tasks and Rubrics Middle School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><a href="http://www.exemplars.com/about/">http://www.exemplars.com/about/</a></li> <li><i>Improving Adolescent Literacy</i> by Fisher &amp; Frey</li> <li><i>MARS</i> Balanced Assessment series of common tasks</li> </ul>

Little Compton Mathematics Curriculum-Grade 7 Accelerated Pre-Algebra  
 Designed by Nicole Hawes Gallo and Janet Griffith, August 2011  
**NUMBER SYSTEM Template #2 (NUMBER & OPERATIONS)**

*Applied Learning Standards: (SCANS)-Critical Thinking, Problem Solving, Research, Communication, Reflection and Evaluation; Principles of Learning; Disciplinary Literacy*

Common Core	GLEs	Instructional Strategies	Assessment Opportunities	Resources
<p><b>The Number System-Grade 7:</b>  <b>Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</b></p> <p>2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as <math>(-1)(-1) = 1</math> and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p> <p>b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If <math>p</math> and <math>q</math> are integers, then <math>-(p/q) = (-p)/q = p/(-q)</math>. Interpret quotients of rational numbers by describing real world contexts.</p> <p>c. Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p> <p>3. Solve real-world and mathematical problems involving the four operations with rational numbers. **Computations with rational numbers extend the rules for manipulating fractions to complex fractions</p>	<p><b>GLE: M (N &amp; O)- 7-6</b> Uses a variety of mental computation strategies to solve problems (e.g., using compatible numbers, applying properties of operations, using mental imagery, using patterns) and to determine the reasonableness of answers; and mentally calculates benchmark perfect squares and related square roots (e.g., <math>1^2, 2^2, \dots, 12^2, 15^2, 20^2, 25^2, 100^2, 1000^2</math>); determines the part of a number using benchmark percents and related fractions (1%, 10%, 25%, 33⅓%, 50%, 66⅔%, 75%, and 100%) (e.g., 25% of 16; 33⅓% of 330). (Local) (IMPORTANT: <i>The intent of this GSE is to embed mental arithmetic throughout the instructional program, not to teach it as a separate unit.</i>)                  **This is NOT addressed here... (see Grade 8)</p>	<p><u>Gradual Release of Responsibility:</u></p> <ul style="list-style-type: none"> <li>Describe the process standards and proficiencies important to reach mastery level</li> <li>Show an exemplar that models the framework of set tasks; revisit as needed (content &amp; process)</li> <li>Provide an understanding of key ideas/concepts; define what should be done (contextual framework)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Identify developmental skills</li> <li>Reinforcement of skills</li> <li>Drill and practice skills</li> </ul> <hr/> <p><u>The Teacher Will:</u></p> <ul style="list-style-type: none"> <li>Review previous understandings of multiplying and dividing fractions</li> <li>Demonstrate the pattern of multiplication of two integers extended to signed rational numbers</li> <li>Show the concept of division by zero as undefined</li> <li>Use fact families to explain why the quotient of two integers results in a rational number</li> <li>Review and explain how to use long division to convert rational numbers to terminating and repeating decimals</li> <li>Provide opportunities to solve real-world and mathematical problems using the four operations with rational numbers and complex fractions</li> <li>Provide opportunities to show conversions of percents, fractions and decimals, using tables, grids, and technology</li> <li>Facilitate cooperative group work</li> <li>Use math language often and consistently</li> <li>Model questioning and inferencing</li> <li>Model and justify thinking</li> <li>Facilitate constructing written responses to defend mathematics</li> <li>Integrate content with other core subjects</li> <li>Use appropriate technology</li> <li>Model functions of the graphing and scientific calculators</li> <li>Model and/or facilitate common tasks</li> <li>Model and provide practice mental math thinking</li> </ul>	<p><u>District Assessment</u></p> <ul style="list-style-type: none"> <li>Teacher Observations during Classroom Math Activities</li> <li>Formative &amp; 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Materials:</u></p> <ul style="list-style-type: none"> <li><i>Big Ideas Math Learning</i> by Larson Texts Inc.</li> <li><i>Impact Mathematics</i> Course 2 by Glencoe</li> <li>Scientific and graphing calculators</li> <li>Interactive TI-Connects graphing software</li> <li>Computer lab</li> <li>Calculators</li> <li>Smart Board</li> <li><i>Study Island/ALEKS</i> Interventions</li> <li>Rulers (metric), protractors</li> <li>Scissors, glue</li> <li>Four-quadrant multiplication grid</li> <li>Multiple Intelligences and Brain Dominance</li> <li>Differentiation</li> <li>Jigsaw, Anchoring, Think-Pair-Share, Cubing, etc.</li> <li>Questioning and making conjectures</li> <li><i>Classroom Instruction That Works</i> by Robert Marzano</li> <li><a href="http://www.glencoe.com">www.glencoe.com</a></li> <li><a href="http://www.bigideasmath.com">www.bigideasmath.com</a></li> <li><a href="http://www.ridoe.net">www.ridoe.net</a></li> <li><a href="http://www.ride.ri.gov/instruction/curriculum">www.ride.ri.gov/instruction/curriculum</a></li> <li>NECAP Release tasks</li> <li><a href="http://www.NECompact.org">www.NECompact.org</a></li> </ul> <p><u>Professional Resources (partial list):</u></p> <ul style="list-style-type: none"> <li><i>A Collection of Performance Tasks and Rubrics High School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><i>A Collection of Performance Tasks and Rubrics Middle School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><a href="http://www.exemplars.com/about/">http://www.exemplars.com/about/</a></li> <li><i>Improving Adolescent Literacy</i> by Fisher &amp; 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**NUMBER SYSTEM -Template # 3 (NUMBER & OPERATIONS)**

*Applied Learning Standards: (SCANS)-Critical Thinking, Problem Solving, Research, Communication, Reflection and Evaluation; Principles of Learning; Disciplinary Literacy*

Common Core	GLEs	Instructional Strategies	Assessment Opportunities	Resources
<p><b>The Number System-Grade 8:</b>  <b>Know that there are numbers that are not rational, and approximate them by rational numbers.</b>  <b>8.NS.1.</b> Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.   <b>8.NS.2.</b> Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., <math>\pi^2</math>).  <i>For example, by truncating the decimal expansion of <math>\sqrt{2}</math>, show that <math>\sqrt{2}</math> is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</i></p>	<p><b>GLE: M (N &amp; O)-8-2 Demonstrates understanding of the relative magnitude of numbers</b> by ordering or comparing rational numbers, common irrational numbers (e.g., <math>\sqrt{2}</math>, <math>\pi</math>), numbers with whole number or fractional bases and whole number exponents, square roots, absolute values, integers, or numbers represented in scientific notation using number lines or equality and inequality symbols. (Local) <b>(Covered in 8<sup>th</sup> Grade)</b></p>	<p><u>Gradual Release of Responsibility:</u></p> <ul style="list-style-type: none"> <li>Describe the process standards and proficiencies important to reach mastery level</li> <li>Show an exemplar that models the framework of set tasks; revisit as needed (content &amp; process)</li> <li>Provide an understanding of key ideas/concepts; define what should be done (contextual framework)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Identify developmental skills</li> <li>Reinforcement of skills</li> <li>Drill and practice skills</li> </ul> <p><u>The Teacher Will:</u></p> <ul style="list-style-type: none"> <li>Identify, demonstrate and manipulate rational and irrational numbers, and absolute values to order and compare them using the number line</li> <li>Model and provide practice converting between decimal expansions and rational numbers</li> <li>Identify ways to order and compare integers using a variety of tools (e.g., Venn diagrams, number line, inequalities, decimal values)</li> <li>Facilitate cooperative group work</li> <li>Use math language often and consistently</li> <li>Model questioning and inferencing</li> <li>Model and justify thinking</li> <li>Facilitate constructing written responses to defend mathematics</li> <li>Integrate content with other core subjects</li> <li>Use appropriate technology</li> <li>Model functions of the graphing and scientific calculators</li> <li>Model and/or facilitate common tasks</li> <li>Model and provide practice mental math thinking</li> </ul>	<p><u>District Assessment</u></p> <ul style="list-style-type: none"> <li>Teacher Observations during Classroom Math Activities</li> <li>Formative &amp; 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chemistry experiment; 15% tip; 20% discount; area and volume</li> </ul>	<p><u>Programs &amp; Materials:</u></p> <ul style="list-style-type: none"> <li><i>Big Ideas Math Learning</i> by Larson Texts Inc.</li> <li><i>Impact Mathematics</i> Course 2 &amp; 3 by Glencoe</li> <li><i>Algebra I Concepts and Skills</i> by Holt McDougal</li> <li>Scientific and graphing calculators</li> <li>Interactive TI-Connects graphing software</li> <li>Computer lab</li> <li>Calculators</li> <li>Smart Board</li> <li><i>Study Island/ALEKS</i> Interventions</li> <li>Rulers (metric), protractors</li> <li>Scissors, glue</li> <li>Four-quadrant multiplication grid</li> <li>Multiple Intelligences and Brain Dominance</li> <li>Differentiation</li> <li>Jigsaw, Anchoring, Think-Pair-Share, Cubing, etc.</li> <li>Questioning and making conjectures</li> <li><i>Classroom Instruction That Works</i> by Robert Marzano</li> <li><a href="http://www.glencoe.com">www.glencoe.com</a></li> <li><a href="http://www.bigideasmath.com">www.bigideasmath.com</a></li> <li><a href="http://www.ridoe.net">www.ridoe.net</a></li> <li><a href="http://www.ridoe.net/instruction/curriculum">www.ridoe.net/instruction/curriculum</a></li> <li>NECAP Release tasks</li> <li><a href="http://www.NECompact.org">www.NECompact.org</a></li> </ul> <p><u>Professional Resources (partial list):</u></p> <ul style="list-style-type: none"> <li><i>A Collection of Performance Tasks and Rubrics High School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><i>A Collection of Performance Tasks and Rubrics Middle School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><a href="http://www.exemplars.com/about/">http://www.exemplars.com/about/</a></li> <li><i>Improving Adolescent Literacy</i> by Fisher &amp; 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**EXPRESSIONS & EQUATIONS #1 (FUNCTIONS & ALGEBRA)**

**Applied Learning Standards: (SCANS)–Critical Thinking, Problem Solving, Research, Communication, Reflection and Evaluation; Principles of Learning; Disciplinary Literacy**

Common Core	GLEs	Instructional Strategies	Assessment Opportunities	Resources
<p><b>Expressions &amp; Equations-Gr 7:</b>  <b>Use properties of operations to generate equivalent expressions.</b>                      1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.                      2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. <i>For example, <math>a + 0.05a = 1.05a</math> means that “increase by 5%” is the same as “multiply by 1.05.”</i>  <b>Solve real-life and mathematical problems using numerical and algebraic expressions and equations.</b>                      3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. <i>For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional <math>\frac{1}{10}</math> of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar <math>9\frac{3}{4}</math> inches long in the center of a door that is <math>27\frac{1}{2}</math> inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</i>                      4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.                      a. Solve word problems leading to equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. <i>For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</i>                      b. Solve word problems leading to inequalities of the form <math>px + q &gt; r</math> or <math>px + q &lt; r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. <i>For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</i></p>	<p><b>GLE: M (F &amp; A)-7-1 Identifies and extends to specific cases a variety of patterns</b> (linear and nonlinear) represented in models, tables, sequences, graphs, or in problem situations; <b>and generalizes a linear relationship using words and symbols; generalizes a linear relationship to find a specific case; or writes an expression or (sc) equation using words or (sc) symbols to express the generalization of a nonlinear relationship.</b> (State)</p> <p><b>GLE: M(F&amp;A)-7-2 Demonstrates conceptual understanding of linear relationships</b> (<math>y = kx</math>; <math>y = mx + b</math>) <b>as a constant rate of change by solving problems involving the relationship between slope and rate of change, by describing the meaning of slope in concrete situations, or informally determining the slope of a line from a table or graph, and distinguishes between constant and varying rates of change in concrete situations represented in tables or graphs; or describe how change in the value of one variable relates to change in the value of a second variable</b> in problem situations with constant rates of change. (State) **This is NOT addressed here...(see Grade 8).  <b>***This is addressed above, under Ratio and Proportional Relationships in Grade 7.</b></p> <p><b>GLE: M(F&amp;A)-7-3 Demonstrates conceptual understanding of algebraic expressions</b> by using letters to represent unknown quantities to write algebraic expressions (including those with whole number exponents or more than one variable); or by evaluating algebraic expressions (including those with whole number exponents or more than one variable); or by evaluating an expression within an equation (e.g., determine the value of <math>y</math> when <math>x = 4</math> given <math>y = 5x^2 - 2</math>). (State) **This is NOT addressed here...(see Grade 8).</p> <p><b>GLE: M(F&amp;A)-7-4 Demonstrates conceptual understanding of equality</b> by showing equivalence between two expressions (expressions consistent with the parameters of the left- and right-hand sides of the equations being solved at this grade level) using models or different representations of the expressions, solving multi-step linear equations of the form <math>ax \pm b = c</math> with <math>a \neq 0</math>, <math>ax \pm b = cx \pm d</math> with <math>a, c \neq 0</math>, and <math>(x/a) \pm b = c</math> with <math>a \neq 0</math>, where <math>a, b, c</math> and <math>d</math> are whole numbers; or by translating a problem-solving situation into an equation consistent with the parameters of the type of equations being solved for this grade level. (State)</p>	<p><u>Gradual Release of Responsibility:</u></p> <ul style="list-style-type: none"> <li>Describe the process standards and proficiencies important to reach mastery level</li> <li>Show an exemplar that models the framework of set tasks; revisit as needed (content &amp; process)</li> <li>Provide an understanding of key ideas/concepts; define what should be done (contextual framework)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Identify developmental skills</li> <li>Reinforcement of skills</li> <li>Drill and practice skills</li> </ul> <p><u>The Teacher Will:</u></p> <ul style="list-style-type: none"> <li>Formulate a series of rules for simplifying and evaluating numerical and algebraic expressions</li> <li>Model and provide practice how to translate problem situations into algebraic expressions with rational coefficients</li> <li>Use tables and graphs to show the relationship between linear and non-linear equations, and in word problems</li> <li>Demonstrate multiple representations of linear and non-linear relationships and how to solve those equations</li> <li>Facilitate scenarios when students analyze the reasonableness of their answers using mental math and estimation skills</li> <li>Identify properties relating to specific operations when solving mathematical problems</li> <li>Model solving equations and inequalities in the form <math>px + q = r</math>; <math>p(x + q) = r</math>; <math>px + q &gt; r</math>; or <math>px + q &lt; r</math> where <math>p, q</math>, and <math>r</math> are rational numbers</li> <li>Model and provide practice graphing solutions of inequalities on a number line</li> <li>Facilitate the use of technology to solve mathematical problems</li> <li>Integrate mathematics with science concepts, e.g., astronomy, microbiology</li> <li>Facilitate cooperative group work</li> <li>Use math language often and consistently</li> <li>Model questioning and inferencing</li> <li>Model and justify thinking</li> <li>Facilitate constructing written responses to defend mathematics</li> <li>Integrate content with other core subjects</li> <li>Use appropriate technology</li> <li>Model functions of the graphing and scientific calculators</li> <li>Model and/or facilitate common tasks</li> <li>Model and provide practice mental math thinking</li> </ul>	<p><u>District Assessment</u></p> <ul style="list-style-type: none"> <li>Teacher Observations during Classroom Math Activities</li> <li>Formative &amp; Summative</li> <li>Tiered assignments</li> <li>Anecdotal records</li> <li>Exhibits</li> <li>Interviews</li> <li>Journals/notebooks</li> <li>Oral &amp; Visual presentations</li> <li>Portfolios (samples of process &amp; products)</li> <li>Performance/problem-based tasks</li> <li>Exemplars &amp; Rubrics</li> <li>Collaboration/Conferencing</li> <li>Common Local Assessments (quarterly, mid-term, final term)</li> <li>Common Tasks</li> </ul> <p><u>Performance Indicators:</u>      The student will:</p> <ul style="list-style-type: none"> <li>Demonstrate conceptual understanding of numerical and algebraic expressions and equations by simplifying linear and non-linear expressions with rational coefficients</li> <li>Evaluate expressions by rewriting them in different forms</li> <li>Translate problem situations into algebraic expressions using whole numbers, fractions, and decimals as coefficients of variables</li> <li>Apply linear and non-linear equations using words or symbols to represent and solve multi-step and real-life problems</li> <li>Assess the reasonableness of answers using mental math and estimation</li> <li>Solve multi-step linear and non-linear equations</li> <li>Use variables to represent quantities in a real-world or mathematical problem</li> <li>Construct simple equations and inequalities to solve problems by reasoning about the quantities</li> <li>Understand, use, and applies appropriate technology and software programs to solve problems</li> <li>Justify their thinking when approaching mathematics in general and support their thinking with evidence</li> <li>Question, analyze and solve real world problems from contexts outside of and within mathematics including those that cut across content strands or disciplines</li> <li>Construct written responses defending their work</li> <li>Demonstrate proficiency with common tasks</li> </ul>	<p><u>Programs &amp; Materials:</u></p> <ul style="list-style-type: none"> <li><i>Big Ideas Math Learning</i> by Larson Texts Inc.</li> <li><i>Impact Mathematics</i> Course 2 by Glencoe</li> <li>Scientific and graphing calculators</li> <li>Interactive TI-Connects graphing software</li> <li>Computer lab</li> <li>Calculators</li> <li>Smart Board</li> <li><i>Study Island/ALEKS</i> Interventions</li> <li>Rulers (metric), protractors</li> <li>Scissors, glue</li> <li>Four-quadrant multiplication grid</li> <li>Multiple Intelligences and Brain Dominance</li> <li>Differentiation</li> <li>Jigsaw, Anchoring, Think-Pair-Share, Cubing, etc.</li> <li>Questioning and making conjectures</li> <li><i>Classroom Instruction That Works</i> by Robert Marzano</li> <li>Magazines: <i>Scope</i>; <i>Junior Scholastic</i>; <i>National Geographic</i>; <i>Science World</i></li> <li><a href="http://www.glencoe.com">www.glencoe.com</a></li> <li><a href="http://www.bigideasmath.com">www.bigideasmath.com</a></li> <li><a href="http://www.ri.oe.edu">www.ri.oe.edu</a></li> <li><a href="http://www.ride.ri.gov/instruction/curriculum">www.ride.ri.gov/instruction/curriculum</a></li> <li>NECAP Release tasks</li> <li><a href="http://www.NECompact.org">www.NECompact.org</a></li> </ul> <p><u>Professional Resources (partial list):</u></p> <ul style="list-style-type: none"> <li><i>A Collection of Performance Tasks and Rubrics High School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><i>A Collection of Performance Tasks and Rubrics Middle School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><a href="http://www.exemplars.com/about/">http://www.exemplars.com/about/</a></li> <li><i>Improving Adolescent Literacy</i> by Fisher &amp; Frey</li> <li><i>MARS</i> Balanced Assessment series of common tasks</li> </ul>

**EXPRESSIONS & EQUATIONS #2 (FUNCTIONS & ALGEBRA)**

Little Compton Mathematics Curriculum-Grade 7 Accelerated Pre-Algebra

Designed by Nicole Hawes Gallo and Janet Griffith, August 2011

*Applied Learning Standards: (SCANS)-Critical Thinking, Problem Solving, Research, Communication, Reflection and Evaluation; Principles of Learning; Disciplinary Literacy*

Common Core	GLEs	Instructional Strategies	Assessment Opportunities	Resources
<p><b>Expressions &amp; Equations- Gr 8:</b></p> <p>Analyze and solve linear equations and pairs of simultaneous linear equations:</p> <p>8.EE.7. Solve linear equations in one variable.</p>	<p><b>GLE: M (F &amp; A)-8-4</b></p> <p><b>Demonstrates conceptual understanding for equality</b> by showing equivalence between two expressions (<u>expressions consistent with the parameters of the left-and right-hand sides of the equations being solved at this grade level</u>) using models or different representations of the expressions, <u>solving formulas for a variable requiring one transformation (e.g., <math>d = rt</math>; <math>d/r = t</math>)</u>; by <u>solving multi-step linear equations with integer coefficients</u>; by <u>showing that two expressions are or are not equivalent by applying commutative, associative, or distributive properties, order of operations, or substitution; and by informally solving problems involving systems of linear equations in a context. (Local) (Covered in 8<sup>th</sup> Grade)</u></p>	<p><u>Gradual Release of Responsibility:</u></p> <ul style="list-style-type: none"> <li>Describe the process standards and proficiencies important to reach mastery level</li> <li>Show an exemplar that models the framework of set tasks; revisit as needed (content &amp; process)</li> <li>Provide an understanding of key ideas/concepts; define what should be done (contextual framework)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Identify developmental skills</li> <li>Reinforcement of skills</li> <li>Drill and practice skills</li> </ul> <p><u>The Teacher Will:</u></p> <ul style="list-style-type: none"> <li>Formulate real-world and other math problems that result in a system of equations that can be solved graphically, algebraically, or by substitution</li> <li>Facilitate cooperative group work</li> <li>Use math language often and consistently</li> <li>Model questioning and inferencing</li> <li>Model and justify thinking</li> <li>Facilitate constructing written responses to defend mathematics</li> <li>Integrate content with other core subjects</li> <li>Use appropriate technology</li> <li>Model functions of the graphing and scientific calculators</li> <li>Model and/or facilitate common tasks</li> <li>Model and provide practice mental math thinking</li> <li>Identify properties relating to specific operations when solving mathematical problems</li> </ul>	<p><u>District Assessment</u></p> <ul style="list-style-type: none"> <li>Teacher Observations during Classroom Math Activities</li> <li>Formative &amp; Summative</li> <li>Tiered assignments</li> <li>Anecdotal records</li> <li>Exhibits</li> <li>Interviews</li> <li>Journals</li> <li>Oral &amp; Visual presentations</li> <li>Portfolios (samples of process &amp; products)</li> <li>Performance/problem-based tasks</li> <li>Exemplars &amp; Rubrics</li> <li>Collaboration/Conferencing</li> <li>Common Local Assessments (quarterly, mid-term, final term)</li> <li>Common Tasks</li> </ul> <p><u>Performance Indicators:</u></p> <p>The student will:</p> <ul style="list-style-type: none"> <li>Solve one-step and <b>multi-step</b> linear equations with rational number coefficients, applying the distributive property and collecting (combining) like terms (<b>Covered in Grade 8</b>)</li> <li>Justify their thinking when approaching mathematics in general and support their thinking with evidence</li> <li>Question, analyze and solve real world problems from contexts outside of and within mathematics including those that cut across content strands or disciplines</li> <li>Construct written responses defending their work</li> <li>Demonstrate proficiency with common tasks</li> </ul>	<p><u>Programs &amp; Materials:</u></p> <ul style="list-style-type: none"> <li><i>Big Ideas Math Learning</i> by Larson Texts Inc.</li> <li><i>Impact Mathematics</i> Course 2 &amp; 3 by Glencoe</li> <li><i>Algebra I Concepts and Skills</i> by Holt McDougal</li> <li>Scientific and graphing calculators</li> <li>Interactive TI-Connects graphing software</li> <li>Computer lab</li> <li>Calculators</li> <li>Smart Board</li> <li><i>Study Island/ALEKS</i> Interventions</li> <li>Rulers (metric), protractors</li> <li>Scissors, glue</li> <li>Four-quadrant multiplication grid</li> <li>Multiple Intelligences and Brain Dominance</li> <li>Differentiation</li> <li>Jigsaw, Anchoring, Think-Pair-Share, Cubing, etc.</li> <li>Questioning and making conjectures</li> <li><i>Classroom Instruction That Works</i> by Robert Marzano</li> <li>Magazines: <i>Scope</i>; <i>Junior Scholastic</i>; <i>National Geographic</i>; <i>Science World</i></li> <li><a href="http://www.glencoe.com">www.glencoe.com</a></li> <li><a href="http://www.bigideasmath.com">www.bigideasmath.com</a></li> <li><a href="http://www.ridoe.net">www.ridoe.net</a></li> <li><a href="http://www.ridoe.net/instruction/curriculum">www.ridoe.net/instruction/curriculum</a></li> <li>NECAP Release tasks</li> <li><a href="http://www.NECompact.org">www.NECompact.org</a></li> </ul> <p><u>Professional Resources (partial list):</u></p> <ul style="list-style-type: none"> <li><i>A Collection of Performance Tasks and Rubrics High School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><i>A Collection of Performance Tasks and Rubrics Middle School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><a href="http://www.exemplars.com/about/">http://www.exemplars.com/about/</a></li> <li><i>Improving Adolescent Literacy</i> by Fisher &amp; Frey</li> <li><i>MARS</i> Balanced Assessment series of common tasks</li> </ul>

Little Compton Mathematics Curriculum-Grade 7 Accelerated Pre-Algebra  
Designed by Nicole Hawes Gallo and Janet Griffith, August 2011

**Applied Learning Standards: (SCANS)-Critical Thinking, Problem Solving, Research, Communication, Reflection and Evaluation; Principles of Learning; Disciplinary Literacy**

Common Core	GLEs	Instructional Strategies	Assessment Opportunities	Resources
<p><b>Geometry-Grade 7:</b> <b>Draw, construct, and describe geometrical figures and describe the relationships between them.</b></p> <p>1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p> <p>2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> <p>3. Describe the two-dimensional figures that result from slicing three dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.</p> <p>4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.</p> <p>5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p> <p>6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p>	<p><b>GLE: M (G&amp;M)–7–1 Uses properties of angle relationships</b> resulting from two or three intersecting lines (<u>adjacent angles, vertical angles, straight angles, or angle relationships formed by two non-parallel lines cut by a transversal</u>), or two parallel lines cut by a transversal to solve problems. (State)</p> <p><b>GLE: M (G&amp;M)–7–2 Applies theorems or relationships</b> (triangle inequality or sum of the measures of interior angles of regular polygons) to solve problems. (State)</p> <p><b>GLE: M (G&amp;M)–7–4 Applies the concepts of congruency by solving problems on a coordinate plane involving reflections, translations, or rotations.</b> (State)</p> <p><b>GLE: M(G&amp;M)–7–5 Applies concepts of similarity by solving problems</b> involving scaling up or down and their impact on angle measures, linear dimensions and areas of polygons, and circles when the linear dimensions are multiplied by a constant factor. Describe effects using models or (sc) explanations. (State)</p> <p><b>GLE: M (G&amp;M)–7–6 Demonstrates conceptual understanding of the area of circles or the area or perimeter of composite figures (quadrilaterals, triangles, or parts of circles), and the surface area of rectangular prisms, or volume of rectangular prisms, triangular prisms, or cylinders using models, formulas, or by solving related problems.</b> Expresses all measures using appropriate units. (State)</p> <p><b>GLE: M (G&amp;M)-7-10 Demonstrates conceptual understanding of spatial reasoning and visualization by sketching three dimensional solids; and draws nets of rectangular and triangular prisms, cylinders, and pyramids and uses the nets as a technique for finding surface area.</b> (Local)</p>	<p><u>Gradual Release of Responsibility:</u></p> <ul style="list-style-type: none"> <li>Describe the process standards and proficiencies important to reach mastery level</li> <li>Show an exemplar that models the framework of set tasks; revisit as needed (content &amp; process)</li> <li>Provide an understanding of key ideas/concepts; define what should be done (contextual framework)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Identify developmental skills</li> <li>Reinforcement of skills</li> <li>Drill and practice skills</li> </ul> <hr/> <p><u>The Teacher Will:</u></p> <ul style="list-style-type: none"> <li>Facilitate the scaling of a two-dimensional shape for students to explore the impact on lengths, perimeters, and areas</li> <li>Facilitate the construction of similar figures using a variety of tools</li> <li>Provide examples of the proof that the sum of interior angles of triangles always equal <math>180^\circ</math> and apply the proof to the similarity of two triangles when two angles are congruent</li> <li>Demonstrate when a triangle can be produced given the lengths of three sides of a possible triangle</li> <li>Facilitate discourse by modeling cross-sections of three-dimensional solids that result in different two-dimensional shapes</li> <li>Model drawing three-dimensional solids and provide opportunities to construct and explore nets for a variety of three-dimensional solids to help calculate surface area and understand the components of the three-dimensional shapes</li> <li>Model, and provide practice applying the formulas of a circle and the relationship among the measurements of a circle</li> <li>Facilitate exploring measurements of interior and exterior angles of polygons</li> <li>Provide examples of vertical, alternate interior, alternate exterior, adjacent, complementary, and supplementary angles</li> <li>Review and extend concepts of perimeter, area, surface area, and volume of two- and three-dimensional figures</li> <li>Model drawing shapes that exhibit rotation, reflection, and translation of two-dimensional shapes showing congruency that have undergone one or more transformations</li> <li>Facilitate cooperative group work</li> <li>Use math language often and consistently</li> <li>Model questioning and inferencing</li> <li>Model and justify thinking</li> <li>Facilitate constructing written responses to defend mathematics</li> <li>Integrate content with other core subjects</li> <li>Use appropriate technology</li> <li>Model functions of the graphing and scientific calculators</li> <li>Model and/or facilitate common tasks</li> <li>Model and provide practice mental math thinking</li> <li>Identify properties relating to specific operations when solving mathematical problems</li> </ul>	<p><u>District Assessment</u></p> <ul style="list-style-type: none"> <li>Teacher Observations during Classroom Math Activities</li> <li>Formative &amp; Summative</li> <li>Tiered assignments</li> <li>Anecdotal records</li> <li>Exhibits</li> <li>Interviews</li> <li>Journals/notebooks</li> <li>Oral &amp; Visual presentations</li> <li>Portfolios (samples of process &amp; products)</li> <li>Performance/problem-based tasks</li> <li>Exemplars &amp; Rubrics</li> <li>Collaboration/Conferencing</li> <li>Common Local Assessments (quarterly, mid-term, final term)</li> <li>Common Tasks</li> </ul> <p><u>Performance Indicators:</u> The student will:</p> <ul style="list-style-type: none"> <li>Explore the effect of scaling up and down on the lengths, perimeters and areas of polygons and circles</li> <li>Draw similar figures that are reproduced at different scales using appropriate tools (software program, protractor, compass) and freehand</li> <li>Draw triangles using given information to determine whether it produces a unique triangle, more than one triangle, or no triangle</li> <li>Describe the two-dimensional shape that results from taking a cross-section of a three-dimensional figure</li> <li>Sketch three dimensional solids and draw nets of a variety of three dimensional objects to conceptually understand their components and to assist in finding the surface area</li> <li>Apply the formulas of the area and circumference of a circle to solve problems</li> <li>Explain the relationships between the circumference, radius, diameter, and <math>\pi</math> with circles</li> <li>Compare and contrast circumference and area in circle problems</li> <li>Explore patterns in the sums of interior and exterior angles of polygons</li> <li>Analyze and defend the relationship between the angles that are formed when two parallel or non-parallel lines are intersected by a transversal</li> <li>Solve problems involving: <ul style="list-style-type: none"> <li>Perimeter and area of two-dimensional figures</li> <li>Surface area or volume of three-dimensional figures within mathematics or across disciplines or contexts</li> </ul> </li> <li>Classify that two polygons are congruent when they are translated, reflected, or rotated</li> <li>Use appropriate geometric models when solving problems</li> <li>Understand, use, apply appropriate technology to solve problems</li> <li>Justify their thinking when approaching mathematics in general and support their thinking with evidence</li> <li>Question, analyze and solve real world problems from contexts outside of and within mathematics including those that cut across content strands or disciplines</li> <li>Construct written responses defending their work</li> </ul>	<p><u>Programs &amp; Materials:</u></p> <ul style="list-style-type: none"> <li><i>Big Ideas Math Learning</i> by Larson Texts Inc.</li> <li><i>Impact Mathematics</i> Course 2 by Glencoe</li> <li>Scientific and graphing calculators</li> <li>Interactive TI-Connects graphing software</li> <li>Computer lab</li> <li>Calculators</li> <li>Smart Board</li> <li><i>Study Island/ALEKS</i> Interventions</li> <li>Rulers (metric), protractors</li> <li>Scissors, glue</li> <li>Geometric manipulatives</li> <li>Algebra lab gear</li> <li>Four-quadrant multiplication grid</li> <li>Geyer Scientific and Math products</li> <li>Multiple Intelligences and Brain Dominance</li> <li>Differentiation</li> <li>Jigsaw, Anchoring, Think-Pair-Share, Cubing, etc.</li> <li>Questioning and making conjectures</li> <li><i>Classroom Instruction That Works</i> by Robert Marzano</li> <li><a href="http://www.glencoe.com">www.glencoe.com</a></li> <li><a href="http://www.bigideasmath.com">www.bigideasmath.com</a></li> <li><a href="http://www.ridoe.net">www.ridoe.net</a></li> <li><a href="http://www.ridoe.net/instruction/curriculum">www.ridoe.net/instruction/curriculum</a></li> <li>NECAP Release tasks</li> <li><a href="http://www.NECompact.org">www.NECompact.org</a></li> </ul> <p><u>Professional Resources (partial list):</u></p> <ul style="list-style-type: none"> <li><i>A Collection of Performance Tasks and Rubrics High School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><i>A Collection of Performance Tasks and Rubrics Middle School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><a href="http://www.exemplars.com/about/">http://www.exemplars.com/about/</a></li> <li><i>Improving Adolescent Literacy</i> by Fisher &amp; 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**GEOMETRY #2 (GEOMETRY & MEASUREMENT)**

Little Compton Mathematics Curriculum-Grade 7 Accelerated Pre-Algebra

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<p><b>Geometry-Grade 8:</b> Understand congruence and similarity using physical models, transparencies, or geometry software.</p> <p><b>8.G.1.</b> Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.</p> <p><b>8.G.2.</b> Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.</p> <p><b>8.G.3.</b> Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.</p>	<p><b>GLE: M (G &amp; M)-8-5</b> <b>Applies concepts of similarity to determine the impact of scaling on the volume or surface area of three-dimensional figures when linear dimensions are multiplied by a constant factor; to determine the length of sides of similar triangles, or to solve problems involving growth and rate. (Local) (Covered here)</b> **This shaded gray area is NOT addressed here –see Grade 8</p>	<p><u>Gradual Release of Responsibility:</u></p> <ul style="list-style-type: none"> <li>Describe the process standards and proficiencies important to reach mastery level</li> <li>Show an exemplar that models the framework of set tasks; revisit as needed (content &amp; process)</li> <li>Provide an understanding of key ideas/concepts; define what should be done (contextual framework)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Identify developmental skills</li> <li>Reinforcement of skills</li> <li>Drill and practice skills</li> </ul> <p><u>The Teacher Will:</u></p> <ul style="list-style-type: none"> <li>Model drawing shapes that exhibit rotation, reflection, and translation of two-dimensional shapes showing congruency that have undergone one or more transformations</li> <li>Model, provide practice, and justify the result of graphing two-dimensional figures on a coordinate grid that have undergone rotations, translations, dilations, reflections</li> <li>Facilitate cooperative group work</li> <li>Use math language often and consistently</li> <li>Model questioning and inferring</li> <li>Model and justify thinking</li> <li>Facilitate constructing written responses to defend mathematics</li> <li>Integrate content with other core subjects</li> <li>Use appropriate technology</li> <li>Model functions of the graphing and scientific calculators</li> <li>Model and/or facilitate common tasks</li> <li>Model and provide practice mental math thinking</li> <li>Identify properties relating to specific operations when solving mathematical problems</li> </ul>	<p><u>District Assessment</u></p> <ul style="list-style-type: none"> <li>Teacher Observations during Classroom Math Activities</li> <li>Formative &amp; Summative</li> <li>Tiered assignments</li> <li>Anecdotal records</li> <li>Exhibits</li> <li>Interviews</li> <li>Journals/notebooks</li> <li>Oral &amp; Visual presentations</li> <li>Portfolios (samples of process &amp; products)</li> <li>Performance/problem-based tasks</li> <li>Exemplars &amp; Rubrics</li> <li>Collaboration/Conferencing</li> <li>Common Local Assessments (quarterly, mid-term, final term)</li> <li>Common Tasks</li> </ul> <p><u>Performance Indicators:</u> The student will:</p> <ul style="list-style-type: none"> <li>Construct congruent figures with appropriate tools (software program, protractor, compass)</li> <li>Draw rotations, reflections and translations of two-dimensional shapes that are congruent to the original shape</li> <li>Determine whether congruent shapes have been rotated, reflected or translated</li> <li>Identify and describe the sequence of steps that would result from congruent figures undergoing two or more of the transformations</li> <li>Justify their thinking when approaching mathematics in general and support their thinking with evidence</li> <li>Question, analyze and solve real world problems from contexts outside of and within mathematics including those that cut across content strands or disciplines</li> <li>Construct written responses defending their work</li> </ul>	<p><u>Programs &amp; Materials:</u></p> <ul style="list-style-type: none"> <li><i>Big Ideas Math Learning</i> by Larson Texts Inc.</li> <li><i>Impact Mathematics</i> Course 2 &amp; 3 by Glencoe</li> <li><i>Algebra I Concepts and Skills</i> by Holt McDougal</li> <li>Scientific and graphing calculators</li> <li>Interactive TI-Connects graphing software</li> <li>Computer lab</li> <li>Calculators</li> <li>Smart Board</li> <li><i>Study Island/ALEKS</i> Interventions</li> <li>Rulers (metric), protractors</li> <li>Scissors, glue</li> <li>Geometric manipulatives</li> <li>Algebra lab gear</li> <li>Four-quadrant multiplication grid</li> <li>Geyer Scientific and Math products</li> <li>Multiple Intelligences and Brain Dominance</li> <li>Differentiation</li> <li>Jigsaw, Anchoring, Think-Pair-Share, Cubing, etc.</li> <li>Questioning and making conjectures</li> <li><i>Classroom Instruction That Works</i> by Robert Marzano</li> <li><a href="http://www.glencoe.com">www.glencoe.com</a></li> <li><a href="http://www.bigideasmath.com">www.bigideasmath.com</a></li> <li><a href="http://www.ride.net">www.ride.net</a></li> <li><a href="http://www.ride.ri.gov/instruction/curriculum">www.ride.ri.gov/instruction/curriculum</a></li> <li>NECAP Release tasks</li> <li><a href="http://www.NECompact.org">www.NECompact.org</a></li> </ul> <p><u>Professional Resources (partial list):</u></p> <ul style="list-style-type: none"> <li><i>A Collection of Performance Tasks and Rubrics High School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><i>A Collection of Performance Tasks and Rubrics Middle School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><a href="http://www.exemplars.com/about/">http://www.exemplars.com/about/</a></li> <li><i>Improving Adolescent Literacy</i> by Fisher &amp; Frey</li> <li>MARS Balanced Assessment series of common tasks</li> </ul>

**GEOMETRY #3 (GEOMETRY & MEASUREMENT)**

Little Compton Mathematics Curriculum-Grade 7 Accelerated Pre-Algebra  
Designed by Nicole Hawes Gallo and Janet Griffith, August 2011

*Applied Learning Standards: (SCANS)-Critical Thinking, Problem Solving, Research, Communication, Reflection and Evaluation; Principles of Learning; Disciplinary Literacy*

Common Core	GLEs	Instructional Strategies	Assessment Opportunities	Resources
<p><b>Geometry-Grade 8:</b></p> <p><b>Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.</b></p> <p><b>8.G.9.</b> Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.</p>	<p><b>GLE: M (G &amp; M)-8-6</b></p> <p><b>Demonstrates conceptual understanding of surface area or volume by solving problems involving surface area and volume of rectangular prisms, triangular prisms, cylinders, pyramids, or cones.</b></p> <p>Expresses all measures using appropriate units. (Local).</p>	<p><u>Gradual Release of Responsibility:</u></p> <ul style="list-style-type: none"> <li>Describe the process standards and proficiencies important to reach mastery level</li> <li>Show an exemplar that models the framework of set tasks; revisit as needed (content &amp; process)</li> <li>Provide an understanding of key ideas/concepts; define what should be done (contextual framework)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Identify developmental skills</li> <li>Reinforcement of skills</li> <li>Drill and practice skills</li> </ul> <p><u>The Teacher Will:</u></p> <ul style="list-style-type: none"> <li>Model and provide practice using the formulas for the volumes of cones, cylinders and spheres</li> <li>Facilitate cooperative group work</li> <li>Use math language often and consistently</li> <li>Model questioning and inferring</li> <li>Model and justify thinking</li> <li>Facilitate constructing written responses to defend mathematics</li> <li>Integrate content with other core subjects</li> <li>Use appropriate technology</li> <li>Model functions of the graphing and scientific calculators</li> <li>Model and/or facilitate common tasks</li> <li>Model and provide practice mental math thinking</li> <li>Identify properties relating to specific operations when solving mathematical problems</li> </ul>	<p><u>District Assessment</u></p> <ul style="list-style-type: none"> <li>Teacher Observations during Classroom Math Activities</li> <li>Formative &amp; Summative</li> <li>Tiered assignments</li> <li>Anecdotal records</li> <li>Exhibits</li> <li>Interviews</li> <li>Journals/notebooks</li> <li>Oral &amp; Visual presentations</li> <li>Portfolios (samples of process &amp; products)</li> <li>Performance/problem-based tasks</li> <li>Exemplars &amp; Rubrics</li> <li>Collaboration/Conferencing</li> <li>Common Local Assessments (quarterly, mid-term, final term)</li> <li>Common Tasks</li> </ul> <p><u>Performance Indicators:</u></p> <p>The student will:</p> <ul style="list-style-type: none"> <li>Know and use the formulas for the volumes of cones, cylinders and spheres</li> <li>Justify their thinking when approaching mathematics in general and support their thinking with evidence</li> <li>Question, analyze and solve real world problems from contexts outside of and within mathematics including those that cut across content strands or disciplines</li> <li>Construct written responses defending their work</li> <li>Demonstrate proficiency with common tasks</li> </ul>	<p><u>Programs &amp; Materials:</u></p> <ul style="list-style-type: none"> <li><i>Big Ideas Math Learning</i> by Larson Texts Inc.</li> <li><i>Impact Mathematics</i> Course 2 &amp; 3 by Glencoe</li> <li><i>Algebra I Concepts and Skills</i> by Holt McDougal</li> <li>Scientific and graphing calculators</li> <li>Interactive TI-Connects graphing software</li> <li>Computer lab</li> <li>Calculators</li> <li>Smart Board</li> <li><i>Study Island/ALEKS</i> Interventions</li> <li>Rulers (metric), protractors</li> <li>Scissors, glue</li> <li>Geometric manipulatives</li> <li>Algebra lab gear</li> <li>Four-quadrant multiplication grid</li> <li>Geyer Scientific and Math products</li> <li>Multiple Intelligences and Brain Dominance</li> <li>Differentiation</li> <li>Jigsaw, Anchoring, Think-Pair-Share, Cubing, etc.</li> <li>Questioning and making conjectures</li> <li><i>Classroom Instruction That Works</i> by Robert Marzano</li> <li><a href="http://www.glencoe.com">www.glencoe.com</a></li> <li><a href="http://www.bigideasmath.com">www.bigideasmath.com</a></li> <li><a href="http://www.ridoe.net">www.ridoe.net</a></li> <li><a href="http://www.ridoe.net/instruction/curriculum">www.ridoe.net/instruction/curriculum</a></li> <li>NECAP Release tasks</li> <li><a href="http://www.NECompact.org">www.NECompact.org</a></li> </ul> <p><u>Professional Resources (partial list):</u></p> <ul style="list-style-type: none"> <li><i>A Collection of Performance Tasks and Rubrics High School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><i>A Collection of Performance Tasks and Rubrics Middle School Mathematics</i> by Charlotte Danielson, ASCD</li> <li><a href="http://www.exemplars.com/about/">http://www.exemplars.com/about/</a></li> <li><i>Improving Adolescent Literacy</i> by Fisher &amp; Frey</li> <li>MARS Balanced Assessment series of common tasks</li> </ul>