

**LITCHFIELD PUBLIC SCHOOLS**  
**Core Curriculum**  
**Scope and Sequence**  
**Integrated II**

**Essential Questions**

**How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?**

**How are quantitative relationships represented by numbers?**

**How do geometric relationships and measurements help us to solve problems and make sense of our world?**

**How can collecting, organizing and displaying data help us analyze information and make reasonable predictions and informed decisions?**

	<b>CT Frameworks/Standards</b>	<b>Content and Skill Objectives</b> Students will be able to:	<b>Assessments</b>	<b>Resources</b>
<b>UNIT 1</b>  <b>Solving Equations and Inequalities</b>  <b>6 Weeks</b>	CT(Core) 1.3a (1) Model and solve problems with linear, quadratic and absolute value equations and linear inequalities. CT(Core) 1.3a (2) Determine equivalent representations of an algebraic equation or inequality to simplify and solve problems. CT(Core) 1.3a (3) Solve systems of two linear equations using algebraic and graphical methods. CT(Core) 2.2a (1) Select and use appropriate methods for computing to solve problems in a variety of contexts.	<ul style="list-style-type: none"> <li>• Solve one-step equations and inequalities</li> <li>• Solve two-step equations and inequalities</li> <li>• Solve multi-step equations and inequalities using properties of equality and inequality</li> <li>• Create simple word problems for equations and inequalities</li> <li>• Graph single variable inequalities</li> <li>• Model and solve problems using expressions and equations</li> </ul>	Quizzes Homework Teacher Observation CAPT related simulation and performance tasks Common Unit Assessment	Teacher Generated Worksheets Internet Sites <a href="http://www.kutasoftware.com">www.kutasoftware.com</a> <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a> <a href="http://www.glencoe.com">www.glencoe.com</a> CAPT released items <ul style="list-style-type: none"> <li>• Health Club</li> <li>• City Construction</li> <li>• Crater Lake</li> <li>• Car Sales</li> </ul> Calculators SMARTBoard Emulator

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<b>UNIT 2</b>  <b>Linear Functions</b>  <b>5 Weeks</b>	CT(Core) 1.1a (2)Analyze essential relations in a problem to determine possible functions that could model the situation. CT(Core) 1.1a (3)Explore conic sections and their applications graphically and symbolically. CT(Core) 1.2a(1)Relate the graphical representation of a function family and find equations, intercepts, maximum or minimum values, asymptotes and line of symmetry for the functions. 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. CT(Core) 1.2a (4) Evaluate and interpret the graphs of linear, exponential and polynomial functions. CT(Core ) 4.1a1(1) Collect real data and create meaningful graphical representations of the data	<ul style="list-style-type: none"> <li>• Graph on the coordinate plane</li> <li>• Write equations for lines by finding the first difference</li> <li>• Create charts to graph linear equations</li> <li>• Find the slope, y-intercept of a linear equation</li> <li>• Graph equations in slope-intercept form</li> <li>• Write equations in slope intercept form</li> <li>• Write a relation as a set of ordered pairs when given the equation and domain</li> <li>• Map the domain and range of a relation</li> <li>• Graph systems of equations</li> </ul>	Quizzes Homework Teacher Observation CAPT related simulation and performance tasks Common Unit Assessment	Teacher Generated Worksheets Internet Sites <a href="http://www.kutasoftware.com">www.kutasoftware.com</a> <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a> <a href="http://www.glencoe.com">www.glencoe.com</a> CAPT released items <ul style="list-style-type: none"> <li>• Smoothie Sales</li> <li>• Rubric for E85</li> </ul> Calculators SMARTBoard Emulator



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<b>UNIT 3</b>  <b>Exponents</b>  <b>4 Weeks</b>	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.  CT(Core) 2.2a (2) Solve problems involving scientific notation and absolute value.	<ul style="list-style-type: none"> <li>• Express a number in scientific notation</li> <li>• Write the decimal form for a number when given in scientific notation</li> <li>• Simplify polynomials by combining like terms</li> <li>• Evaluate polynomials for given values</li> <li>• Multiply monomials</li> <li>• Apply laws of exponent rules for multiplication, division, and raising powers to powers</li> <li>• Divide a polynomial by a monomials</li> </ul>	Quizzes Homework Teacher Observation CAPT related simulation and performance tasks Common Unit Assessment	Teacher Generated Worksheets Internet Sites <a href="http://www.kutasoftware.com">www.kutasoftware.com</a> <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a> <a href="http://www.glencoe.com">www.glencoe.com</a> CAPT released items <ul style="list-style-type: none"> <li>• Organism Length</li> <li>• Joseph's Final Grade</li> <li>• Dinosaur Weights</li> </ul> Calculators SMARTBoard Emulator

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<b>UNIT 4</b>  <b>Polynomials</b>  <b>4</b> <b>Weeks</b>	There are no specific CT Frameworks or standards that match this unit.	<ul style="list-style-type: none"> <li>• Apply power rules for multiplication, division and raising powers to powers</li> <li>• Multiply binomials (FOIL)</li> <li>• Factor polynomials using common factors</li> </ul>	Quizzes Homework Teacher Observation CAPT related simulation and performance tasks Common Unit Assessment	Teacher Generated Worksheets Internet Sites <a href="http://www.kutasoftware.com">www.kutasoftware.com</a> <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a> <a href="http://www.glencoe.com">www.glencoe.com</a> CAPT released items Calculators SMARTBoard Emulator

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<p><b>UNIT 5</b></p> <p><b>Probability and Statistics</b></p> <p><b>2 Weeks</b></p>	<p>CT(Core)) 4.1a (1) Collect real data and create meaningful graphical representations of the 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>CT(Core) 4.3a (1). Determine outcomes and solve problems involving the probabilities of events.</p> <p>CT(Core) 4.3a (3) Apply theoretical and experimental probabilities appropriately to solve problems and predict experimental results.</p>	<ul style="list-style-type: none"> <li>• Determine the probability of an event</li> <li>• Use Tree Diagrams</li> <li>• Use Venn Diagrams</li> <li>• Apply the Counting Principle</li> <li>• Determine probability based on independent and dependent events</li> <li>• Calculate permutations and combinations</li> <li>• Create a sample space</li> </ul>	<p>Teacher Observation</p> <p>CAPT related simulation and performance tasks</p> <p>Common Unit Assessment</p>	<p><a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p><a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a></p> <p><a href="http://www.glencoe.com">www.glencoe.com</a></p> <p>CAPT released items</p> <ul style="list-style-type: none"> <li>• Antique Appraisal</li> <li>• Savings Plan</li> <li>• Car Sales</li> </ul> <p>Calculators</p> <p>SMARTBoard Emulator</p>

	<b>CT Frameworks Standards</b>	<b>Content and Skill Objectives</b> Students will be able to:	<b>Assessments</b>	<b>Resources</b>
<b>UNIT 6</b>  <b>Triangles and Angle Measurement</b>  <b>5 Weeks</b>	CT(Core)3.1b (2) Create logical arguments to solve problems and determine geometric relationships. CT(Core) 3.2a (1) Interpret geometric relationships using algebraic equations and inequalities, and vice versa. CT(Core)3.2a2(2) Describe how a change in measurement of one or more parts of a polygon or solid may affect its perimeter, area, surface area and volume and make generalizations for similar figures.	<ul style="list-style-type: none"> <li>• Classify triangles by their sides and angles</li> <li>• Apply ratio and proportion to solve problems with similar figures</li> <li>• Apply properties of isosceles and equilateral triangles</li> <li>• Identify and solve congruent triangles</li> <li>• Apply the Sum of the Angles of a Triangle Theorem to find missing measures of triangles.</li> <li>• Apply The Pythagorean Theorem to find missing lengths of triangles.</li> </ul>	Quizzes Homework Teacher Observation CAPT related simulation and performance tasks Common Unit Assessment	Teacher Generated Worksheets Internet Sites <a href="http://www.kutasoftware.com">www.kutasoftware.com</a> <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a> <a href="http://www.glencoe.com">www.glencoe.com</a> CAPT released items <ul style="list-style-type: none"> <li>• Maple Syrup</li> <li>• Largest Squash</li> <li>• Rock Climbing</li> </ul> Calculators SMARTBoard Emulator

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<p><b>UNIT 7</b></p> <p><b>Parallel and Perpendicular Lines</b></p> <p><b>3 Weeks</b></p>	<p>CT(Core)3.2a (1) Interpret geometric relationships using algebraic equations and inequalities, and vice versa.</p> <p>CT(Core)3.2a3(3) Apply transformations to plane figures to determine congruence, similarity, symmetry and tessellations</p>	<ul style="list-style-type: none"> <li>• Identify and adjacent, vertical, complementary, and supplementary angles</li> <li>• Identify alternate interior, alternate exterior, consecutive interior, corresponding angles and linear pairs.</li> <li>• Identify relationships among angles formed by parallel lines to determine angle measures</li> <li>• Recognize and use properties of parallel and perpendicular lines</li> </ul>	<p>Quizzes</p> <p>Homework</p> <p>Teacher Observation</p> <p>CAPT related simulation and performance tasks</p> <p>Common Unit Assessment</p>	<p>Teacher Generated Worksheets</p> <p>Internet Sites</p> <p><a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p><a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a></p> <p><a href="http://www.glencoe.com">www.glencoe.com</a></p> <p>CAPT released items</p> <p>Calculators</p> <p>SMARTBoard Emulator</p>

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<p><b>UNIT 8</b></p> <p><b>Surface Area and Volume</b></p> <p><b>3 Weeks</b></p>	<p>CT(Core)3.2a2(3) Apply transformations to plane figures to determine congruence, similarity, symmetry and tessellations</p>	<ul style="list-style-type: none"> <li>• Calculate the area of triangles, quadrilaterals, parallelograms and trapezoids</li> <li>• Calculate lateral and total area of prisms and cylinders</li> <li>• Calculate volume of prisms, cylinders, cones and spheres.</li> </ul>	<p>Quizzes Homework Teacher Observation CAPT related simulation and performance tasks Common Unit Assessment</p>	<p>Teacher Generated Worksheets Internet Sites <a href="http://www.kutasoftware.com">www.kutasoftware.com</a> <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a> <a href="http://www.glencoe.com">www.glencoe.com</a> CAPT released items</p> <ul style="list-style-type: none"> <li>• Two Silos</li> <li>• Ms. Olsen's Sidewalk</li> <li>• City Construction</li> <li>• Soup Pot</li> </ul> <p>Calculators SMARTBoard Emulator</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 9</b></p> <p><b>Trigonometry</b></p> <p><b>2</b></p> <p><b>Weeks</b></p>	<p>CT(Core)3.3a1(1) Select appropriate units, scales, degree of precision, and strategies to determine length, angle measure, perimeter, circumference and area of plane geometric figures</p> <p>CT(Core)3.3a2(1) Select appropriate units, scales, degree of precision, and strategies to determine length, angle measure, perimeter, circumference and area of plane geometric figures</p>	<ul style="list-style-type: none"> <li>• Classify triangles using The Pythagorean Theorem</li> <li>• Determine the missing side of a triangle using the Pythagorean Theorem</li> <li>• Apply Trigonometric Ratios to find unknown sides and angle measures in right triangles.</li> </ul>	<p>Quizzes</p> <p>Homework</p> <p>Teacher Observation</p> <p>CAPT related simulation and performance tasks</p> <p>Common Unit Assessment</p>	<p>Teacher Generated Worksheets</p> <p>Internet Sites</p> <p><a href="http://www.kutasoftware.com">www.kutasoftware.com</a></p> <p><a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a></p> <p><a href="http://www.glencoe.com">www.glencoe.com</a></p> <p>CAPT released items</p> <p>Calculators</p> <p>SMARTBoard Emulator</p>