

Algebra II Curriculum

<i>Content Standards</i>	<i>Performance Standards</i>	<i>Sample Activities</i>	<i>Assessment Strategies</i>	<i>Resources</i>
<p>Understand and describe patterns and functional relationships.</p> <p>Represent and analyze quantitative relationships in a variety of ways.</p> <p>Understand and describe patterns and functional relationships.</p>	<p>Describe relationships and make generalizations about patterns and functions.</p> <p>Represent and analyze linear and nonlinear functions and relations symbolically and with tables and graphs.</p> <p>Model real world situations and make generalizations about mathematical relationships using a variety of patterns and functions.</p>	<ul style="list-style-type: none"> • Describe and compare properties and classes of linear, quadratic, and exponential functions. • Evaluate and interpret the graphs of linear, exponential, and polynomial functions. • Describe and compare properties and classes of functions including exponential, polynomial, rational and logarithmic. • Explore a sampling of conic sections and their applications graphically and symbolically. • Solve problems 	<ol style="list-style-type: none"> 1. Tests 2. Quizzes 3. Projects 4. Homework 5. Class Work 6. Take Home Tests 7. Extra Credit Assignments 8. Rubrics 	<ol style="list-style-type: none"> 1. Text 2. Course Organizers 3. State Of CT Mathematics Curriculum Framework 4. Graphing Calculator 5. Cooperative Learning Groups 6. Instructional Center 7. geometer Sketch Pad

<p>Represent and analyze quantitative relationships in a variety of ways</p> <p>Use operations, properties, and algebraic symbols to determine equivalence and solve problems.</p> <p>Use numbers and their properties to compute flexibly and fluently, and to reasonable estimate measures and quantities.</p>	<p>Relate the behavior of functions and relations to specific parameters and determine functions to model real world situations.</p> <p>Use and extend algebraic concepts to include real and complex numbers.</p> <p>Solve proportional reasoning problems.</p>	<p>involving direct and inverse variation.</p> <ul style="list-style-type: none"> • Understand and use optimization strategies including linear programming. • Relate the graphical representation of a function to its function family and find equations, intercepts, maximum or minimum values, and lines of symmetry for that function. • Combine, compose, and invert functions. • Solve problems using direct and indirect variation. 		
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<p>Understand that a variety of numerical representations can be used to describe quantitative relationships.</p>	<p>Extend the understanding of number to include the set of complex numbers.</p>	<ul style="list-style-type: none"> • Compare and contrast the properties of numbers and number systems including rational, real, and complex numbers. • Select and use an appropriate form of number (integer, fraction, decimal, ratio, percent, exponential, scientific notation, irrational, complex) to solve practical problems involving order, magnitude, measures, labels, locations and scales. 		
<p>Use numbers and their properties to compute flexibly and fluently, and to reasonably estimate measures and quantities.</p>	<p>Investigate mathematical properties and operations related to objects that are not numbers.</p>	<ul style="list-style-type: none"> • Perform operations with complex numbers and logarithms. 		
<p>Collect, organize and display data using appropriate statistical and graphical methods.</p>	<p>Create the appropriate visual or graphical representation of real data.</p>	<ul style="list-style-type: none"> • Collect real data and create meaningful 		

<p>Analyze data sets to form hypotheses and make predictions.</p> <p>Collect, organize and display data using appropriate statistical and graphical methods.</p>	<p>Analyze real world problems using statistical techniques.</p> <p>Model real data graphically using appropriate tools, technology and strategies.</p>	<p>graphical representations of the data.</p> <ul style="list-style-type: none"> • Develop, use, and explain applications and limitations of linear and nonlinear models and regression in a variety of contexts. • Estimate an unknown value between data points on a graph (interpolation) and make predictions by extending the graph (extrapolation). • Use data from samples to make inferences about a population and determine whether claims are reasonable or false. • Investigate and solve relevant problems, through designing statistical experiments and 		
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		<p>collecting, organizing, displaying, and analyzing data in tabular, graphical, and symbolic form.</p> <ul style="list-style-type: none">• Recognize the limitations of mathematical models based on sample data as representations of real-world situations.• Apply and defend regression models for bivariate data and use them to formulate predictions.		
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