

Connecticut State Core Curriculum
Standards adopted 2005
Algebraic reasoning: patterns and functions

Strand	Description	Boardworks High School Algebra presentations
1.1 Understand and describe patterns and functional relationships.	a. Describe relationships and make generalizations about patterns and functions.	Sequences and rules Arithmetic sequences Geometric sequences Other types of sequences Functions and relations Domain, range and composite functions Linear graphs Slopes and intercepts The laws of logarithms Solving equations involving logarithms Exponentials and logarithms Exponential growth and decay Graphs of important non-linear functions
	Extended:a. Model real-world situations and make generalizations about mathematical relationships using a variety of patterns and functions.	Sequences and rules Arithmetic sequences Geometric sequences Other types of sequences Sequences and series The sum of an arithmetic series The sum of a geometric series

<p>1.2 Represent and analyze quantitative relationships in a variety of ways.</p>	<p>a. Represent and analyze linear and nonlinear functions and relations symbolically and with tables and graphs.</p>	<p>Linear graphs Slopes and intercepts Parallel and perpendicular lines Non-linear functions Function notation Exponentials and logarithms Exponential growth and decay Systems of equations and graphs Absolute value functions Solving quadratic equations Graphs of quadratic functions Plotting and sketching graphs</p>
	<p>Extended:a. Relate the behavior of functions and relations to specific parameters and determine functions to model real-world situations.</p>	<p>Using equations to solve problems Real life graphs Problems leading to quadratic equations Exponential growth and decay</p>

<p>1.3 Use operations, properties and algebraic symbols to determine equivalence and solve problems.</p>	<p>a. Manipulate equations, inequalities and functions to solve problems.</p>	<p>Solving linear equations Equations with parentheses and fractions Using equations to solve problems Substituting into formulas Formula problems Rearranging a formula Manipulating formulas Generating formulas Inequalities Solving linear inequalities Inequalities and regions Inequalities in two variables Systems of equations and graphs The elimination method for systems of equations The substitution method for systems of equations Problems leading to systems of equations Function notation Non-linear functions Exponentials and logarithms Exponential growth and decay</p>
	<p>Extended:a. Use and extend algebraic concepts to include real and complex numbers, vectors and matrices.</p>	<p>–</p>