

**Southington Public Schools
Curriculum Map**

Subject: Intermediate Algebra

Grade: 12

UNIT TITLE	Linear Equations and Inequalities	Systems of Equations	Exponent Laws and Factoring Polynomials	Radicals and Rational Exponents
CONTENT	<ul style="list-style-type: none"> Solving a variety of linear equations, including those involving complex operations and word problems Solve and graph linear inequalities and understand what its solution means relative to the problem 	<ul style="list-style-type: none"> Solve systems of equations using a variety of formats and determine the appropriate technique to be used based on the problem set-up Solve, both algebraically and graphically, systems of inequalities and interpret its meaning relative to the problem 	<ul style="list-style-type: none"> Understand and apply the laws of exponents to simplify, evaluate, solve problems Use factoring techniques to solve 2nd degree equations Understand the meaning of rational and negative exponents and use to simplify expressions 	
STATE STANDARDS	<p>1.2a Represent and analyze linear and nonlinear functions an relations symbolically and with tables and graphs. <i>1.2a (2) Identify an appropriate symbolic representation for a function or relation displayed graphically or verbally.</i></p> <p>1.3a Manipulate equations, inequalities and functions to solve problems <i>1.3a (1) Model and solve problems with linear quadratic and absolute value equations and linear inequalities.</i> <i>1.3a(2) Determine equivalent representations of an algebraic equation or inequality to simplify and solve problems.</i></p>	<p>1.1a Describe relationships and make generalizations about patterns and functions <i>1.1a1 Identify, describe, create and generalize numeric, geometric and statistical patterns with tables, graphs, words and symbolic rules.</i></p> <p>1.2a Represent and analyze linear and non-linear functions and relations symbolically and with tables and graphs. <i>1.2a1 Represent functions and relations on the coordinate plane.</i> <i>1.2a2 Identify an appropriate symbolic representation for a function or relation displayed graphically or verbally</i> <i>1.2a3 Recognize and explain the meaning of the slope and intercepts as they relate to a context, graph, table or equation</i></p> <p>1.3 a Manipulate equations and</p>	<p>1.2a Represent and analyze linear and non-linear functions and relations symbolically and with tables and graphs. 1.3a Manipulate equations, inequalities and functions to solve problems.</p> <p><i>1.2a2 Identify an appropriate symbolic representation for a function or relation displayed graphically or verbally</i> <i>1.3a1 Model and solve problems with linear, quadratic and absolute value equations and linear inequalities.</i> <i>1.3a2 Determine equivalent representations of an algebraic equation or inequality to simplify and solve problems.</i></p> <p>2.1a Extend the understanding of number to include integers,</p>	<p>1.2a Represent and analyze linear and non-linear functions and relations symbolically and with tables and graphs. <i>1.2a2 Identify an appropriate symbolic representation for a function or relation displayed graphically or verbally.</i></p> <p>1.3a Manipulate equations, inequalities and functions to solve problems. <i>1.3a1 Model and solve problems with linear, quadratic and absolute value equations and linear inequalities.</i> <i>1.3a2 Determine equivalent representations of an algebraic equation or inequality to simplify and solve problems.</i></p> <p>2.1a Extend the understanding of number to include integers, rational</p>

		<p>inequalities and functions to solve problems. <i>1.3a2 Determine equivalent representation of an algebraic equation or inequality to simplify and solve problems.</i> <i>1.3a3 Solve systems of two linear equations using algebraic or graphical methods.</i></p> <p>2.2 a Develop strategies for computation and estimation using properties of number systems to solve problems.</p> <p><i>2.2a1 Select and use appropriate methods for computing to solve problems in a variety of contexts.</i> <i>2.2a3 Develop and use a variety of strategies to estimate values of formulas, functions and roots; to recognize the limitations of estimation; and to judge the implications of the results.</i></p>	<p>rational numbers and real numbers <i>2.1a2 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</i></p> <p>2.2a Develop strategies for computation and estimation using properties of number systems to solve problems. <i>2.2a1 Select and use appropriate methods for computing to solve problems in a variety of contexts.</i></p>	<p>numbers and real numbers. <i>2.1a2 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.</i></p> <p>2.2a Develop strategies for computation and estimation using properties of number systems to solve problems. <i>2.2a1 Select and use appropriate methods for computing to solve problems in a variety of contexts.</i> <i>2.2a3 Develop and use a variety of strategies to estimate values of formulas, functions and roots; to recognize the limitations of estimation; and to judge the implications of the results.</i></p>
ASSESSMENT	<p><u>PERFORMANCE TASK</u></p> <p>Design a track whose perimeter is 440 yards, whose shape is a rectangle with a semicircle at each end.</p> <p><u>OTHER EVIDENCE</u></p> <ul style="list-style-type: none"> Quizzes from Harold Robinson text content: Sections: 3..1-3.3, 3.4-3.5 and 3.6-3.7 Homework completion and questions 	<p><u>PERFORMANCE TASK</u></p> <ul style="list-style-type: none"> For graphing....Analyzing the courses of ships Unit performance task: Telephone Plan choices <p><u>OTHER EVIDENCE</u></p> <ul style="list-style-type: none"> Bouncing Balls Worksheets on solving systems...worksheets will be technique practice and real world situations 	<p><u>PERFORMANCE TASK</u></p> <ul style="list-style-type: none"> Build Me A Pool <p><u>OTHER EVIDENCE</u></p> <ul style="list-style-type: none"> Homework Class discussion and group work Quiz on using laws of exponents to simplify expressions. 	<p><u>PERFORMANCE TASK</u></p> <ul style="list-style-type: none"> Cell Phone Usage <p><u>OTHER EVIDENCE</u></p> <ul style="list-style-type: none"> Homework Class discussion Quiz on laws of exponents applied to fractional exponents. Quiz on simplifying

	<ul style="list-style-type: none"> • Class participation 	<ul style="list-style-type: none"> • Quiz on graphing • Quiz on substitution • Quiz on elimination • Quiz on graphing systems of inequalities • End of unit quiz 	<ul style="list-style-type: none"> • Quiz on factoring polynomials by GCF, grouping and special products. • Quiz on factoring polynomials by Un-FOIL (lead coefficient = 1) • Quiz on factoring polynomials by Un-FOIL (lead coefficient $\neq 1$) • Quiz on solving equations by factoring • Quiz on solving real world problems by factoring quadratic equations. 	<ul style="list-style-type: none"> radicals. • Quiz on using rational exponents and radical expressions in real world problems. • Chapter Project page 631
SKILLS	<ul style="list-style-type: none"> • Apply strategies for solving linear equations • Solve equations containing fractions or decimals • Recognize identities and equations with no solution • Write sentences as equations and solve them • Solve word problems • Use formulas to solve problems • Solve literal equations • Graph the solution sets of inequalities on the number line • Use interval notation • Solve linear inequalities • Solve inequality applications • Solve compound inequalities algebraically and on the number line. 	<ul style="list-style-type: none"> • Graph equations • Graph inequalities • Graph systems • Solve systems by graphing (paper or TI83) • Solve systems by substitution • Solve systems by elimination • Interpret systems in real world problems • Interpret graph of systems of inequalities 	<ul style="list-style-type: none"> • Apply the laws of exponents to simplify algebraic expressions and equations. • Multiply binomials using FOIL technique. • Factor polynomials. • Check factoring by multiplication and on TI83. • Solve quadratic equations by factoring. • Use the factoring of quadratics to solve real world problems. 	<ul style="list-style-type: none"> • Evaluate rational exponents on the TI83. • Use rational exponents to simplify radical expressions. • Apply the laws of exponents to rational exponents. • Solve real world problems which can be modeled by expressions with n^{th} powers or n^{th} roots.