

Haverhill Public Schools  
**MATHEMATICS CURRICULUM MAP**  
Algebra IA - HHS  
Working Document, 2009–2010

<p><u>TERM 1 – AUGUST/SEPTEMBER/OCTOBER</u></p> <p>Properties of Real Numbers</p> <p>Introduction to Algebra</p>	<p><u>TERM 2 – NOVEMBER/DECEMBER/JANUARY</u></p> <p>Introduction to Algebra, continued</p> <p>Solving Linear Equations</p>
<p><u>Δ TERM 3 – JANUARY/FEBRUARY/.MARCH</u></p> <p>Solving Linear Equations, continued</p> <p>Graphing Linear Equations and Functions</p>	<p><u>TERM 4 – APRIL/MAY/JUNE</u></p> <p>Writing Linear Equations</p> <p>Systems of Linear Equations</p>

Δ Problem solving should be on going throughout the year.

Term 1

MA Frameworks – Learning Standards	Objectives/Topics	Instructional Resources
<p>AI.N.1 Identify and use the properties of operations on real numbers, including the associative, commutative, and distributive properties; the existence of the identity and inverse elements for addition and multiplication; and the density of the set of rational numbers in the set of real numbers.</p> <p>AI.N.2 Simplify numerical expressions, including those involving positive integer exponents or the absolute value; apply such simplifications in the solution of problems.</p> <p>AI.N.1 Identify and use the properties of operations on real numbers, including the associative, commutative, and distributive properties; the existence of the identity and inverse elements for addition and multiplication; and the density of the set of rational numbers in the set of real numbers.</p> <p>AI.N.2 Simplify numerical expressions, including those involving positive integer exponents or the absolute value; apply such simplifications in the solution of problems.</p>	<p><u>Properties of Real Numbers</u></p> <p>The Real Number Line            Absolute Value            Adding Real Numbers            Subtracting Real Numbers            Multiplying Real Numbers            Dividing Real Numbers            The Distributive Property</p> <p><u>Introduction to Algebra</u></p> <p>Variables            Combining Like Terms            Exponents and Powers</p>	<p>McDougal Littell: <u>Concepts and Skills</u> – Ch. 2  <u>Algeblocks</u> : Units 2 &amp; 3</p> <p>McDougal Littell: <u>Concepts and Skills</u> – Ch. 1 &amp; 2  <u>Algeblocks</u>: Units 4</p>

Term 2

MA Frameworks – Learning Standards	Objectives/Topics	Instructional Resources
<p>AI.N.1 Identify and use the properties of operations on real numbers, including the associative, commutative, and distributive properties; the existence of the identity and inverse elements for addition and multiplication; and the density of the set of rational numbers in the set of real numbers.</p> <p>AI.N.2 Simplify numerical expressions, including those involving positive integer exponents or the absolute value; apply such simplifications in the solution of problems.</p> <p>AI.N.4 Use estimation to judge the reasonableness of results of computations and of solutions to problems involving real numbers.</p> <p>AI.P.2 Use properties of the real number system to judge the validity of equations and inequalities, to prove or disprove statements, and to justify every step in a sequential argument.</p> <p>AI.N.10 Solve equations and inequalities including those involving absolute value of linear expressions and apply to the solution of problems. (AI.N.10)</p> <p>AI.P.11 Solve everyday problems that can be modeled using linear, reciprocal, quadratic, or</p>	<p><u>Introduction to Algebra, cont.</u>            Order of Operations            Equations and Inequalities            Translating Words into Mathematical Sentences            Problem Solving Plan Using Models—4-Square Problem            Solving Strategy            Tables and Graphs            Introduction to Functions</p> <p><u>Solving Linear Equations</u>            Solving Equations Using Addition and Subtraction            Solving Equations Using Multiplication and Division            Solving Multi-Step Equations            Solving Equations with Variables on Both Sides            Solving Decimal Equations</p>	<p>McDougal Littell: <u>Concepts and Skills</u> – Ch. 1</p> <p>McDougal Littell: <u>Concepts and Skills</u> – Ch. 3</p>

<p>exponential functions. Apply appropriate tabular, graphical, or symbolic methods to the solution. Include compound interest, and direct and inverse variation problems. (AI.P.11)</p>		
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Term 3

MA Frameworks – Learning Standards	Objectives/Topics	Instructional Resources
<p>AI.N.4 Use estimation to judge the reasonableness of results of computations and of solutions to problems involving real numbers.</p> <p>AI.P.2 Use properties of the real number system to judge the validity of equations and inequalities, to prove or disprove statements, and to justify every step in a sequential argument.</p> <p>AI.N.10 Solve equations and inequalities including those involving absolute value of linear expressions and apply to the solution of problems. (AI.N.10)</p> <p>AI.P.11 Solve everyday problems that can be modeled using linear, reciprocal, quadratic, or exponential functions. Apply appropriate tabular, graphical, or symbolic methods to the solution. Include compound interest, and direct and inverse variation problems. (AI.P.11)</p> <p>AI.P.5 Demonstrate an understanding of the relationship between various representations of a line. Determine a line's slope and x- and y-intercepts from its graph or from a linear equation that represents the line. Find a linear equation describing a line from a graph or geometric description of the line, e.g., by using the 'point-slope' or 'slope-intercept' formulas. Explain the significance of a positive, negative, zero, or</p>	<p><u>Solving Linear Equations, cont.</u></p> <p>Formulas</p> <p>Ratios and Rates</p> <p>Percents</p> <p><u>Graphing Linear Equations and Functions</u></p> <p>The Coordinate Plane</p> <p>Graphing Linear Equations</p> <p>Graphing Horizontal and Vertical Lines</p> <p>Graphing Lines Using Intercepts</p>	<p>McDougal Littell: <u>Concepts and Skills</u> – Ch. 3</p> <p>McDougal Littell: <u>Concepts and Skills</u> – Ch. 4</p>

<p>undefined slope.</p> <p>AI.P.6 Find linear equations that represent lines either perpendicular or parallel to a given line and through a point, e.g., by using the “point-slope” form of the equation.</p>	<p>The Slope of a Line  Direct Variation  Graphing Lines Using Slope-Intercept Form  Functions and Relations</p>	
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Term 4

MA Frameworks – Learning Standards	Objectives/Topics	Instructional Resources
<p>AI.P.5 Demonstrate an understanding of the relationship between various representations of a line. Determine a line's slope and x- and y-intercepts from its graph or from a linear equation that represents the line. Find a linear equation describing a line from a graph or geometric description of the line, e.g., by using the ‘point-slope’ or “slope-intercept” formulas. Explain the significance of a positive, negative, zero, or undefined slope.</p> <p>AI.P.6 Find linear equations that represent lines either perpendicular or parallel to a given line and through a point, e.g., by using the “point-slope” form of the equation.</p> <p>AI.P.12 Solve everyday problems that can be modeled using systems of linear equations. Apply algebraic and graphical methods to the solution. Use technology when appropriate.</p>	<p><u>Writing Linear Equations</u>  Slope-Intercept form  Point-Slope Form  Writing Linear Equations Given Two Points  Standard Form  Modeling with Linear Equations  Perpendicular Lines</p> <p><u>Systems of Linear Equations</u>  Graphing Linear Systems  Solving Linear Systems by Substitution  Solving Linear Systems by Linear Combinations  Linear Systems and Problem Solving</p>	<p>McDougal Littell: <u>Concepts and Skills</u> – Ch. 5</p> <p>McDougal Littell: <u>Concepts and Skills</u> – Ch. 7</p>