

Curriculum at a Glance
Mathematics
Grade 7 - Accelerated Algebra (above grade level math)

Mathematics is a vigorous and growing discipline – a universal language useful for communication and research in other disciplines. We want our students to reason and communicate mathematically, to be mathematical problem-solvers, to value mathematics and to feel confident in their ability to use mathematics. Throughout the school year, math teachers at MMS foster and emphasize the following mathematical practices:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Algebra 1 is aligned with current Connecticut Core Standards. This course can be taken in the Middle School in either 7th or 8th grade, or at Darien High School. The prerequisite course for Algebra 1 is Course 3.

Unit Name	Content
Solving Linear Equations	Solving simple equations Solving multiple step equations Solving word problem equations Solving equations with variables on both sides Solving absolute value equations Literal equations without factoring Literal equations with factoring
Solving Linear Inequalities	Writing and graphing inequalities Solving inequalities using addition and subtraction Solving inequalities using multiplication and division Solving multi-step inequalities

	<p>Solving Compound Inequalities</p> <p>Solving Absolute Value Inequalities</p>
<p>Graphing Linear Equations</p>	<p>Functions</p> <p>Identifying linear functions</p> <p>Function notation</p> <p>Graphing linear equations in standard form</p> <p>Graphing linear equations in slope intercept form</p> <p>Applications word problems using slope intercept</p> <p>Transformations of absolute value graphs</p>
<p>Writing Linear Functions</p>	<p>Writing equations in slope-intercept form</p> <p>Writing equations in point-slope form</p> <p>Writing equations of parallel and perpendicular lines</p> <p>Scatter plots and lines of fit</p> <p>Analyzing lines of fit</p> <p>Piecewise functions</p>
<p>Solving Systems of Linear Equations</p>	<p>Solving systems by graphing</p> <p>Solving systems by substitution</p> <p>Solving systems by elimination</p> <p>Special systems (no solution and infinitely many solutions)</p> <p>Writing systems of equations and solving application problems</p> <p>Complex systems</p> <p>Graphing inequalities</p> <p>Solving systems of inequalities</p>
<p>Properties of Exponents and Radicals</p>	<p>Properties of exponents</p> <p>Zero and negative exponents</p> <p>Radicals and rational exponents</p> <p>Simplifying radicals</p> <p>Multiplying and dividing radicals</p> <p>Adding and subtracting radicals</p> <p>Rationalizing radicals</p> <p>Pythagorean Theorem</p> <p>Solving radical equations</p>
<p>Polynomial Equations and Factoring</p>	<p>Adding, subtracting and multiplying polynomials</p> <p>Factoring polynomials when $a = 1$</p> <p>Factoring polynomials when $a \neq 1$</p> <p>Factoring polynomials by grouping</p> <p>Word problems</p>

Graphing Quadratic Functions	Graphing $f(x)=ax^2 + bx + c$ Graphing $f(x)=a(x - h)^2 + k$ Writing quadratics in standard form Vertex form of quadratic equation
Solving Quadratic Equations	Solving quadratics by graphing Solving quadratics by completing the square Solving quadratics by the quadratic formula Solving complex systems Projectile motion
Exponential Functions	Graphing exponential functions Exponential growth and decay Comparing linear, quadratic and exponential functions